

(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.