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108TH CONGRESS
1ST SESSION

H. R. 1777

To provide for the establishment at the Department of Energy of a program for hydrogen fuel cell vehicles and infrastructure, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

APRIL 11, 2003

Mr. BOEHLERT introduced the following bill; which was referred to the Committee on Science, and in addition to the Committee on Energy and Commerce, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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A BILL

To provide for the establishment at the Department of Energy of a program for hydrogen fuel cell vehicles and infrastructure, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. DEFINITIONS.

In this Act:

(1) The term ''Advisory Committee'' means the Hydrogen Technical and Fuel Cell Advisory Committee established under section 5 of this Act.

(2) The term ''Department'' means the Department of Energy.

(3) The term ''fuel cell'' means a device that directly converts the chemical energy of a fuel and an oxidant into electricity by an electrochemical process taking place at separate electrodes in the device.

(4) The term ''infrastructure'' means the equipment, systems, or facilities used to produce, distribute, deliver, or store hydrogen and other advanced clean fuels.

(5) The term ''light duty vehicle'' means a car or truck, classified by the Department of Transportation as a Class I or IIA vehicle.

(6) The term ''Secretary'' means the Secretary of Energy.

SEC. 2. PLAN.

Not later than six months after the date of enactment of this Act, the Secretary shall transmit to the Congress a coordinated plan for the programs described in this Act and any other programs of the Department that are directly related to fuel cells or hydrogen. The plan shall describe, at a minimum—

(1) the agenda for the next five years for the programs authorized under this Act, including the agenda for each activity enumerated in section 3(a);

(2) the types of entities that will carry out the activities under this Act and what role each entity is expected to play;

(3) the milestones that will be used to evaluate the programs for the next five years;

(4) the most significant technical and nontechnical hurdles that stand in the way of achieving the goals described in section 3(b), and how the programs will address those hurdles; and

(5) the policy assumptions that are implicit in the plan, including any assumptions that would affect the sources of hydrogen or the marketability of hydrogen-related products.

SEC. 3. PROGRAM.

(a) ACTIVITIES.—The Secretary, in partnership with the private sector, shall conduct a program to address—

(1) production of hydrogen from diverse energy sources, including—

(A) fossil fuels, which may include carbon capture and sequestration;

(B) hydrogen-carrier fuels (including ethanol and methanol);

(C) renewable energy resources; and

(D) nuclear energy;

(2) the safe delivery of hydrogen or hydrogen-carrier fuels, including—

(A) transmission by pipeline and other distribution methods; and

(B) convenient and economic refueling of vehicles either at central refueling stations or through distributed on-site generation;

(3) advanced vehicle technologies, including—

(A) engine and emission control systems;

(B) energy storage, electric propulsion, and hybrid systems;

(C) automotive materials;

(D) clean fuels in addition to hydrogen; and

(E) other advanced vehicle technologies;

(4) storage of hydrogen or hydrogen-carrier fuels, including development of materials for safe and economic storage in gaseous, liquid, or solid form at refueling facilities and onboard vehicles;

(5) development of safe, durable, affordable, and efficient fuel cells, including research and development on fuel-flexible fuel cell power systems, improved manufacturing processes, high-temperature membranes, cost-effective fuel processing for natural

gas, fuel cell stack and system reliability, low temperature operation, and cold start capability; and

(6) development of necessary codes and standards (including international codes and standards) and safety practices for the production, distribution, storage, and use of hydrogen, hydrogen-carrier fuels and related products.

(b) PROGRAM GOALS.—

(1) VEHICLES.—For vehicles, the goals of the program are—

(A) to enable a commitment by automakers no later than year 2015 to offer safe, affordable, and technically viable hydrogen fuel cell vehicles in the mass consumer market; and

(B) to enable production, delivery, and acceptance by consumers of model year 2020 hydrogen fuel cell and other vehicles that will have—

(i) a range of at least three hundred miles;

(ii) improved performance and ease of driving;

(iii) safety and performance comparable to vehicle technologies in the market;

(iv) when compared to light duty vehicles in model year 2003—

(I) a fuel economy that is two and one half times the equivalent fuel economy of comparable light duty vehicles in model year 2003; and

(II) near zero emissions of air pollutants; and

(v) vehicle fuel system crash integrity and occupant protection.

