

**(3) Consultation**

In carrying out the program, the Secretary shall consult with other Federal agencies that conduct genetic and protein research.

**(b) Goals**

The program shall have the goal of developing technologies and methods based on the biological functions of genomes, microbes, and plants that—

- (1) can facilitate the production of fuels, including hydrogen in sustainable production systems that reduce greenhouse gas emissions;
- (2) convert carbon dioxide to organic carbon;
- (3) detoxify soils and water, including at facilities of the Department, contaminated with heavy metals and radiological materials;
- (4) develop cellulosic and other feedstocks that are less resource and land intensive and that promote sustainable use of resources, including soil, water, energy, forests, and land, and ensure protection of air, water, and soil quality; and
- (5) address other Department missions as identified by the Secretary.

**(c) Plan****(1) Development of plan**

Not later than 1 year after August 8, 2005, the Secretary shall prepare and transmit to Congress a research plan describing how the program authorized pursuant to this section will be undertaken to accomplish the program goals established in subsection (b).

**(2) Review of plan**

The Secretary shall contract with the National Academy of Sciences to review the research plan developed under this subsection. The Secretary shall transmit the review to Congress not later than 18 months after transmittal of the research plan under paragraph (1), along with the Secretary's response to the recommendations contained in the review.

**(d) User facilities and ancillary equipment**

Within the funds authorized to be appropriated pursuant to this part, amounts shall be available for projects to develop, plan, construct, acquire, or operate special equipment, instrumentation, or facilities, including user facilities at National Laboratories, for researchers conducting research, development, demonstration, and commercial application in systems biology and proteomics and associated biological disciplines.

**(e) Prohibition on biomedical and human cell and human subject research****(1) No biomedical research**

In carrying out the program under this section, the Secretary shall not conduct biomedical research.

**(2) Limitations**

Nothing in this section shall authorize the Secretary to conduct any research or demonstrations—

- (A) on human cells or human subjects; or
- (B) designed to have direct application with respect to human cells or human subjects.

**(f) Bioenergy research centers****(1) Establishment of centers**

In carrying out the program under subsection (a), the Secretary shall establish at least 7 bioenergy research centers, which may be of varying size.

**(2) Geographic distribution**

The Secretary shall establish at least 1 bioenergy research center in each Petroleum Administration for Defense District or Subdistrict of a Petroleum Administration for Defense District.

**(3) Goals**

The goals of the centers established under this subsection shall be to accelerate basic transformational research and development of biofuels, including biological processes.

**(4) Selection and duration****(A) In general**

A center under this subsection shall be selected on a competitive basis for a period of 5 years.

**(B) Reapplication**

After the end of the period described in subparagraph (A), a grantee may reapply for selection on a competitive basis.

**(5) Inclusion**

A center that is in existence on December 19, 2007—

(A) shall be counted towards the requirement for establishment of at least 7 bioenergy research centers; and

(B) may continue to receive support for a period of 5 years beginning on the date of establishment of the center.

(Pub. L. 109-58, title IX, §977, Aug. 8, 2005, 119 Stat. 903; Pub. L. 110-140, title II, §§232(a), 233, Dec. 19, 2007, 121 Stat. 1537.)

## REFERENCES IN TEXT

This part, referred to in subsec. (d), was in the original "this subtitle", meaning subtitle G (§§971-984A) of title IX of Pub. L. 109-58, Aug. 8, 2005, 119 Stat. 898, which enacted this part and amended section 5523 of Title 15, Commerce and Trade. For complete classification of subtitle G to the Code, see Tables.

## AMENDMENTS

2007—Subsec. (a)(1). Pub. L. 110-140, §232(a)(1), substituted "computational biology, and environmental science" for "and computational biology".

Subsec. (b)(1). Pub. L. 110-140, §232(a)(2)(A), inserted "in sustainable production systems that reduce greenhouse gas emissions" after "hydrogen".

Subsec. (b)(4), (5). Pub. L. 110-140, §232(a)(2)(B)-(D), added par. (4) and redesignated former par. (4) as (5).

Subsec. (f). Pub. L. 110-140, §233, added subsec. (f).

