108TH CONGRESS
1ST SESSION

S. 461

To establish a program to promote hydrogen fuel cells, and for other purposes.

IN THE SENATE OF THE UNITED STATES

FEBRUARY 26, 2003

Mr. DORGAN (for himself, Mr. LIEBERMAN, Mrs. CLINTON, Mr. KERRY, Mr. JEFFORDS, MR. CORZINE, Mr. CONRAD, and Mr. AKAKA) introduced the following bill; which was read twice and referred to the Committee on Finance

---

A BILL

To establish a program to promote hydrogen fuel cells, 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. SHORT TITLE AND TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ''Hydrogen Fuel Cell Act of 2003''.

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

SEC. 2. FINDINGS.

Congress makes the following findings:

(1) The United States currently imports approximately 55 percent of the oil it consumes.

(2) At present trends, reliance on foreign oil will increase to 68 percent by 2025.

(3) Nearly all of the cars and trucks run on gasoline, and they are the main reason the United States imports so much oil.

(4) Two-thirds of the 20,000,000 barrels of oil Americans use each day is used for transportation.

(5) Hydrogen fuel cell vehicles offer the best hope of dramatically reducing our dependence on foreign oil, increasing our energy security, and enhancing our environmental protection.

(6) In the spirit of the Apollo project that put a man on the moon, the United States must commit the necessary resources to develop and commercialize hydrogen fuel cell vehicles, in partnership with the private sector.

(7) In developing hydrogen fuel cell vehicles, the United States must also support the development and commercialization of stationary fuel cells to power homes and other buildings, so as to diversify energy sources, better protect the environment, provide assured power, and accelerate implementation of fuel cell technology generally.

SEC. 3. PURPOSES.

The purposes of this Act are—

(1) to promote the comprehensive development, demonstration, and commercialization of hydrogen-powered fuel cells in partnership with industry;

(2) to increase our Nation's energy independence, and energy and national security in doing so;

(3) to develop a sustainable national energy strategy;

(4) to protect and strengthen the Nation's economy and standard of living;

(5) to reduce the environmental impacts of energy production, distribution, transportation, and use; and

(6) to leverage financial resources through the use of public-private partnerships.

SEC. 4. DEFINITIONS.

As used in this Act—

(1) the term ''critical technology'' means a technology that, in the opinion of the Secretary, requires understanding and development in order to take the next step needed in the development of hydrogen as an economic fuel or storage medium or in the development of fuel cell technologies as a transportation mode;

(2) the term ''fuel cell vehicle'' means a vehicle that derives all, or a significant part, of its propulsion energy from 1 or more fuel cells; and

(3) the term ''Secretary'' means the Secretary of Energy.

TITLE I—HYDROGEN AND FUEL CELL TECHNOLOGY RESEARCH AND DEVELOPMENT

SEC. 101. DEFINITIONS.

As used in this title—

(1) the term ''advisory committee'' means the advisory committee established under section 105; and

(2) the term ''critical technical issue'' means an issue that, in the opinion of the Secretary, requires understanding and development in order to take the next step needed in the development of hydrogen as an economic fuel or storage medium or in the development of fuel cell technologies as a transportation mode.

SEC. 102. HYDROGEN AND FUEL CELL RESEARCH AND DEVELOPMENT.

(a) PROGRAMS.—

(1) HYDROGEN ENERGY RESEARCH AND DEVELOPMENT PROGRAM.—The Secretary shall, in con-

sultation with the private sector, conduct a research and development program relating to the production, storage, distribution, and use of hydrogen energy, including fueling infrastructure, with the goal of enabling the private sector to demonstrate and commercialize the use of hydrogen for transportation, industrial, commercial, residential, and utility applications.

(2) FUEL CELL TECHNOLOGY RESEARCH AND DEVELOPMENT PROGRAM.—The Secretary shall conduct fuel cell technology research and development, with the goal of commercializing fuel cell vehicles and stationary fuel cells. The program shall include advanced materials, interfaces and electronics, lower cost and advanced design, balance of plant, enhanced manufacturing processes, reforming capability, and analysis and integration of systems.

(b) ELEMENTS.—In conducting the programs authorized by this section, the Secretary shall—

(1) initiate or accelerate research and development concerning critical technical issues that will contribute to the development of more economical and environmentally sound fuel cell vehicles and hydrogen energy systems, including critical technical issues with respect to—

(A) production, with consideration of cost-effective and market-efficient production from renewable energy sources;

(B) transmission and distribution;

(C) storage, including storage of hydrogen for surface transportation applications; and

(D) use, including use in—

(i) surface transportation;

(ii) fuel cells and components;

(iii) fueling infrastructure;

(iv) stationary applications; and

(v) isolated villages, islands, and communities in which other energy sources are not available or are very expensive;

(2) give particular attention to resolving critical technical issues preventing the introduction of hydrogen energy and fuel cell vehicles into the marketplace; and

(3) survey private sector hydrogen energy and fuel cell research and development activities worldwide and take steps to ensure that such activities under this section—

(A) enhance rather than unnecessarily duplicate any available research and development; and

(B) complement rather than displace or compete with the privately funded hydrogen energy or fuel cell research and development activities of United States industry.

(c) FEDERAL FUNDING.—The Secretary shall carry out the research and development activities authorized under this section using a competitive merit review process.

(d) COST SHARING.—

(1) IN GENERAL.—The Secretary shall require a commitment from non-Federal sources of at least 20 percent of the cost of proposed research and development projects under this section.

(2) REDUCTION OR ELIMINATION.—The Secretary may reduce or eliminate the cost sharing requirement under subsection (d)(1)—

(A) if the Secretary determines that the research and development is of a basic or fundamental nature; or

(B) for technical analyses, outreach activities, and educational programs that the Secretary does not expect to result in a marketable product.

SEC. 103. COORDINATION AND CONSULTATION.

(a) SECRETARY'S RESPONSIBILITY.—The Secretary shall have overall management responsibility for carrying out programs under this Act. In carrying out such programs, the Secretary, consistent with such overall management responsibility—

(1) shall establish a central point for the coordination of all hydrogen energy and fuel cell research, development, and demonstration activities of the Department of Energy; and

(2) may use the expertise of any other Federal agency in accordance with subsection (b) in carrying out any activities under this Act, to the extent that the Secretary determines that any such agency has capabilities which would allow such agency to contribute to the purposes of this Act.

(b) ASSISTANCE.—The Secretary may, in accordance with subsection (a), obtain the assistance of any Federal agency upon written request, on a reimbursable basis or otherwise and with the consent of such agency. Each such request shall identify the assistance the Secretary considers necessary to carry out any duty under this Act.

(c) CONSULTATION.—The Secretary shall consult with other Federal agencies as appropriate, and the advisory committee, in carrying out the Secretary's authorities pursuant to this Act.

SEC. 104. ADVISORY COMMITTEE.

(a) ESTABLISHMENT.—There is hereby established a Technical Advisory Committee to advise the Secretary on the programs under this Act and under title II of the Hydrogen Future Act of 1996, to remain in existence for the duration of such programs.

