

struction, consistent with the limitations of section 16312(c)(5) of this title.

(2) For activities under the catalysis research program under section 16313 of this title—

- (A) \$36,500,000 for fiscal year 2007;
- (B) \$38,200,000 for fiscal year 2008; and
- (C) such sums as may be necessary for fiscal year 2009.

(3) For activities under the Systems Biology Program under section 16317 of this title such sums as may be necessary for each of fiscal years 2007 through 2009.

(4) For activities under the Energy and Water Supplies program under section 16319 of this title, \$30,000,000 for each of fiscal years 2007 through 2009.

(5) For the energy research fellowships programs under section 16324 of this title, \$40,000,000 for each of fiscal years 2007 through 2009.

(6) For the advanced scientific computing activities under section 976—¹

- (A) \$270,000,000 for fiscal year 2007;
- (B) \$350,000,000 for fiscal year 2008; and
- (C) \$375,000,000 for fiscal year 2009.

(7) For the science and engineering education pilot program under section 16323 of this title—

- (A) \$4,000,000 for each of fiscal years 2007 and 2008; and
- (B) \$8,000,000 for fiscal year 2009.

(d) Integrated bioenergy research and development

In addition to amounts otherwise authorized by this section, there are authorized to be appropriated to the Secretary for integrated bioenergy research and development programs, projects, and activities, \$49,000,000 for each of the fiscal years 2005 through 2009. Activities funded under this subsection shall be coordinated with ongoing related programs of other Federal agencies, including the Plant Genome Program of the National Science Foundation. Of the funds authorized under this subsection, at least \$5,000,000 for each fiscal year shall be for training and education targeted to minority and socially disadvantaged farmers and ranchers.

(Pub. L. 109-58, title IX, §971, Aug. 8, 2005, 119 Stat. 898; Pub. L. 110-69, title V, §5007, Aug. 9, 2007, 121 Stat. 617; Pub. L. 111-358, title IX, §903, Jan. 4, 2011, 124 Stat. 4045.)

REFERENCES IN TEXT

This part, referred to in subsecs. (a) and (b), 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.

Section 976, referred to in subsecs. (b) and (c)(6), is section 976 of Pub. L. 109-58. Subsection (a) of section 976 is classified to section 16316 of this title and subsection (b) of section 976 amended section 5523 of Title 15, Commerce and Trade.

AMENDMENTS

2011—Subsec. (b)(5) to (7). Pub. L. 111-358 added pars. (5) to (7).

2007—Subsec. (b)(4). Pub. L. 110-69 added par. (4).

§ 16312. Fusion energy sciences program

(a) Declaration of policy

It shall be the policy of the United States to conduct research, development, demonstration, and commercial applications to provide for the scientific, engineering, and commercial infrastructure necessary to ensure that the United States is competitive with other countries in providing fusion energy for its own needs and the needs of other countries, including by demonstrating electric power or hydrogen production for the United States energy grid using fusion energy at the earliest date.

(b) Planning

(1) In general

Not later than 180 days after August 8, 2005, the Secretary shall submit to Congress a plan (with proposed cost estimates, budgets, and lists of potential international partners) for the implementation of the policy described in subsection (a) in a manner that ensures that—

(A) existing fusion research facilities are more fully used;

(B) fusion science, technology, theory, advanced computation, modeling, and simulation are strengthened;

(C) new magnetic and inertial fusion research and development facilities are selected based on scientific innovation and cost effectiveness, and the potential of the facilities to advance the goal of practical fusion energy at the earliest date practicable;

(D) facilities that are selected are funded at a cost-effective rate;

(E) communication of scientific results and methods between the fusion energy science community and the broader scientific and technology communities is improved;

(F) inertial confinement fusion facilities are used to the extent practicable for the purpose of inertial fusion energy research and development;

(G) attractive alternative inertial and magnetic fusion energy approaches are more fully explored; and

(H) to the extent practicable, the recommendations of the Fusion Energy Sciences Advisory Committee in the report on workforce planning, dated March 2004, are carried out, including periodic reassessment of program needs.

(2) Costs and schedules

The plan shall also address the status of and, to the extent practicable, costs and schedules for—

(A) the design and implementation of international or national facilities for the testing of fusion materials; and

(B) the design and implementation of international or national facilities for the testing and development of key fusion technologies.

