TITLE VIII—HYDROGEN

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SEC. 801. HYDROGEN RESEARCH, DEVELOPMENT, AND DEMONSTRATION.

The Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 (42 U.S.C. 12401 et seq.) is amended to read as follows:

"SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

''(a) SHORT TITLE.—This Act may be cited as the 'Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990'.

''(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:

''TITLE V—TERMINATION OF AUTHORITY

''Sec. 501. Termination of authority.

''SEC. 2. PURPOSES.

''The purposes of this Act are—

''(1) to enable and promote comprehensive development, demonstration, and commercialization of hydrogen and fuel cell technology in partnership with industry;

''(2) to make critical public investments in building strong links to private industry, institutions of higher education, National Laboratories, and research institutions to expand innovation and industrial growth;

''(3) to build a mature hydrogen economy that creates fuel diversity in the massive transportation sector of the United States;

''(4) to sharply decrease the dependency of the United States on imported oil, eliminate most emissions from the transportation sector, and greatly enhance our energy security; and

''(5) to create, strengthen, and protect a sustainable national energy economy.

''SEC. 3. DEFINITIONS.

''In this Act:

''(1) DEPARTMENT.—The term 'Department' means the Department of Energy.

''(2) FUEL CELL.—The term 'fuel cell' means a device that directly converts the chemical energy of a fuel, which is supplied from an external source, and an oxidant into electricity by electrochemical processes occurring at separate electrodes in the device.

''(3) HEAVY-DUTY VEHICLE.—The term 'heavy-duty vehicle' means a motor vehicle that—

''(A) is rated at more than 8,500 pounds gross vehicle weight;

''(B) has a curb weight of more than 6,000 pounds; or

''(C) has a basic vehicle frontal area in excess of 45 square feet.

''(4) INFRASTRUCTURE.—The term 'infrastructure' means the equipment, systems, or facilities used to produce, distribute, deliver, or store hydrogen (except for onboard storage).

''(5) LIGHT-DUTY VEHICLE.—The term 'light-duty vehicle' means a motor vehicle that is rated at 8,500 or less pounds gross vehicle weight.

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

''(7) STATIONARY; PORTABLE.—The terms 'stationary' and 'portable', when used in reference to a fuel cell, include—

''(A) continuous electric power; and

''(B) backup electric power.

''(8) TASK FORCE.—The term 'Task Force' means the Hydrogen and Fuel Cell Technical Task Force established under section 102(a).

''(9) TECHNICAL ADVISORY COMMITTEE.—The term 'Technical Advisory Committee' means the independent Technical Advisory Committee of the Task Force selected under section 102(d).

"TITLE I—HYDROGEN AND FUEL CELLS

"SEC. 101. HYDROGEN AND FUEL CELL TECHNOLOGY RESEARCH AND DEVELOPMENT.

''(a) IN GENERAL.—The Secretary, in consultation with other Federal agencies and the private sector, shall conduct a research and development program on technologies relating to the production, purification, distribution, storage, and use of hydrogen energy, fuel cells, and related infrastructure.

''(b) GOAL.—The goal of the program shall be to demonstrate and commercialize the use of hydrogen for transportation (in light-duty vehicles and heavy-duty vehi-

cles), utility, industrial, commercial and residential applications.

''(c) FOCUS.—In carrying out activities under this section, the Secretary shall focus on factors that are common to the development of hydrogen infrastructure and the supply of vehicle and electric power for critical consumer and commercial applications, and that achieve continuous technical evolution and cost reduction, particularly for hydrogen production, the supply of hydrogen, storage of hydrogen, and end uses of hydrogen that—

''(1) steadily increase production, distribution, and end use efficiency and reduce life-cycle emissions;

''(2) resolve critical problems relating to catalysts, membranes, storage, lightweight materials, electronic controls, and other problems that emerge from research and development;

''(3) enhance sources of renewable fuels and biofuels for hydrogen production; and

''(4) enable widespread use of distributed electricity generation and storage.

''(d) PUBLIC EDUCATION AND RESEARCH.—In carrying out this section, the Secretary shall support enhanced public education and university research in fundamental sciences, application design, and systems concepts

(including education and research relating to materials, subsystems, manufacturability, maintenance, and safety) relating to hydrogen and fuel cells.

''(e) COST SHARING.—The costs of carrying out projects and activities under this section shall be shared in accordance with section [1002 of the Energy Policy Act of 2005].

''SEC. 102. TASK FORCE.

''(a) ESTABLISHMENT.—The Secretary, in consultation with the Director of the Office of Science and Technology Policy, shall establish an interagency Task Force, to be known as the 'Hydrogen and Fuel Cell Technical Task Force' to advise the Secretary in carrying out programs under this Act.