(b) MEMBERSHIP.—

(1) IN GENERAL.—The advisory committee shall be comprised of not fewer than 9 nor more than 15 members appointed by the Secretary, and shall be comprised of such representatives from domestic industry, universities, professional societies, Government laboratories, and financial, environmental, and other organizations as the Secretary considers appropriate based on the Secretary's assessment of the technical and other qualifications of such representatives.

(2) TERMS.—

(A) IN GENERAL.—The term of a member of the advisory committee shall not be more than 3 years.

(B) STAGGERED TERMS.—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.

(C) REAPPOINTMENT.—A member of the advisory committee whose term expires may be reappointed.

(3) CHAIRPERSON.—The advisory committee shall have a chairperson, who shall be elected by the members from among their number.

(c) COOPERATION.—The heads of Federal agencies shall cooperate with the advisory committee in carrying out the requirements of this section and shall furnish to the advisory committee such information as the advisory committee considers necessary to carry out this section.

(d) REVIEW.—The advisory committee shall review and make any necessary recommendations to the Secretary on—

(1) the implementation and conduct of programs under this title;

(2) the economic, technological, and environmental consequences of the deployment of technologies under this title; and

(3) means for removing barriers to implementing the technologies and programs under this title.

(e) RESPONSE TO RECOMMENDATIONS.—The Secretary shall consider, but need not adopt, any recommendations of the advisory committee under subsection (d). The Secretary shall either describe the implementation, or provide an explanation of the reasons that any such recommendations will not be implemented, in the report to Congress under section 103(b).

(f) SUPPORT.—The Secretary shall provide such staff, funds, and other support as may be necessary to enable the advisory committee to carry out its functions.

SEC. 105. REPORT TO CONGRESS.

(a) REPORT.—

(1) REQUIREMENT.—Not later than 1 year after the date of enactment of this Act and biennially thereafter, the Secretary shall transmit to Congress a detailed report on the status and progress of the programs authorized under this title.

(2) CONTENTS.—A report under paragraph (1) shall include, in addition to any views and recommendations of the Secretary—

(A) an assessment of the effectiveness of the programs authorized under this Act;

(B) recommendations of the advisory committee for any improvements in the program

that are needed, including recommendations for additional legislation; and

(C) to the extent practicable, an analysis of Federal, State, local, and private sector hydrogen- and fuel cell-related research, development, and demonstration activities to identify productive areas for increased intergovernmental and private-public sector collaboration.

SEC. 106. NATIONAL ACADEMY OF SCIENCES REVIEW.

Beginning 2 years after the date of enactment of this Act, and every 4 years thereafter, the National Academy of Sciences shall perform a review of the progress made through the programs and activities authorized under this Act and title II of the Hydrogen Future Act of 1996, and shall report to Congress on the results of such reviews.

SEC. 107. AUTHORIZATION OF APPROPRIATIONS FOR HYDROGEN PRODUCTION, STORAGE, AND TRANSPORT.

There are authorized to be appropriated to carry out hydrogen production, storage, and transport activities under this title (in addition to any amounts made available for such purposes under other Acts)—

(1) $200,000,000 for fiscal year 2004;

(2) $200,000,000 for fiscal year 2005;

(3) $200,000,000 for fiscal year 2006;

(4) $200,000,000 for fiscal year 2007;

(5) $100,000,000 for fiscal year 2008;

(6) $100,000,000 for fiscal year 2009;

(7) $100,000,000 for fiscal year 2010;

(8) $75,000,000 for fiscal year 2011;

(9) $75,000,000 for fiscal year 2012; and

(10) $50,000,000 for fiscal year 2013.

SEC. 108. AUTHORIZATION OF APPROPRIATIONS FOR FUEL CELL TECHNOLOGIES.

There are authorized to be appropriated to the Secretary for fuel cell technology activities under this title—

(1) $200,000,000 for fiscal year 2004;

(2) $250,000,000 for fiscal year 2005;

(3) $250,000,000 for fiscal year 2006;

(4) $200,000,000 for fiscal year 2007;

(5) $100,000,000 for fiscal year 2008;

(6) $100,000,000 for fiscal year 2009;

(7) $100,000,000 for fiscal year 2010;

(8) $75,000,000 for fiscal year 2011;

(9) $75,000,000 for fiscal year 2012; and

(10) $50,000,000 for fiscal year 2013.

TITLE II—DEMONSTRATION PROGRAMS

SEC. 201. FUEL CELL VEHICLE DEMONSTRATION PROGRAM.

(a) PROGRAM.—The Secretary shall establish a cost shared program to purchase, operate, and evaluate fuel cell vehicles in integrated service in Federal, tribal, State, local, or private fleets to demonstrate the viability of fuel cell vehicles in commercial use in a range of climates, duty cycles, and operating environments.

(b) COOPERATIVE AGREEMENTS.—In carrying out the program, the Secretary may enter into cooperative agreements with Federal, tribal, State, local agencies, or private entities and manufacturers of fuel cell vehicles.

(c) COMPONENTS.—The program shall include the following components:

(1) SELECTION OF PILOT FLEET SITES.—

(A) IN GENERAL.—The Secretary shall—

(i) consult with fleet managers to identify potential fleet sites; and

(ii) select 10 or more sites at which to carry out the program.

(B) CRITERIA.—The criteria for selecting fleet sites shall include—

(i) geographic diversity;

(ii) a wide range of climates, duty cycles, and operating environments;

(iii) the interest and capability of the participating agencies or entities;

(iv) the appropriateness of a site for refueling infrastructure and for maintaining the fuel cell vehicles; and

(v) such other criteria as the Secretary determines to be necessary to the success of the program.

(C) FEDERAL SITES.—At least 2 of the projects must be at Federal sites.

(2) FUELING INFRASTRUCTURE.—

(A) IN GENERAL.—The Secretary shall support the installation of the necessary refueling infrastructure at the fleet sites.

(B) CO-PRODUCTION OF HYDROGEN AND ELECTRICITY PILOT PROJECTS.—Priority shall be given to pilot projects that integrate—

(i) both vehicles and stationary electricity production; or

(ii) hydrogen production, storage, and distribution systems with end-use applications.

(3) PURCHASE OF FUEL CELL VEHICLES.—The Secretary, in consultation with the participating agencies, tribal, State, or local agency, academic institution, or private entity, shall purchase fuel cell vehicles for the program by competitive bid.

(4) OPERATION AND MAINTENANCE PERIOD.—The fuel cell vehicles shall be operated and maintained by the participating agencies or entities in regular duty cycles for a period of not less than 12 months.

(5) DATA COLLECTION, ANALYSIS, AND DISSEMINATION.—

(A) AGREEMENTS.—The Secretary shall enter into agreements with participating agencies, academic institutions, or private sector entities providing for the collection of proprietary and nonproprietary information with the program.

(B) PUBLIC AVAILABILITY.—The Secretary shall make available to all interested persons technical nonproprietary information and analyses collected under an agreement under subparagraph (A).

(C) PROPRIETARY INFORMATION.—The Secretary shall not disclose to the public any

proprietary information or analyses collected under an agreement under subparagraph (A).

