

(7) progress made toward and goals achieved in carrying out this subchapter and updates to the developmental roadmap, including the results of the reviews conducted by the National Academy of Sciences under subsection (b) for the fiscal years covered by the report; and

(8) any updates to strategic plans that are necessary to meet the goals described in paragraph (4).

(b) External review

The Secretary shall enter into an arrangement with the National Academy of Sciences under which the Academy will review the programs under sections 16154 and 16157 of this title every fourth year following August 8, 2005. The Academy's review shall include the program priorities and technical milestones, and evaluate the progress toward achieving them. The first review shall be completed not later than 5 years after August 8, 2005. Not later than 45 days after receiving the review, the Secretary shall transmit the review to Congress along with a plan to implement the review's recommendations or an explanation for the reasons that a recommendation will not be implemented.

(c) Authorization of appropriations

There is authorized to be appropriated to carry out this section \$1,500,000 for each of fiscal years 2006 through 2020.

(Pub. L. 109-58, title VIII, §811, Aug. 8, 2005, 119 Stat. 852.)

§ 16161. Solar and wind technologies

(a) Solar energy technologies

The Secretary shall—

(1) prepare a detailed roadmap for carrying out the provisions in this subchapter related to solar energy technologies and for implementing the recommendations related to solar energy technologies that are included in the report transmitted under subsection (e);

(2) provide for the establishment of 5 projects in geographic areas that are regionally and climatically diverse to demonstrate the production of hydrogen at solar energy facilities, including one demonstration project at a National Laboratory or institution of higher education;

(3) establish a program—

(A) to develop optimized concentrating solar power devices that may be used for the production of both electricity and hydrogen; and

(B) to evaluate the use of thermochemical cycles for hydrogen production at the temperatures attainable with concentrating solar power devices;

(4) coordinate with activities sponsored by the Department's Office of Nuclear Energy, Science, and Technology on high-temperature materials, thermochemical cycles, and economic issues related to solar energy;

(5) provide for the construction and operation of new concentrating solar power devices or solar power cogeneration facilities that produce hydrogen either concurrently with, or independently of, the production of electricity;

(6) support existing facilities and programs of study related to concentrating solar power devices; and

(7) establish a program—

(A) to develop methods that use electricity from photovoltaic devices for the onsite production of hydrogen, such that no intermediate transmission or distribution infrastructure is required or used and future demand growth may be accommodated;

(B) to evaluate the economics of small-scale electrolysis for hydrogen production; and

(C) to study the potential of modular photovoltaic devices for the development of a hydrogen infrastructure, the security implications of a hydrogen infrastructure, and the benefits potentially derived from a hydrogen infrastructure.

(b) Wind energy technologies

The Secretary shall—

(1) prepare a detailed roadmap for carrying out the provisions in this subchapter related to wind energy technologies and for implementing the recommendations related to wind energy technologies that are included in the report transmitted under subsection (e); and

(2) provide for the establishment of 5 projects in geographic areas that are regionally and climatically diverse to demonstrate the production of hydrogen at existing wind energy facilities, including one demonstration project at a National Laboratory or institution of higher education.

(c) Program support

The Secretary shall support programs at institutions of higher education for the development of solar energy technologies and wind energy technologies for the production of hydrogen. The programs supported under this subsection shall—

(1) enhance fellowship and faculty assistance programs;

(2) provide support for fundamental research;

(3) encourage collaborative research among industry, National Laboratories, and institutions of higher education;

(4) support communication and outreach; and

(5) to the greatest extent possible—

(A) be located in geographic areas that are regionally and climatically diverse; and

(B) be located at part B institutions, minority institutions, and institutions of higher education located in States participating in the Experimental Program to Stimulate Competitive Research of the Department.

(d) Institutions of higher education and National Laboratory interactions

In conjunction with the programs supported under this section, the Secretary shall develop sabbatical, fellowship, and visiting scientist programs to encourage National Laboratories and institutions of higher education to share and exchange personnel.