''(b) MEMBERSHIP.—

''(1) IN GENERAL.—The Task Force shall be comprised of such representatives of the Office of Science and Technology Policy, the Environmental Protection Agency, the Department of Transportation, the Department of Defense, the National Aeronautics and Space Administration, and such other members, as the Secretary, in consultation with the Director of the Office of Science and Technology Policy, determines to be appropriate.

''(2) VOTING.—A member of the Task Force that does not represent a Federal agency shall serve on the Task Force only in a nonvoting, advisory capacity.

''(c) DUTIES.—The Task Force shall review and make any necessary recommendations to the Secretary on implementation and conduct of programs under this Act.

''(d) TECHNICAL ADVISORY COMMITTEE.—

''(1) IN GENERAL.—The Secretary shall select such number of members as the Secretary considers to be appropriate to form an independent, nonpolitical Technical Advisory Committee.

''(2) MEMBERSHIP.—Each member of the Technical Advisory Committee shall have scientific, technical, or industrial expertise, as determined by the Secretary.

''(3) DUTIES.—The Technical Advisory Committee shall provide technical advice and assistance to the Task Force and the Secretary.

''SEC. 103. TECHNOLOGY TRANSFER.

''In carrying out this Act, 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.

''SEC. 104. AUTHORIZATION OF APPROPRIATIONS.

''(a) HYDROGEN SUPPLY.—There are authorized to be appropriated to carry out projects and activities relating to hydrogen production, storage, distribution and dispensing, transport, education and coordination, and technology transfer under this title—

''(1) $160,000,000 for fiscal year 2006;

''(2) $200,000,000 for fiscal year 2007;

''(3) $220,000,000 for fiscal year 2008;

''(4) $230,000,000 for fiscal year 2009;

''(5) $250,000,000 for fiscal year 2010; and

''(6) such sums as are necessary for each of fiscal years 2011 through 2015.

''(b) FUEL CELL TECHNOLOGIES.—There are authorized to be appropriated to carry out projects and activities relating to fuel cell technologies under this title—

''(1) $150,000,000 for fiscal year 2006;

''(2) $160,000,000 for fiscal year 2007;

''(3) $170,000,000 for fiscal year 2008;

''(4) $180,000,000 for fiscal year 2009;

''(5) $200,000,000 for fiscal year 2010; and

''(6) such sums as are necessary for each of fiscal years 2011 through 2015.

''TITLE II—HYDROGEN AND FUEL CELL DEMONSTRATION

''SEC. 201. HYDROGEN SUPPLY AND FUEL CELL DEMONSTRATION PROGRAM.

''(a) IN GENERAL.—The Secretary, in consultation with the Task Force and the Technical Advisory Committee, shall carry out a program to demonstrate developmental hydrogen and fuel cell systems for mobile, portable, µand stationary uses, using improved versions of the learning demonstrations program concept of the Department including demonstrations involving—

''(1) light-duty vehicles;

''(2) heavy-duty vehicles;

''(3) fleet vehicles;

''(4) specialty industrial and farm vehicles; and

''(5) commercial and residential portable, continuous, and backup electric power generation.

''(b) OTHER DEMONSTRATION PROGRAMS.—To develop widespread hydrogen supply and use options, and assist evolution of technology, the Secretary shall—

''(1) carry out demonstrations of evolving hydrogen and fuel cell technologies in national parks, remote island areas, and on Indian tribal land, as selected by the Secretary;

''(2) in accordance with any code or standards developed in a region, fund prototype, pilot fleet, and infrastructure regional hydrogen supply corridors along the interstate highway system in varied climates across the United States; and

''(3) fund demonstration programs that explore the use of hydrogen blends, hybrid hydrogen, and hydrogen reformed from renewable agricultural fuels, including the use of hydrogen in hybrid electric, heavier duty, and advanced internal combustion-powered vehicles.

''(c) SYSTEM DEMONSTRATIONS.—

''(1) IN GENERAL.—As a component of the demonstration program under this section, the Secretary shall provide grants, on a cost share basis as appropriate, to eligible entities (as determined by the Secretary) for use in—

"(A) devising system design concepts that provide for the use of advanced composite vehicles in programs under [section ____ of the Energy Policy Act of 2005 (relating to the Federal procurement of fuel cell vehicles)] that—

"(i) have as a primary goal the reduction of drive energy requirements;

"(ii) after 2010, add another research and development phase to the vehicle and infrastructure partnerships developed under the learning demonstrations program concept of the Department; and

"(iii) are managed through an enhanced FreedomCAR program within the Department that encourages involvement in cost-shared projects by manufacturers and governments; and

"(B) designing a local distributed energy system that—

"(i) incorporates renewable hydrogen production, off-grid electricity production, and fleet applications in industrial or commercial service;

"(ii) integrates energy or applications described in clause (i), such as stationary,

portable, micro, and mobile fuel cells, into a high-density commercial or residential building complex or agricultural community; and

"(iii) is managed in cooperation with industry, State, tribal, and local governments, agricultural organizations, and nonprofit generators and distributors of electricity.