(6) TRAINING AND TECHNICAL SUPPORT.—The Secretary shall provide such training and technical support as fleet managers and fuel cell vehicle operators require to assure the success of the program, including training and technical support in—

(A) the installation, operation, and maintenance of fueling infrastructure;

(B) the operation and maintenance of fuel cell vehicles; and

(C) data collection.

(d) COORDINATION.—The Secretary shall ensure coordination of the program with other Federal fuel cell demonstration programs to improve efficiency, share infrastructure, and avoid duplication of effort.

(e) COST SHARING.—

(1) IN GENERAL.—The Secretary shall require a 50 percent financial commitment from participating private-sector companies or other non-Federal sources for participation in the program.

(2) COMMITMENTS.—The Secretary may require a financial commitment from participating agencies or entities based on the avoided costs for

purchase, operation, and maintenance of traditional vehicles and refueling infrastructure.

(f) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section—

(1) $40,000,000 for fiscal year 2004;

(2) $100,000,000 for fiscal year 2005;

(3) $115,000,000 for fiscal year 2006;

(4) $115,000,000 for fiscal year 2007;

(5) $95,000,000 for fiscal year 2008;

(6) $30,000,000 for fiscal year 2009; and

(7) $15,000,000 for fiscal year 2010.

SEC. 202. HEAVY DUTY FUEL CELL VEHICLE FLEET DEMONSTRATION PROGRAM.

(a) ESTABLISHMENT OF PROGRAM.—The Secretary, in consultation with other Federal agencies, shall establish a program for entering into cooperative agreements with the private sector to demonstrate fuel cell-powered buses, trucks and other heavy duty vehicles.

(b) COST SHARING.—The non-Federal contribution for activities funded under this section shall be not less than—

(1) 20 percent for fuel infrastructure development activities; and

(2) 50 percent for demonstration activities and for development activities not described in paragraph (1).

(c) REPORTS TO CONGRESS.—Not later than 2 years after the date of the enactment of this Act, and not later than October 1, 2009, the Secretary, in consultation with other Federal agencies, shall transmit to the appropriate congressional committees a report that—

(1) evaluates the process of developing infrastructure to accommodate fuel cell-powered buses, trucks, and heavy duty vehicles; and

(2) assesses the results of the demonstration program under this section.

(d) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary for carrying out this demonstration program, to remain available until expended—

(1) $60,000,000 for fiscal year 2004;

(2) $90,000,000 for fiscal year 2005;

(3) $175,000,000 for fiscal year 2006;

(4) $175,000,000 for fiscal year 2007;

(5) $175,000,000 for fiscal year 2008;

(6) $135,000,000 for fiscal year 2009; and

(7) $40,000,000 for fiscal year 2010.

SEC. 203. TRIBAL STATIONARY HYBRID POWER DEMONSTRATION.

(a) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary, in cooperation with Tribes, shall develop and transmit to Congress a strategy for a demonstration and commercial application program to develop hybrid distributed power systems on tribal lands that combine—

(1) one renewable electric power generating technology of 2 megawatts or less located near the site of electric energy use; and

(2) fuel cell power generation suitable for use in distributed power systems.

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated for activities under this section—

(1) $1,000,000 for fiscal year 2005;

(2) $5,000,000 for fiscal year 2006;

(3) $5,000,000 for fiscal year 2007;

(4) $4,000,000 for fiscal year 2008;

(5) $3,000,000 for fiscal year 2009; and

(6) $2,000,000 for fiscal year 2010.

SEC. 204. STATIONARY FUEL CELL GRANT DEMONSTRATION PROGRAM.

(a) SOLICITATION OF PROPOSALS.—The Secretary shall solicit proposals for projects demonstrating hydrogen

technologies needed to operate fuel cells in Federal, tribal, State, and local government, and academic, and private stationary applications.

(b) COMPETITIVE EVALUATION.—Each proposal submitted in response to the solicitation under this section shall be evaluated on a competitive basis using peer review. The Secretary is not required to make an award under this section in the absence of a meritorious proposal.

(c) PREFERENCE.—The Secretary shall give preference, in making an award under this section, to proposals that—

(1) are submitted jointly from consortia including academic institutions, industry, State or local governments, and Federal laboratories; and

(2) reflect proven experience and capability with technologies relevant to the projects proposed.

(d) NON-FEDERAL SHARE.—

(1) IN GENERAL.—Except as provided in paragraph (2), the Secretary shall require a commitment from non-Federal sources of at least 50 percent of the costs directly relating to a demonstration project under this section.

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

the Secretary determines that the reduction is appropriate considering the technological risks involved in the project.

(e) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section—

(1) $45,000,000 for fiscal year 2004;

(2) $85,000,000 for fiscal year 2005;

(3) $95,000,000 for fiscal year 2006;

(4) $95,000,000 for fiscal year 2007;

(5) $65,000,000 for fiscal year 2008;

(6) $50,000,000 for fiscal year 2009; and

(7) $15,000,000 for fiscal year 2010.

TITLE III—FEDERAL PURCHASE PROGRAM

SEC. 301. PROCUREMENT OF FUEL CELL VEHICLES.

(a) TRANSITION PLAN.—Each agency of the Federal Government that maintains a fleet of motor vehicles shall develop a plan for a transition of the fleet to vehicles powered by fuel cell technology, including plans for necessary fueling infrastructure, training, and maintenance and operation of such vehicles. Each such plan shall include implementation beginning no later than fiscal year 2008. Each plan shall incorporate and build on the results of completed and ongoing Federal demonstration programs,

and shall include additional demonstration programs and pilot programs as necessary to test or investigate available technologies and transition procedures.

(b) REQUIREMENT.—The Secretary, in collaboration with the General Services Administration and other Federal agencies, shall purchase and place 20,000 hydrogen-powered fuel cell vehicles by 2010 in Federal fleets and the requisite fueling infrastructure.

(c) EXCEPTIONS.—The head of an executive agency is not required to procure a fuel cell vehicle under subsection (c) if—

(1) no fuel cell vehicle is available that meets the requirements of the executive agency; or

(2) it is not practicable to do so for a particular agency or instance.

(d) PROCUREMENT PLANNING.—The head of an executive agency shall incorporate into the specifications for all designs and procurements, and into the factors for the evaluation of offers received for the procurement, criteria for fuel cell vehicles that are consistent with vehicle purchasing requirements.

(e) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section—

(1) $10,000,000 for fiscal year 2005;

(2) $15,000,000 for fiscal year 2006;

(3) $50,000,000 for fiscal year 2007;

(4) $150,000,000 for fiscal year 2008;

(5) $175,000,000 for fiscal year 2009;

(6) $170,000,000 for fiscal year 2010;

(7) $110,000,000 for fiscal year 2011;

(8) $65,000,000 for fiscal year 2012; and

(9) $55,000,000 for fiscal year 2013.

SEC. 302. FEDERAL STATIONARY FUEL CELL POWER PURCHASE PROGRAM.

