(1) $4,000,000 for fiscal year 2006;
(2) $7,000,000 for fiscal year 2007;
(3) $8,000,000 for fiscal year 2008;
(4) $10,000,000 for fiscal year 2009;
(5) $9,000,000 for fiscal year 2010; and
(6) such sums as are necessary for each of fiscal years 2011 through 2020.

(Pub. L. 109–58, title VIII, §809, Aug. 8, 2005, 119 Stat. 851.)

§ 16159. Disclosure

Section 13293 of this title shall apply to any project carried out through a grant, cooperative agreement, or contract under this subchapter.

(Pub. L. 109–58, title VIII, §810, Aug. 8, 2005, 119 Stat. 852.)

§ 16160. Reports

(a) Secretary

Subject to subsection (c), not later than 2 years after August 8, 2005, and triennially thereafter, the Secretary shall submit to Congress a report describing—

(1) activities carried out by the Department under this subchapter,[1] for hydrogen and fuel cell technology;
(2) measures the Secretary has taken during the preceding 3 years to support the transition of primary industry (or a related industry) to a fully commercialized hydrogen economy;
(3) any change made to the strategy relating to hydrogen and fuel cell technology to reflect the results of a learning demonstrations;
(4) progress, including progress in infrastructure, made toward achieving the goal of producing and deploying not less than—
(A) 100,000 hydrogen-fueled vehicles in the United States by 2010; and
(B) 2,500,000 hydrogen-fueled vehicles in the United States by 2020;

(5) progress made toward achieving the goal of supplying hydrogen at a sufficient number of fueling stations in the United States by 2010 including by integrating—
(A) hydrogen activities; and
(B) associated targets and timetables for the development of hydrogen technologies;

(6) any problem relating to the design, execution, or funding of a program under this subchapter;
(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 impli-

[1] So in original. The comma probably should not appear.

cations 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 report 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.)

§ 16161a. Regional clean hydrogen hubs

(a) Definition of regional clean hydrogen hub

In this section, the term ''regional clean hydrogen hub'' means a network of clean hydrogen producers, potential clean hydrogen consumers, and connective infrastructure located in close proximity.

(b) Establishment of program

The Secretary shall establish a program to support the development of at least 4 regional clean hydrogen hubs that—

(1) demonstrably aid the achievement of the clean hydrogen production standard developed under section 16166(a) of this title;

(2) demonstrate the production, processing, delivery, storage, and end-use of clean hydrogen; and

(3) can be developed into a national clean hydrogen network to facilitate a clean hydrogen economy.

(c) Selection of regional clean hydrogen hubs

(1) Solicitation of proposals

Not later than 180 days after November 15, 2021, the Secretary shall solicit proposals for regional clean hydrogen hubs.

(2) Selection of hubs

Not later than 1 year after the deadline for the submission of proposals under paragraph (1), the Secretary shall select at least 4 regional clean hydrogen hubs to be developed under subsection (b).

(3) Criteria

The Secretary shall select regional clean hydrogen hubs under paragraph (2) using the following criteria:

(A) Feedstock diversity

To the maximum extent practicable—

(i) at least 1 regional clean hydrogen hub shall demonstrate the production of clean hydrogen from fossil fuels;

(ii) at least 1 regional clean hydrogen hub shall demonstrate the production of clean hydrogen from renewable energy; and

(iii) at least 1 regional clean hydrogen hub shall demonstrate the production of clean hydrogen from nuclear energy.

(B) End-use diversity

To the maximum extent practicable—