(c) United States participation in ITER

(1) In general

There is authorized United States participation in the construction and operations of the

ITER project, as agreed to under the April 25, 2007 “Agreement on the Establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project”. The Director shall coordinate and carry out the responsibilities of the United States with respect to this Agreement.

(2) Report

Not later than 1 year after the date of enactment of this section, the Secretary shall submit to Congress a report providing an assessment of the most recent schedule for ITER that has been approved by the ITER Council.

(3) Authorization of appropriations

Out of funds authorized to be appropriated under section 18645(o) of this title, there shall be made available to the Secretary to carry out the construction of ITER—

(A) \$374,000,000 for fiscal year 2021; and

(B) \$281,000,000 for each of fiscal years 2022 through 2025.

(Pub. L. 109–58, title IX, §972, Aug. 8, 2005, 119 Stat. 899; Pub. L. 116–260, div. Z, title II, §2008(b), Dec. 27, 2020, 134 Stat. 2478.)

REFERENCES IN TEXT

The date of enactment of this section, referred to in subsec. (c)(2), probably means the date of enactment of Pub. L. 116–260, which enacted subsec. (c) of this section and was approved Dec. 27, 2020.

AMENDMENTS

2020—Subsec. (c). Pub. L. 116–260 amended subsec. (c) generally. Prior to amendment, subsec. (c) related to United States participation in ITER.

§ 16313. Solar Fuels Research Initiative

(a) Initiative

(1) In general

The Secretary shall carry out a research initiative, to be known as the “Solar Fuels Research Initiative” (referred to in this section as the “Initiative”) to expand theoretical and fundamental knowledge of photochemistry, electrochemistry, biochemistry, and materials science useful for the practical development of experimental systems to convert solar energy to chemical energy.

(2) Leveraging

In carrying out programs and activities under the Initiative, the Secretary shall leverage expertise and resources from—

(A) the Basic Energy Sciences Program and the Biological and Environmental Research Program of the Office of Science; and

(B) the Office of Energy Efficiency and Renewable Energy.

(3) Teams

(A) In general

In carrying out the Initiative, the Secretary shall organize activities among multidisciplinary teams to leverage, to the maximum extent practicable, expertise from the National Laboratories, institutions of higher education, and the private sector.

(B) Goals

The multidisciplinary teams described in subparagraph (A) shall pursue aggressive, milestone-driven, basic research goals.

(C) Resources

The Secretary shall provide sufficient resources to the multidisciplinary teams described in subparagraph (A) to achieve the goals described in subparagraph (B) over a period of time to be determined by the Secretary.

(4) Additional activities

The Secretary may organize additional activities under this subsection through Energy Frontier Research Centers, Energy Innovation Hubs, or other organizational structures.

(b) Artificial photosynthesis

(1) In general

The Secretary shall carry out under the Initiative a program to support research needed to bridge scientific barriers to, and discover knowledge relevant to, artificial photosynthetic systems.

(2) Activities

As part of the program described in paragraph (1)—

(A) the Director of the Office of Basic Energy Sciences shall support basic research to pursue distinct lines of scientific inquiry, including—

(i) photoinduced production of hydrogen and oxygen from water; and

(ii) the sustainable photoinduced reduction of carbon dioxide to fuel products including hydrocarbons, alcohols, carbon monoxide, and natural gas; and

(B) the Assistant Secretary for Energy Efficiency and Renewable Energy shall support translational research, development, and validation of physical concepts developed under the program.

(3) Standard of review

The Secretary shall review activities carried out under the program described in paragraph (1) to determine the achievement of technical milestones.

(4) Prohibition

No funds allocated to the program described in paragraph (1) may be obligated or expended for commercial application of energy technology.

(c) Biochemistry, replication of natural photosynthesis, and related processes

(1) In general

The Secretary shall carry out under the Initiative a program to support research needed to replicate natural photosynthetic processes by use of artificial photosynthetic components and materials.

(2) Activities

As part of the program described in paragraph (1)—

(A) the Director of the Office of Basic Energy Sciences shall support basic research to expand fundamental knowledge to replicate natural synthesis processes, including—

(i) the photoinduced reduction of dinitrogen to ammonia;

(ii) the absorption of carbon dioxide from ambient air;