(a) PROGRAM.—The Secretary shall establish a program within 1 year after the date of enactment of this Act for the acquisition by Federal agencies of—

(1) up to 200 megawatts of commercially available fuel cell power plants;

(2) up to 200 megawatts of power generated from commercially available fuel cell power plants; or

(3) a combination thereof, by 2006 and annually thereafter for use at federally-owned or -operated facilities, Federal residences, and Federal portable applications. The Secretary shall provide funding for purchase, site engineering, installation, start-up, training, operation, and maintenance costs asso-

ciated with the acquisition of such power or power plants, along with any other necessary assistance.

(b) DOMESTIC ASSEMBLY.—All fuel cell systems in power plants acquired, or from which power is acquired, under subsection (a) shall be assembled in the United States.

(c) SITE SELECTION.—In the selection of federally-owned or -operated facilities as a site for the location of power plants acquired under this section, or as a site to receive power acquired under this section, priority shall be given to sites with 1 or more of the following attributes:

(1) Location (of the Federal facility or the generating power plant) in an area classified as a non-attainment area under title I of the Clean Air Act.

(2) Computer or electronic operations that are sensitive to power supply disruptions.

(3) Need for a reliable, uninterrupted power supply.

(4) Academic institution.

(5) Rural or remote location, or other factors requiring off-grid power generation.

(6) Critical manufacturing or other activities that support national security efforts.

(d) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section—

(1) $5,000,000 for fiscal year 2004;

(2) $10,000,000 for fiscal year 2005;

(3) $15,000,000 for fiscal year 2006;

(4) $50,000,000 for fiscal year 2007;

(5) $75,000,000 for fiscal year 2008;

(6) $85,000,000 for fiscal year 2009;

(7) $75,000,000 for fiscal year 2010;

(8) $50,000,000 for fiscal year 2011;

(9) $25,000,000 for fiscal year 2012; and

(10) $10,000,000 for fiscal year 2013.

(e) LIFE CYCLE COST BENEFIT.—Any life cycle cost benefit analysis undertaken by a Federal agency with respect to investments in fuel cell products, services, construction, and other projects shall include an analysis of environmental, power reliability, and oil dependence factors.

SEC. 303. ESTABLISHMENT OF AN INTERAGENCY TASK FORCE.

(a) ESTABLISHMENT.—Not later than 120 days after the date of enactment of this Act, the Secretary shall establish an interagency task force led by the Secretary's designee and comprised of representatives of—

(1) the Office of Science and Technology Policy;

(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; and

(7) other Federal agencies as appropriate.

(b) DUTIES.—The task force shall develop a plan for carrying out titles II and III.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated such sums as may be necessary to carry out the requirements of this section.

TITLE IV—REMOVAL OF REGULATORY BARRIERS

SEC. 401. AMENDMENTS TO PURPA.

(a) ADOPTION OF STANDARDS.—Section 113(b) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2623(b)) is amended by adding at the end the following:

''(6) DISTRIBUTED GENERATION.—Each electric utility shall provide distributed generation, combined heat and power, and district heating and cooling systems competitive access to the local distribu-

tion grid and competitive pricing of service, and shall use simplified standard contracts for the interconnection of generating facilities that have a power production capacity of 250 kilowatts or less per unit.

''(7) DISTRIBUTION INTERCONNECTIONS.—No electric utility may refuse to interconnect a generating facility with the distribution facilities of the electric utility if the owner or operator of the generating facility complies with procedures adopted by the State regulatory authority and agrees to pay the costs established by such State regulatory authority.

''(8) MINIMUM FUEL AND TECHNOLOGY DIVERSITY STANDARD.—Each electric utility shall develop a plan to minimize dependence on 1 fuel source and to ensure that the electric energy it sells to consumers is generated using a diverse range of fuels and technologies, including renewable and high-efficiency technologies.

''(9) PROHIBITED RATES AND CHARGES.—No electric utility shall charge the owner or operator of an on-site generating facility an additional standby, capacity, interconnection, or other rate or charge.''.

(b) TIME FOR ADOPTING STANDARDS.—Section 113 of the Public Utility Regulatory Policies Act of 1978 (16

U.S.C. 2623) is further amended by adding at the end the following:

''(d) SPECIAL RULE.—For purposes of implementing paragraphs (6), (7), (8), and (9) of subsection (b), any reference contained in this section to the date of enactment of the Public Utility Regulatory Policies Act of 1978, shall be deemed to be a reference to the date of enactment of this subsection.''.

SEC. 402. NET METERING.

(a) ADOPTION OF STANDARD.—Section 111(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)) is amended by adding at the end the following:

''(11) NET METERING.—(A) Each electric utility shall make available upon request net metering service to any electric consumer that the electric utility serves.

''(B) For purposes of implementing this paragraph, any reference contained in this section to the date of enactment of the Public Utility Regulatory Policies Act of 1978, shall be deemed to be a reference to the date of enactment of this paragraph.

''(C) The Commission shall implement the standards set out in this section not later than 1 year after the date of enactment of this paragraph. Notwithstanding subsections (b) and (c) of section

112, a State may adopt alternative standards or procedures regarding net metering as defined in this section; provided that net metering service, pursuant to standards and procedures adopted by the Commission, shall be available to any electric consumer within any State notwithstanding the adoption by any State of such alternative standards or procedures.

''(D) Notwithstanding subsections (b) and (c) of section 112, each State regulatory authority shall consider and make a determination concerning whether it is appropriate to implement the standard set out in subparagraph (A) not later than 1 year after the date of enactment of this paragraph.''.

(b) SPECIAL RULES FOR NET METERING.—Section 115 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2625) is amended by adding at the end the following:

''(i) NET METERING.—

''(1) RATES AND CHARGES.—An electric utility—

''(A) shall charge the owner or operator of an on-site generating facility rates and charges that are identical to those that would be charged other electric consumers of the electric

utility in the same rate class to which the owner or operator would be assigned if there were no on-site generating facility; and

''(B) shall not charge the owner or operator of an on-site generating facility any additional standby, capacity, interconnection, or other rate or charge.

''(2) MEASUREMENT.—An electric utility that sells electric energy to the owner or operator of an on-site generating facility shall measure the quantity of electric energy produced by the on-site facility, using a single meter unless the electric utility can establish to the State regulatory authority that a single meter is not technically feasible, and the quantity of electric energy consumed by the owner or operator of an on-site generating facility during a billing period is in accordance with normal metering practices.

''(3) ELECTRIC ENERGY SUPPLIED EXCEEDING ELECTRIC ENERGY GENERATED.—If the quantity of electric energy sold by the electric utility to an on-site generating facility exceeds the quantity of electric energy supplied by the on-site generating facility to the electric utility during the billing period, the electric utility may bill the owner or operator for the

net quantity of electric energy sold, in accordance with normal metering practices.

''(4) ELECTRIC ENERGY GENERATED EXCEEDING ELECTRIC ENERGY SUPPLIED.—If the quantity of electric energy supplied by the on-site generating facility to the electric utility exceeds the quantity of electric energy sold by the electric utility to the on-site generating facility during the billing period—

''(A) the electric utility may bill the owner or operator of the on-site generating facility for the appropriate charges for the billing period in accordance with paragraph (2); and

''(B) the owner or operator of the on-site generating facility shall be credited for the excess kilowatt-hours generated during the billing period, with the kilowatt-hour credit appearing on the bill for the following billing period.