"(2) COST SHARING.—The costs of carrying out a project or activity under this subsection shall be shared in accordance with [section 1002 of the Energy Policy Act of 2005].

"(d) IDENTIFICATION OF NEW RESEARCH AND DEVELOPMENT REQUIREMENTS.—In carrying out the demonstrations under subsection (a), the Secretary, in consultation with the Task Force and the Technical Advisory Committee, shall—

"(1) after 2008 for stationary and portable applications, and after 2010 for vehicles, identify new research and development requirements that refine technological concepts, planning, and applications; and

"(2) during the second phase of the learning demonstrations under subsection (c)(1)(A)(ii) rede-

sign subsequent research and development to incorporate those requirements.

"SEC. 202. AUTHORIZATION OF APPROPRIATIONS.

"There are authorized to be appropriated to carry out this title—

"(1) $185,000,000 for fiscal year 2006;

"(2) $200,000,000 for fiscal year 2007;

"(3) $250,000,000 for fiscal year 2008;

"(4) $300,000,000 for fiscal year 2009;

"(5) $375,000,000 for fiscal year 2010; and

"(6) such sums as are necessary for each of fiscal years 2011 through 2015.

"TITLE III—REGULATORY MANAGEMENT

"SEC. 301. CODES AND STANDARDS.

"(a) IN GENERAL.—The Secretary, in cooperation with the Task Force, shall provide grants to, or offer to enter into contracts with such professional organizations, public service organizations, and government agencies as the Secretary determines appropriate to support timely and extensive development of safety codes and standards relating to fuel cell vehicles, hydrogen energy systems, and stationary, portable, and micro fuel cells.

"(b) EDUCATIONAL EFFORTS.—The Secretary shall support educational efforts by organizations and agencies

described in subsection (a) to share information, including information relating to best practices, among those organizations and agencies.

''SEC. 302. DISCLOSURE.

''Section 623 of the Energy Policy Act of 1992 (42 U.S.C. 13293) shall apply to any project carried out through a grant, cooperative agreement, or contract under this Act.

''SEC. 303. AUTHORIZATION OF APPROPRIATIONS.

''There are authorized to be appropriated to carry out this title—

''(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 and 2012.

''TITLE IV—REPORTS

''SEC. 401. DEPLOYMENT OF HYDROGEN TECHNOLOGY.

''(a) SECRETARY.—Subject to subsection (c), not later than 2 years after the date of enactment of the Hydrogen and Fuel Cell Technology Act of 2005, and triennially thereafter, the Secretary shall submit to Congress a report describing—

''(1) any activity carried out by the Department of Energy under this Act, including a research, development, demonstration, and commercial application program 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 a research, development, or deployment strategy of the Secretary relating to hydrogen and fuel cell technology to reflect the results of a learning demonstration under title II;

''(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 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 can be achieved 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 Act;

''(7) progress made toward and goals achieved in carrying out this Act 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) NATIONAL ACADEMY OF SCIENCES.—

''(1) IN GENERAL.—The Secretary shall enter into an arrangement with the National Academy of Sciences to conduct and submit to the Secretary, not later than September 30, 2007, and triennially thereafter—

''(A) the results of a review of the projects and activities carried out under this Act;

''(B) recommendations for any new authorities or resources needed to achieve strategic goals; and

''(C) recommendations for approaches by which the Secretary could achieve a substantial decrease in the dependence on and consumption of natural gas and imported oil by the Federal Government, including by increasing the use of fuel cell vehicles, stationary and portable fuel cells, and hydrogen energy systems.

''(2) REAUTHORIZATION.—The Secretary shall use the results of reviews conducted under paragraph (1) in proposing to Congress any legislative changes relating to reauthorization of this Act.

''SEC. 402. AUTHORIZATION OF APPROPRIATIONS.

''There is authorized to be appropriated to carry out this title $1,500,000 for each of fiscal years 2006 through 2010.

''TITLE V—TERMINATION OF AUTHORITY

''SEC. 501. TERMINATION OF AUTHORITY.

''This Act and the authority provided by this Act terminate on September 30, 2015.''.