## EFFECTIVE DATE OF 2007 AMENDMENT

Amendment by Pub. L. 110-140 effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110-140, set out as an Effective Date note under section 1824 of Title 2, The Congress.

**§ 16318. Fission and fusion energy materials research program****(a) In general**

Along with the budget request of the President submitted to Congress for fiscal year 2007, the

Secretary shall establish a research and development program on material science issues presented by advanced fission reactors and the fusion energy program of the Department.

**(b) Administration**

In carrying out the program, the Secretary shall develop—

- (1) a catalog of material properties required for applications described in subsection (a);
- (2) theoretical models for materials possessing the required properties;
- (3) benchmark models against existing data; and
- (4) a roadmap to guide further research and development in the area covered by the program.

(Pub. L. 109–58, title IX, §978, Aug. 8, 2005, 119 Stat. 904.)

**§ 16319. Energy and water supplies**

**(a) In general**

The Secretary shall carry out a program of research, development, demonstration, and commercial application to—

- (1) address energy-related issues associated with provision of adequate water supplies, optimal management, and efficient use of water;
- (2) address water-related issues associated with the provision of adequate supplies, optimal management, and efficient use of energy; and
- (3) assess the effectiveness of existing programs within the Department and other Federal agencies to address these energy and water related issues.

**(b) Program elements**

The program under this section shall include—

- (1) arsenic treatment;
- (2) desalination; and
- (3) planning, analysis, and modeling of energy and water supply and demand.

**(c) Collaboration**

In carrying out this section, the Secretary shall consult with the Administrator of the Environmental Protection Agency, the Secretary of the Interior, the Chief Engineer of the Army Corps of Engineers, the Secretary of Commerce, the Secretary of Defense, and other Federal agencies as appropriate.

**(d) Facilities**

The Secretary may utilize all existing facilities within the Department and may design and construct additional facilities as needed to carry out the purposes of this program.

**(e) Advisory committee**

The Secretary shall establish or utilize an advisory committee to provide independent advice and review of the program.

**(f) Reports**

Not later than 2 years after August 8, 2005, the Secretary shall submit to Congress a report on the assessment described in subsection (b) and recommendations for future actions.

(Pub. L. 109–58, title IX, §979, Aug. 8, 2005, 119 Stat. 905.)

**§ 16320. Spallation Neutron Source**

**(a) Definitions**

In this section:

**(1) SING**

The term “SING” means the Spallation Neutron Source Instruments Next Generation major item of equipment.

**(2) SNS power upgrade**

The term “SNS power upgrade” means the Spallation Neutron Source power upgrade described in the 20-year facilities plan of the Office of Science of the Department.

**(3) SNS second target station**

The term “SNS second target station” means the Spallation Neutron Source second target station described in the 20-year facilities plan of the Office of Science of the Department.

**(4) Spallation Neutron Source Facility**

The terms “Spallation Neutron Source Facility” and “Facility” mean the completed Spallation Neutron Source scientific user facility located at Oak Ridge National Laboratory, Oak Ridge, Tennessee.

**(5) Spallation Neutron Source Project**

The terms “Spallation Neutron Source Project” and “Project” means Department Project 99–E–334, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

**(b) Spallation Neutron Source Project**

**(1) In general**

The Secretary shall submit to Congress, as part of the annual budget request of the President submitted to Congress, a report on progress on the Spallation Neutron Source Project.

**(2) Contents**

The report shall include for the Project—

- (A) a description of the achievement of milestones;
- (B) a comparison of actual costs to estimated costs; and
- (C) any changes in estimated Project costs or schedule.

**(c) Spallation Neutron Source Facility plan**

**(1) In general**

The Secretary shall develop an operational plan for the Spallation Neutron Source Facility that ensures that the Facility is employed to the full capability of the Facility in support of the study of advanced materials, nanoscience, and other missions of the Office of Science of the Department.

**(2) Plan**

The operational plan shall—

- (A) include a plan for the operation of an effective scientific user program that—
  - (i) is based on peer review of proposals submitted for use of the Facility;
  - (ii) includes scientific and technical support to ensure that external users, including researchers based at institutions of higher education, are able to make full use