''(5) SAFETY AND PERFORMANCE STANDARDS.—An eligible on-site generating facility and net metering system used by an electric consumer shall be interconnected provided the facility meets all applicable safety, performance, reliability, and interconnection standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, and Underwriters Laboratories.

''(6) ADDITIONAL CONTROL AND TESTING REQUIREMENTS.—The Commission, after consultation with State regulatory authorities and nonregulated electric utilities and after notice and opportunity for comment, may adopt, by rule, additional control and testing requirements for on-site generating facilities and net metering systems that the Commission determines are necessary to protect public safety and system reliability.

''(7) DEFINITIONS.—For purposes of this subsection—

''(A) the term 'eligible on-site generating facility' means—

''(i) a facility on the site of a residential electric consumer with a maximum generating capacity of 10 kilowatts or less per unit that is fueled by solar energy, wind energy, or fuel cells; or

''(ii) a facility on the site of a commercial electric consumer with a maximum generating capacity of 500 kilowatts or less per unit that is fueled solely by a renewable energy resource, landfill gas, or a high efficiency system;

''(B) the term 'renewable energy resource' means solar, wind, biomass, or geothermal energy;

''(C) the term 'high efficiency system' means fuel cells or combined heat and power; and

''(D) the term 'net metering service' means service to an electric consumer under which electric energy generated by that electric consumer from an eligible on-site generating facility and delivered to the local distribution facilities may be used to offset electric energy provided by the electric utility to the electric consumer during the applicable billing period.''.

SEC. 403. DEPARTMENT OF ENERGY STUDY.

The Secretary, in consultation with other Federal agencies, as appropriate, shall identify barriers to the introduction of portable fuel cells, including regulatory barriers, and take appropriate action to eliminate such barriers in a timely fashion.

TITLE V—TAX INCENTIVES FOR HYDROGEN FUEL CELL TECHNOLOGY

SEC. 501. HYDROGEN FUEL CELL MOTOR VEHICLE CREDIT.

(a) IN GENERAL.—Subpart B of part IV of subchapter A of chapter 1 of the Internal Revenue Code of 1986 (relating to foreign tax credit, etc.) is amended by adding at the end the following new section:

"SEC. 30B. HYDROGEN FUEL CELL MOTOR VEHICLE CREDIT.

"(a) ALLOWANCE OF CREDIT.—There shall be allowed as a credit against the tax imposed by this chapter for the taxable year an amount equal to the new qualified hydrogen fuel cell motor vehicle credit determined under subsection (b).

"(b) NEW QUALIFIED HYDROGEN FUEL CELL MOTOR VEHICLE CREDIT.—

"(1) IN GENERAL.—For purposes of subsection (a), the new qualified hydrogen fuel cell motor vehicle credit determined under this subsection with respect to a new qualified hydrogen fuel cell motor vehicle placed in service by the taxpayer during the taxable year is—

''(A) $4,000, if such vehicle has a gross vehicle weight rating of not more than 8,500 pounds,

''(B) $10,000, if such vehicle has a gross vehicle weight rating of more than 8,500 pounds but not more than 14,000 pounds,

''(C) $20,000, if such vehicle has a gross vehicle weight rating of more than 14,000 pounds but not more than 26,000 pounds, and

''(D) $40,000, if such vehicle has a gross vehicle weight rating of more than 26,000 pounds.

''(2) INCREASE FOR FUEL EFFICIENCY.—

''(A) IN GENERAL.—The amount determined under paragraph (1)(A) with respect to a new qualified hydrogen fuel cell motor vehicle which is a passenger automobile or light truck shall be increased by—

''(i) $1,000, if such vehicle achieves at least 150 percent but less than 175 percent of the 2000 model year city fuel economy,

''(ii) $1,500, if such vehicle achieves at least 175 percent but less than 200 per-

cent of the 2000 model year city fuel economy,

"(iii) $2,000, if such vehicle achieves at least 200 percent but less than 225 percent of the 2000 model year city fuel economy,

"(iv) $2,500, if such vehicle achieves at least 225 percent but less than 250 percent of the 2000 model year city fuel economy,

"(v) $3,000, if such vehicle achieves at least 250 percent but less than 275 percent of the 2000 model year city fuel economy,

"(vi) $3,500, if such vehicle achieves at least 275 percent but less than 300 percent of the 2000 model year city fuel economy, and

"(vii) $4,000, if such vehicle achieves at least 300 percent of the 2000 model year city fuel economy.

"(B) 2000 MODEL YEAR CITY FUEL ECONOMY.—For purposes of subparagraph (A), the 2000 model year city fuel economy with respect

to a vehicle shall be determined in accordance with the following tables:

''(i) In the case of a passenger automobile:

"If vehicle inertia weight class is:	The 2000 model year city fuel economy is:
1,500 or 1,750 lbs	43.7 mpg
2,000 lbs	38.3 mpg
2,250 lbs	34.1 mpg
2,500 lbs	30.7 mpg
2,750 lbs	27.9 mpg
3,000 lbs	25.6 mpg
3,500 lbs	22.0 mpg
4,000 lbs	19.3 mpg
4,500 lbs	17.2 mpg
5,000 lbs	15.5 mpg
5,500 lbs	14.1 mpg
6,000 lbs	12.9 mpg
6,500 lbs	11.9 mpg
7,000 to 8,500 lbs	11.1 mpg.

''(ii) In the case of a light truck:

"If vehicle inertia weight class is:	The 2000 model year city fuel economy is:
1,500 or 1,750 lbs	37.6 mpg
2,000 lbs	33.7 mpg
2,250 lbs	30.6 mpg
2,500 lbs	28.0 mpg
2,750 lbs	25.9 mpg
3,000 lbs	24.1 mpg
3,500 lbs	21.3 mpg
4,000 lbs	19.0 mpg
4,500 lbs	17.3 mpg
5,000 lbs	15.8 mpg
5,500 lbs	14.6 mpg
6,000 lbs	13.6 mpg
6,500 lbs	12.8 mpg
7,000 to 8,500 lbs	12.0 mpg.

''(C) VEHICLE INERTIA WEIGHT CLASS.—For purposes of subparagraph (B), the term 'vehicle inertia weight class' has the same meaning as when defined in regulations prescribed by the Administrator of the Environ-

mental Protection Agency for purposes of the administration of title II of the Clean Air Act (42 U.S.C. 7521 et seq.).

''(3) NEW QUALIFIED HYDROGEN FUEL CELL MOTOR VEHICLE.—For purposes of this subsection, the term 'new qualified hydrogen fuel cell motor vehicle' means a motor vehicle—

''(A) which is propelled by power derived from one or more cells which convert chemical energy directly into electricity by combining oxygen with hydrogen fuel which is stored on board the vehicle in any form and may or may not require reformation prior to use,

''(B) which, in the case of a passenger automobile or light truck—

''(i) for 2003 model vehicles, has received a certificate of conformity under the Clean Air Act and meets or exceeds the equivalent qualifying California low emission vehicle standard under section 243(e)(2) of the Clean Air Act for that make and model year, and

''(ii) for 2004 and later model vehicles, has received a certificate that such vehicle meets or exceeds the Bin 5 Tier II

emission level established in regulations prescribed by the Administrator of the Environmental Protection Agency under section 202(i) of the Clean Air Act for that make and model year vehicle,

''(C) the original use of which commences with the taxpayer,

''(D) which is acquired for use or lease by the taxpayer and not for resale, and

''(E) which is made by a manufacturer.

