

ment, demonstration, and commercial application in high energy physics, nuclear physics, biological and environmental research, basic energy sciences, advanced scientific computing research, and fusion energy sciences, including activities described in this part. The programs shall include support for facilities and infrastructure, education, outreach, information, analysis, and coordination activities.

**(b) Authorization of appropriations**

There are authorized to be appropriated to the Secretary to carry out research, development, demonstration, and commercial application activities of the Office of Science, including activities authorized under this part (including the amounts authorized under the amendment made by section 976(b)<sup>1</sup> and including basic energy sciences, advanced scientific and computing research, biological and environmental research, fusion energy sciences, high energy physics, nuclear physics, research analysis, and infrastructure support)—

- (1) \$4,153,000,000 for fiscal year 2007;
- (2) \$4,586,000,000 for fiscal year 2008;
- (3) \$5,200,000,000 for fiscal year 2009;
- (4) \$5,814,000,000 for fiscal year 2010;
- (5) \$5,247,000,000 for fiscal year 2011;
- (6) \$5,614,000,000 for fiscal year 2012; and
- (7) \$6,007,000,000 for fiscal year 2013.

**(c) Allocations**

From amounts authorized under subsection (b), the following sums are authorized:

(1) For activities under the Fusion Energy Sciences program (including activities under section 16312 of this title)—

- (A) \$355,500,000 for fiscal year 2007;
- (B) \$369,500,000 for fiscal year 2008;
- (C) \$384,800,000 for fiscal year 2009; and

(D) in addition to the amounts authorized under subparagraphs (A), (B), and (C), such sums as may be necessary for ITER construction, 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—<sup>1</sup>

- (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.)

**Editorial Notes**

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;

<sup>1</sup> See References in Text note below.

(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;
- (B) \$379,700,000 for fiscal year 2023;
- (C) \$419,250,000 for fiscal year 2024;
- (D) \$415,000,000 for fiscal year 2025;
- (E) \$370,500,000 for fiscal year 2026; and
- (F) \$411,078,000 for fiscal year 2027.

(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; Pub. L. 117-167, div. B, title I, §10105(b), Aug. 9, 2022, 136 Stat. 1445.)

**Editorial Notes**

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

2022—Subsec. (c)(3)(B) to (F). Pub. L. 117-167 added subpars. (B) to (F) and struck out former subpar. (B) which read as follows: “\$281,000,000 for each of fiscal years 2022 through 2025.”

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.