(2) HYDROGEN ENERGY AND ENERGY INFRASTRUCTURE.—For hydrogen energy and energy infrastructure, the goals of the program are to enable a commitment not later than 2015 that will lead to infrastructure by 2020 that will provide—

(A) safe and convenient refueling;

(B) improved overall efficiency;

(C) widespread availability of hydrogen from domestic energy sources through—

(i) production, with consideration of emissions levels;

(ii) delivery, including transmission by pipeline and other distribution methods for hydrogen; and

(iii) storage, including storage in surface transportation vehicles;

(D) hydrogen for fuel cells, internal combustion engines, and other energy conversion devices for portable, stationary, and transportation applications; and

(E) other technologies consistent with the Department's plan.

(3) FUEL CELLS.—The goals for fuel cells and their portable, stationary, and transportation applications are to enable—

(A) safe, economical, and environmentally sound hydrogen fuel cells;

(B) fuel cells for light duty and other vehicles; and

(C) other technologies consistent with the Department's plan.

(c) DEMONSTRATION.—In carrying out the program under this section, the Secretary shall fund a limited number of demonstration projects. In selecting projects under this subsection, the Secretary shall, to the extent practicable and in the public interest, select projects that—

(1) involve using hydrogen and related products at facilities or installations that would exist without the demonstration program, such as existing office

buildings, military bases, vehicle fleet centers, transit bus authorities, or parks;

(2) depend on reliable power from hydrogen to carry out essential activities;

(3) lead to the replication of hydrogen technologies and draw such technologies into the marketplace;

(4) integrate in a single project both mobile and stationary applications of hydrogen fuel cells;

(5) address the interdependency of demand for hydrogen fuel cell applications and hydrogen fuel infrastructure; and

(6) raise awareness of hydrogen technology among the public.

(d) DEPLOYMENT.—In carrying out the program under this section, the Secretary shall, in partnership with the private sector, conduct activities to facilitate the deployment of—

(1) hydrogen energy and energy infrastructure;

(2) fuel cells;

(3) advanced vehicle technologies; and

(4) clean fuels in addition to hydrogen.

(e) FUNDING.—(1) The Secretary shall carry out the program under this section using a competitive, merit-review process and consistent with the generally applicable

Federal laws and regulations governing awards of financial assistance, contracts, or other agreements.

(2) Activities under this section may be carried out by funding nationally recognized university-based research centers.

(3) The Secretary shall endeavor to avoid duplication or displacement of other research and development programs and activities.

(f) COST SHARING.—

(1) REQUIREMENT.—For projects carried out through grants, cooperative agreements, or contracts under this section, the Secretary shall require a commitment from non-Federal sources of at least—

(A) 20 percent of the cost of a project, except projects carried out under subsections (c) and (d); and

(B) 50 percent of the cost of a project carried out under subsection (c) or (d).

(2) REDUCTION.—The Secretary may reduce the non-Federal requirement under paragraph (1) if the Secretary determines that—

(A) the reduction is appropriate considering the technological risks involved; or

(B) the project is for technical analyses or other activities that the Secretary does not expect to result in a marketable product.

(3) SIZE OF NON-FEDERAL SHARE.—The Secretary may consider the size of the non-Federal share in selecting projects.

SEC. 4. INTERAGENCY TASK FORCE.

(a) ESTABLISHMENT.—Not later than 120 days after the date of enactment of this Act, the President shall establish an interagency task force chaired by the Secretary or his designee with representatives from each of the following:

(1) The Office of Science and Technology Policy within the Executive Office of the President.

(2) The Department of Transportation.

(3) The Department of Defense.

(4) The Department of Commerce (including the National Institute of Standards and Technology).

(5) The Environmental Protection Agency.

(6) The National Aeronautics and Space Administration.

(7) Other Federal agencies as the Secretary determines appropriate.

(b) DUTIES.—

(1) PLANNING.—The interagency task force shall work toward—

(A) a safe, economical, and environmentally sound fuel infrastructure for hydrogen and hydrogen-carrier fuels, including an infrastructure that supports buses and other fleet transportation;

(B) fuel cells in government and other applications, including portable, stationary, and transportation applications;

(C) distributed power generation, including the generation of combined heat, power, and clean fuels including hydrogen;

(D) uniform hydrogen codes, standards, and safety protocols; and

(E) vehicle hydrogen fuel system integrity safety performance.