''(c) APPLICATION WITH OTHER CREDITS.—The credit allowed under subsection (a) for any taxable year shall not exceed the excess (if any) of—

''(1) the regular tax for the taxable year reduced by the sum of the credits allowable under subpart A and sections 27, 29, and 30, over

''(2) the tentative minimum tax for the taxable year.

''(d) OTHER DEFINITIONS AND SPECIAL RULES.—For purposes of this section—

''(1) MOTOR VEHICLE.—The term 'motor vehicle' has the meaning given such term by section 30(c)(2).

''(2) CITY FUEL ECONOMY.—The city fuel economy with respect to any vehicle shall be measured in

a manner which is substantially similar to the manner city fuel economy is measured in accordance with procedures under part 600 of subchapter Q of chapter I of title 40, Code of Federal Regulations, as in effect on the date of the enactment of this section.

''(3) OTHER TERMS.—The terms 'automobile', 'passenger automobile', 'light truck', and 'manufacturer' have the meanings given such terms in regulations prescribed by the Administrator of the Environmental Protection Agency for purposes of the administration of title II of the Clean Air Act (42 U.S.C. 7521 et seq.).

''(4) REDUCTION IN BASIS.—For purposes of this subtitle, the basis of any property for which a credit is allowable under subsection (a) shall be reduced by the amount of such credit so allowed (determined without regard to subsection (c)).

''(5) NO DOUBLE BENEFIT.—The amount of any deduction or other credit allowable under this chapter with respect to a new qualified hydrogen fuel cell motor vehicle shall be reduced by the amount of credit allowed under subsection (a) for such vehicle for the taxable year.

''(6) PROPERTY USED BY TAX-EXEMPT ENTITIES.—In the case of a credit amount which is allowable with respect to a new qualified hydrogen fuel cell motor vehicle which is acquired by an entity exempt from tax under this chapter, the person which sells or leases such vehicle to the entity shall be treated as the taxpayer with respect to the vehicle for purposes of this section and the credit shall be allowed to such person, but only if the person clearly discloses to the entity at the time of any sale or lease the specific amount of any credit otherwise allowable to the entity under this section.

''(7) RECAPTURE.—The Secretary shall, by regulations, provide for recapturing the benefit of any credit allowable under subsection (a) with respect to any property which ceases to be property eligible for such credit (including recapture in the case of a lease period of less than the economic life of a vehicle).

''(8) PROPERTY USED OUTSIDE UNITED STATES, ETC., NOT QUALIFIED.—No credit shall be allowed under subsection (a) with respect to any property referred to in section 50(b) or with respect to the portion of the cost of any property taken into account under section 179.

''(9) ELECTION TO NOT TAKE CREDIT.—No credit shall be allowed under subsection (a) for any vehicle if the taxpayer elects to not have this section apply to such vehicle.

''(10) CARRYBACK AND CARRYFORWARD ALLOWED.—

''(A) IN GENERAL.—If the credit amount allowable under subsection (a) for a taxable year exceeds the amount of the limitation under subsection (c) for such taxable year (in this paragraph referred to as the 'unused credit year'), such excess shall be allowed as a credit carryback for each of the 3 taxable years beginning after the date of the enactment of this section which precede the unused credit year and a credit carryforward for each of the 20 taxable years which succeed the unused credit year.

''(B) RULES.—Rules similar to the rules of section 39 shall apply with respect to the credit carryback and credit carryforward under subparagraph (A).

''(11) INTERACTION WITH AIR QUALITY AND MOTOR VEHICLE SAFETY STANDARDS.—Unless otherwise provided in this section, a motor vehicle shall

not be considered eligible for a credit under this section unless such vehicle is in compliance with—

''(A) the applicable provisions of the Clean Air Act for the applicable make and model year of the vehicle (or applicable air quality provisions of State law in the case of a State which has adopted such provision under a waiver under section 209(b) of the Clean Air Act), and

''(B) the motor vehicle safety provisions of sections 30101 through 30169 of title 49, United States Code.

''(e) REGULATIONS.—

''(1) IN GENERAL.—Except as provided in paragraph (2), the Secretary shall promulgate such regulations as necessary to carry out the provisions of this section.

''(2) COORDINATION IN PRESCRIPTION OF CERTAIN REGULATIONS.—The Secretary of the Treasury, in coordination with the Secretary of Transportation and the Administrator of the Environmental Protection Agency, shall prescribe such regulations as necessary to determine whether a motor vehicle meets the requirements to be eligible for a credit under this section.''.

(b) CONFORMING AMENDMENTS.—

(1) Section 1016(a) of the Internal Revenue Code of 1986 is amended by striking ''and'' at the end of paragraph (27), by striking the period at the end of paragraph (28) and inserting '', and'', and by adding at the end the following new paragraph:

''(29) to the extent provided in section 30B(d)(4).''.

(2) Section 55(c)(2) of such Code is amended by inserting ''30B(c),'' after ''30(b)(3)''.

(3) Section 6501(m) of such Code is amended by inserting ''30B(d)(9),'' after ''30(d)(4),''.

(4) The table of sections for subpart B of part IV of subchapter A of chapter 1 of such Code is amended by inserting after the item relating to section 30A the following new item:

''Sec. 30B. Hydrogen fuel cell motor vehicle credit.''.

(c) EFFECTIVE DATE.—The amendments made by this section shall apply to property placed in service after the date of the enactment of this Act, in taxable years ending after such date.

SEC. 502. CREDIT FOR INSTALLATION OF HYDROGEN FUEL CELL MOTOR VEHICLE FUELING STATIONS.

(a) IN GENERAL.—Subpart B of part IV of subchapter A of chapter 1 of the Internal Revenue Code of 1986 (relating to foreign tax credit, etc.), as amended by

this Act, is amended by adding at the end the following new section:

''SEC. 30C. HYDROGEN FUEL CELL MOTOR VEHICLE REFUELING PROPERTY CREDIT.

''(a) CREDIT ALLOWED.—There shall be allowed as a credit against the tax imposed by this chapter for the taxable year an amount equal to 50 percent of the amount paid or incurred by the taxpayer during the taxable year for the installation of qualified hydrogen fuel cell motor vehicle refueling property.

''(b) LIMITATION.—The credit allowed under subsection (a)—

''(1) with respect to any retail hydrogen fuel cell motor vehicle refueling property, shall not exceed $30,000, and

''(2) with respect to any residential hydrogen fuel cell motor vehicle refueling property, shall not exceed $1,500.

''(c) YEAR CREDIT ALLOWED.—The credit allowed under subsection (a) shall be allowed in the taxable year in which the qualified hydrogen fuel cell motor vehicle refueling property is placed in service by the taxpayer.