(e) Report

The Secretary shall transmit to the Congress not later than 120 days after August 8, 2005, a re-

port containing detailed summaries of the roadmaps prepared under subsections (a)(1) and (b)(1), descriptions of the Secretary's progress in establishing the projects and other programs required under this section, and recommendations for promoting the availability of advanced solar and wind energy technologies for the production of hydrogen.

(f) Definitions

For purposes of this section—

(1) the term “concentrating solar power devices” means devices that concentrate the power of the sun by reflection or refraction to improve the efficiency of a photovoltaic or thermal generation process;

(2) the term “minority institution” has the meaning given to that term in section 1067k of title 20;

(3) the term “part B institution” has the meaning given to that term in section 1061 of title 20; and

(4) the term “photovoltaic devices” means devices that convert light directly into electricity through a solid-state, semiconductor process.

(g) Authorization of appropriations

There is authorized to be appropriated such sums as are necessary for carrying out the activities under this section for each of fiscal years 2006 through 2020.

(Pub. L. 109–58, title VIII, §812, Aug. 8, 2005, 119 Stat. 853.)

§ 16162. Technology transfer

In carrying out this subchapter, the Secretary shall carry out programs that—

(1) provide for the transfer of critical hydrogen and fuel cell technologies to the private sector;

(2) accelerate wider application of those technologies in the global market;

(3) foster the exchange of generic, nonproprietary information; and

(4) assess technical and commercial viability of technologies relating to the production, distribution, storage, and use of hydrogen energy and fuel cells.

(Pub. L. 109–58, title VIII, §813, Aug. 8, 2005, 119 Stat. 855.)

§ 16163. Miscellaneous provisions

(a) Representation

The Secretary may represent the United States interests with respect to activities and programs under this subchapter, in coordination with the Department of Transportation, the National Institute of Standards and Technology, and other relevant Federal agencies, before governments and nongovernmental organizations including—

(1) other Federal, State, regional, and local governments and their representatives;

(2) industry and its representatives, including members of the energy and transportation industries; and

(3) in consultation with the Department of State, foreign governments and their representatives including international organizations.

(b) Regulatory authority

Nothing in this subchapter shall be construed to alter the regulatory authority of the Department.

(Pub. L. 109–58, title VIII, §814, Aug. 8, 2005, 119 Stat. 855.)

§ 16164. Cost sharing

The costs of carrying out projects and activities under this subchapter shall be shared in accordance with section 16352 of this title.

(Pub. L. 109–58, title VIII, §815, Aug. 8, 2005, 119 Stat. 855.)

§ 16165. Savings clause

Nothing in this subchapter shall be construed to affect the authority of the Secretary of Transportation that may exist prior to August 8, 2005, with respect to—

(1) research into, and regulation of, hydrogen-powered vehicles fuel systems integrity, standards, and safety under subtitle VI of title 49;

(2) regulation of hazardous materials transportation under chapter 51 of title 49;

(3) regulation of pipeline safety under chapter 601 of title 49;

(4) encouragement and promotion of research, development, and deployment activities relating to advanced vehicle technologies under section 5506¹ of title 49;

(5) regulation of motor vehicle safety under chapter 301 of title 49;

(6) automobile fuel economy under chapter 329 of title 49; or

(7) representation of the interests of the United States with respect to the activities and programs under the authority of title 49.

(Pub. L. 109–58, title VIII, §816, Aug. 8, 2005, 119 Stat. 855.)

REFERENCES IN TEXT

Section 5506 of title 49, referred to in par. (4), was repealed by Pub. L. 112–141, div. E, title II, §2010(a), July 6, 2012, 126 Stat. 887.

SUBCHAPTER IX—RESEARCH AND DEVELOPMENT

§ 16181. Goals

(a) In general

In order to achieve the purposes of this subchapter, the Secretary shall conduct a balanced set of programs of energy research, development, demonstration, and commercial application with the general goals of—

(1) increasing the efficiency of all energy intensive sectors through conservation and improved technologies;

(2) promoting diversity of energy supply;

(3) decreasing the dependence of the United States on foreign energy supplies;

(4) improving the energy security of the United States; and

(5) decreasing the environmental impact of energy-related activities.

¹ See References in Text note below.