(2) ACTIVITIES.—The interagency task force may organize workshops and conferences, may issue publications, and may create databases to carry out its duties. The interagency task force shall—

(A) foster the exchange of generic, nonproprietary information and technology among industry, academia, and government;

(B) develop and maintain an inventory and assessment of hydrogen, fuel cells, and other advanced technologies, including the commercial capability of each technology for the economic and environmentally safe production, distribution, delivery, storage, and use of hydrogen;

(C) integrate technical and other information made available as a result of the programs and activities under this Act;

(D) promote the marketplace introduction of infrastructure for hydrogen and other clean fuel vehicles; and

(E) conduct an education program to provide hydrogen and fuel cell information to potential end-users.

(c) AGENCY COOPERATION.—The heads of all agencies, including those whose agencies are not represented on the interagency task force, shall cooperate with and furnish information to the interagency task force, the Advisory Committee, and the Department.

SEC. 5. ADVISORY COMMITTEE.

(a) ESTABLISHMENT.—The Hydrogen Technical and Fuel Cell Advisory Committee is established to advise the Secretary on the programs and activities under this Act.

(b) MEMBERSHIP.—

(1) MEMBERS.—The Advisory Committee is comprised of not fewer than 12 nor more than 25 members. These members shall be appointed by the Secretary to represent domestic industry, academia, professional societies, government agencies, and financial, environmental, and other appropriate organizations based on the Department's assessment of the technical and other qualifications of committee members and the needs of the Advisory Committee.

(2) TERMS.—The term of a member of the Advisory Committee shall not be more than 3 years. The Secretary may appoint members of the Advisory Committee in a manner that allows the terms of the members serving at any time to expire at spaced intervals so as to ensure continuity in the functioning of the Advisory Committee. A member of the Advisory Committee whose term is expiring may be reappointed.

(3) CHAIRPERSON.—The Advisory Committee shall have a chairperson, who is elected by the members from among their number.

(c) REVIEW.—The Advisory Committee shall review and make recommendations to the Secretary on—

(1) the implementation of programs and activities under this Act;

(2) the safety, economical, and environmental consequences of technologies for the production, distribution, delivery, storage, or use of hydrogen energy and fuel cells; and

(3) the plan under section 2.

(d) RESPONSE.—(1) The Secretary shall consider, but need not adopt, any recommendations of the Advisory Committee under subsection (c).

(2) The Secretary shall transmit a biennial report to the Congress describing any recommendations made by the Advisory Committee since the previous report. The report shall include a description of how the Secretary has implemented or plans to implement the recommendations, or an explanation of the reasons that a recommendation will not be implemented. The report shall be transmitted along with the President's budget proposal.

(e) SUPPORT.—The Secretary shall provide resources necessary in the judgment of the Secretary for the Advisory Committee to carry out its responsibilities under this Act.

SEC. 6. EXTERNAL REVIEW.

(a) PLAN.—The Secretary shall enter into an arrangement with a competitively selected nongovernmental entity, such as the National Academy of Sciences, to review the plan prepared under section 2, which shall be

completed not later than six months after the entity receives the plan. Not later than 45 days after receiving the review, the Secretary shall transmit the review to the Congress along with a plan to implement the review's recommendations or an explanation of the reasons that a recommendation will not be implemented.

(b) ADDITIONAL REVIEW.—The Secretary shall enter into an arrangement with a competitively selected nongovernmental entity, such as the National Academy of Sciences, under which the entity will review the program under section 3 during the fourth year following the date of enactment of this Act. The entity's review shall include the research priorities and technical milestones, and evaluate the progress toward achieving them. The review shall be completed no later than five years after the date of enactment of this Act. Not later than 45 days after receiving the review, the Secretary shall transmit the review to the Congress along with a plan to implement the review's recommendations or an explanation for the reasons that a recommendation will not be implemented.

SEC. 7. MISCELLANEOUS PROVISIONS.

(a) REPRESENTATION.—The Secretary may represent the United States interests with respect to activities and programs under this Act, 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 Act shall be construed to alter the regulatory authority of the Department.

SEC. 8. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to carry out this Act, in addition to any amounts made available for these purposes under other Acts—

(1) $273,500,000 for fiscal year 2004;

(2) $325,000,000 for fiscal year 2005;

(3) $375,000,000 for fiscal year 2006;

(4) $400,000,000 for fiscal year 2007; and

(5) $425,000,000 for fiscal year 2008.''.

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