''(d) DEFINITIONS.—For purposes of this section—

''(1) QUALIFIED HYDROGEN FUEL CELL MOTOR VEHICLE REFUELING PROPERTY.—The term 'quali-

fied hydrogen fuel cell motor vehicle refueling property' means any property (not including a building and its structural components) if—

"(A) such property is of a character subject to the allowance for depreciation,

"(B) the original use of such property begins with the taxpayer, and

"(C) such property is for the storage or dispensing of hydrogen fuel into the fuel tank of a motor vehicle propelled by such fuel, but only if the storage or dispensing of the fuel is at the point where such fuel is delivered into the fuel tank of the motor vehicle.

In the case of hydrogen produced from another clean-burning fuel (as defined in section 179A(c)(1)), subparagraph (C) shall be applied by substituting 'production, storage, or dispensing' for 'storage or dispensing' both places it appears.

"(2) RESIDENTIAL HYDROGEN FUEL CELL MOTOR VEHICLE REFUELING PROPERTY.—The term 'residential hydrogen fuel cell motor vehicle refueling property' means qualified hydrogen fuel cell motor vehicle refueling property which is installed on property which is used as the principal residence (within the meaning of section 121) of the taxpayer.

''(3) RETAIL HYDROGEN FUEL CELL MOTOR VEHICLE REFUELING PROPERTY.—The term 'retail hydrogen fuel cell motor vehicle refueling property' means qualified hydrogen fuel cell motor vehicle refueling property which is installed on property (other than property described in paragraph (2)) used in a trade or business of the taxpayer.

''(e) APPLICATION WITH OTHER CREDITS.—The credit allowed under subsection (a) for any taxable year shall not exceed the excess (if any) of—

''(1) the regular tax for the taxable year reduced by the sum of the credits allowable under subpart A and sections 27, 29, 30, and 30B, over

''(2) the tentative minimum tax for the taxable year.

''(f) BASIS REDUCTION.—For purposes of this title, the basis of any property shall be reduced by the portion of the cost of such property taken into account under subsection (a).

''(g) NO DOUBLE BENEFIT.—No deduction shall be allowed under section 179A with respect to any property with respect to which a credit is allowed under subsection (a).

''(h) REFUELING PROPERTY INSTALLED FOR TAX-EXEMPT ENTITIES.—In the case of qualified hydrogen

fuel cell motor vehicle refueling property installed on property owned or used by an entity exempt from tax under this chapter, the person which installs such refueling property for the entity shall be treated as the taxpayer with respect to the refueling property for purposes of this section (and such refueling property shall be treated as retail hydrogen fuel cell motor vehicle refueling property) and the credit shall be allowed to such person, but only if the person clearly discloses to the entity in any installation contract the specific amount of the credit allowable under this section.

''(i) CARRYFORWARD ALLOWED.—

''(1) IN GENERAL.—If the credit amount allowable under subsection (a) for a taxable year exceeds the amount of the limitation under subsection (e) for such taxable year (referred to as the 'unused credit year' in this subsection), such excess shall be allowed as a credit carryforward for each of the 20 taxable years following the unused credit year.

''(2) RULES.—Rules similar to the rules of section 39 shall apply with respect to the credit carryforward under paragraph (1).

''(j) SPECIAL RULES.—Rules similar to the rules of paragraphs (4) and (5) of section 179A(e) shall apply.

''(k) REGULATIONS.—The Secretary shall prescribe such regulations as necessary to carry out the provisions of this section.''.

(b) INCENTIVE FOR PRODUCTION OF HYDROGEN AT QUALIFIED CLEAN-FUEL VEHICLE REFUELING PROPERTY.—Section 179A(d) of the Internal Revenue Code of 1986 (defining qualified clean-fuel vehicle refueling property) is amended by adding at the end the following new flush sentence:

''In the case of clean-burning fuel which is hydrogen produced from another clean-burning fuel, paragraph (3)(A) shall be applied by substituting 'production, storage, or dispensing' for 'storage or dispensing' both places it appears.''.

(c) MODIFICATIONS TO EXTENSION OF DEDUCTION FOR HYDROGEN REFUELING PROPERTY.—

(1) IN GENERAL.—Section 179A(f) of the Internal Revenue Code of 1986 (relating to termination) is amended by inserting ''(other than property relating to hydrogen)'' after ''property''.

(2) NONAPPLICATION OF PHASEOUT.—Section 179A(b)(1)(B) of such Code (relating to phaseout) is amended by inserting ''(other than property relating to hydrogen)'' after ''property''.

(d) CONFORMING AMENDMENTS.—

(1) Section 1016(a) of the Internal Revenue Code of 1986, as amended by this Act, is amended by striking ''and'' at the end of paragraph (28), by striking the period at the end of paragraph (29) and inserting '', and'', and by adding at the end the following new paragraph:

''(30) to the extent provided in section 30C(f).''.

(2) Section 55(c)(2) of such Code, as amended by this Act, is amended by inserting ''30C(e),'' after ''30B(e)''.

(3) The table of sections for subpart B of part IV of subchapter A of chapter 1 of such Code, as amended by this Act, is amended by inserting after the item relating to section 30B the following new item:

''Sec. 30C. Hydrogen fuel cell motor vehicle refueling property credit.''.

(e) EFFECTIVE DATE.—The amendments made by this section shall apply to property placed in service after the date of the enactment of this Act, in taxable years ending after such date.

SEC. 503. CREDIT FOR RESIDENTIAL FUEL CELL PROPERTY.

(a) IN GENERAL.—Subpart A of part IV of subchapter A of chapter 1 of the Internal Revenue Code of 1986 (relating to nonrefundable personal credits) is

amended by inserting after section 25B the following new section:

"SEC. 25C. RESIDENTIAL FUEL CELL PROPERTY.

"(a) ALLOWANCE OF CREDIT.—In the case of an individual, there shall be allowed as a credit against the tax imposed by this chapter for the taxable year an amount equal to 30 percent of the qualified fuel cell property expenditures made by the taxpayer during such year.

"(b) LIMITATIONS.—

"(1) MAXIMUM CREDIT.—The credit allowed under subsection (a) shall not exceed $1,000 for each kilowatt of capacity.

"(2) SAFETY CERTIFICATIONS.—No credit shall be allowed under this section for an item of property unless such property meets appropriate fire and electric code requirements.

"(c) CARRYFORWARD OF UNUSED CREDIT.—If the credit allowable under subsection (a) exceeds the limitation imposed by section 26(a) for such taxable year reduced by the sum of the credits allowable under this subpart (other than this section), such excess shall be carried to the succeeding taxable year and added to the credit allowable under subsection (a) for such succeeding taxable year.

"(d) DEFINITIONS.—For purposes of this section—

''(1) QUALIFIED FUEL CELL PROPERTY EXPENDITURE.—The term 'qualified fuel cell property expenditure' means an expenditure for qualified fuel cell property (as defined in section 48(a)(4)) installed on or in connection with a dwelling unit located in the United States and used as a residence by the taxpayer, including all necessary installation fees and charges.

''(2) LABOR COSTS.—Expenditures for labor costs properly allocable to the onsite preparation, assembly, or original installation of such property and for piping or wiring to interconnect such property to the dwelling unit shall be taken into account for purposes of this section.

''(e) SPECIAL RULES.—For purposes of this section—

''(1) DOLLAR AMOUNTS IN CASE OF JOINT OCCUPANCY.—In the case of any dwelling unit which is jointly occupied and used during any calendar year as a residence by 2 or more individuals the following shall apply:

''(A) The amount of the credit allowable, under subsection (a) by reason of expenditures (as the case may be) made during such calendar year by any of such individuals with re-

spect to such dwelling unit shall be determined by treating all of such individuals as 1 taxpayer whose taxable year is such calendar year.

''(B) There shall be allowable, with respect to such expenditures to each of such individuals, a credit under subsection (a) for the taxable year in which such calendar year ends in an amount which bears the same ratio to the amount determined under subparagraph (A) as the amount of such expenditures made by such individual during such calendar year bears to the aggregate of such expenditures made by all of such individuals during such calendar year.

''(2) TENANT-STOCKHOLDER IN COOPERATIVE HOUSING CORPORATION.—In the case of an individual who is a tenant-stockholder (as defined in section 216) in a cooperative housing corporation (as defined in such section), such individual shall be treated as having made his tenant-stockholder's proportionate share (as defined in section 216(b)(3)) of any expenditures of such corporation.

''(3) CONDOMINIUMS.—

''(A) IN GENERAL.—In the case of an individual who is a member of a condominium management association with respect to a condo-

minium which the individual owns, such individual shall be treated as having made the individual's proportionate share of any expenditures of such association.

''(B) CONDOMINIUM MANAGEMENT ASSOCIATION.—For purposes of this paragraph, the term 'condominium management association' means an organization which meets the requirements of paragraph (1) of section 528(c) (other than subparagraph (E) thereof) with respect to a condominium project substantially all of the units of which are used as residences.

''(4) ALLOCATION IN CERTAIN CASES.—If less than 80 percent of the use of an item is for nonbusiness purposes, only that portion of the expenditures for such item which is properly allocable to use for nonbusiness purposes shall be taken into account.

''(5) WHEN EXPENDITURE MADE; AMOUNT OF EXPENDITURE.—

''(A) IN GENERAL.—Except as provided in subparagraph (B), an expenditure with respect to an item shall be treated as made when the original installation of the item is completed.

''(B) EXPENDITURES PART OF BUILDING CONSTRUCTION.—In the case of an expenditure

in connection with the construction or reconstruction of a structure, such expenditure shall be treated as made when the original use of the constructed or reconstructed structure by the taxpayer begins.

''(C) AMOUNT.—The amount of any expenditure shall be the cost thereof.

''(6) PROPERTY FINANCED BY SUBSIDIZED ENERGY FINANCING.—For purposes of determining the amount of expenditures made by any individual with respect to any dwelling unit, there shall not be taken in to account expenditures which are made from subsidized energy financing (as defined in section 48(a)(5)(C)).

''(f) BASIS ADJUSTMENTS.—For purposes of this subtitle, if a credit is allowed under this section for any expenditure with respect to any property, the increase in the basis of such property which would (but for this subsection) result from such expenditure shall be reduced by the amount of the credit so allowed.''.

(b) CREDIT ALLOWED AGAINST REGULAR TAX AND ALTERNATIVE MINIMUM TAX.—

(1) IN GENERAL.—Section 25C(b) of the Internal Revenue Code of 1986, as added by subsection

(a), is amended by adding at the end the following new paragraph:

''(3) LIMITATION BASED ON AMOUNT OF TAX.—The credit allowed under subsection (a) for the taxable year shall not exceed the excess of—

''(A) the sum of the regular tax liability (as defined in section 26(b)) plus the tax imposed by section 55, over

''(B) the sum of the credits allowable under this subpart (other than this section) and section 27 for the taxable year.''.

(2) CONFORMING AMENDMENTS.—

(A) Section 25C(c) of such Code, as added by subsection (a), is amended by striking ''section 26(a) for such taxable year reduced by the sum of the credits allowable under this subpart (other than this section)'' and inserting ''subsection (b)(3)''.

(B) Section 23(b)(4)(B) of such Code is amended by inserting ''and section 25C'' after ''this section''.

(C) Section 24(b)(3)(B) of such Code is amended by striking ''23 and 25B'' and inserting ''23, 25B, and 25C''.

(D) Section 25(e)(1)(C) of such Code is amended by inserting ''25C,'' after ''25B,''.

(E) Section 25B(g)(2) of such Code is amended by striking ''section 23'' and inserting ''sections 23 and 25C''.

(F) Section 26(a)(1) of such Code is amended by striking ''and 25B'' and inserting ''25B, and 25C''.

(G) Section 904(h) of such Code is amended by striking ''and 25B'' and inserting ''25B, and 25C''.

(H) Section 1400C(d) of such Code is amended by striking ''and 25B'' and inserting ''25B, and 25C''.

(c) ADDITIONAL CONFORMING AMENDMENTS.—

(1) Section 23(c) of the Internal Revenue Code of 1986, as in effect for taxable years beginning before January 1, 2004, is amended by striking ''section 1400C'' and inserting ''sections 25C and 1400C''.

(2) Section 25(e)(1)(C) of such Code, as in effect for taxable years beginning before January 1, 2004, is amended by inserting '', 25C,'' after ''sections 23''.

(3) Subsection (a) of section 1016 of such Code, as amended by this Act, is amended by striking ''and'' at the end of paragraph (29), by striking the period at the end of paragraph (30) and inserting '', and'', and by adding at the end the following new paragraph:

''(31) to the extent provided in section 25C(f), in the case of amounts with respect to which a credit has been allowed under section 25C.''.

(4) Section 1400C(d) of such Code, as in effect for taxable years beginning before January 1, 2004, is amended by inserting ''and section 25C'' after ''this section''.

(5) The table of sections for subpart A of part IV of subchapter A of chapter 1 of such Code is amended by inserting after the item relating to section 25B the following new item:

''Sec. 25C. Residential fuel cell property.''.

(d) EFFECTIVE DATES.—

(1) IN GENERAL.—Except as provided by paragraph (2), the amendments made by this section shall apply to expenditures after the date of the enactment of this Act, in taxable years ending after such date.

(2) SUBSECTION (b).—The amendments made by subsection (b) shall apply to taxable years beginning after December 31, 2003.

SEC. 504. CREDIT FOR BUSINESS INSTALLATION OF QUALIFIED FUEL CELLS.

(a) IN GENERAL.—Subparagraph (A) of section 48(a)(3) of the Internal Revenue Code of 1986 (defining energy property) is amended by striking ''or'' at the end of clause (i), by adding ''or'' at the end of clause (ii), and by inserting after clause (ii) the following new clause:

''(iii) qualified fuel cell property,''.

(b) QUALIFIED FUEL CELL PROPERTY.—Subsection (a) of section 48 is amended by redesignating paragraphs (4) and (5) as paragraphs (5) and (6), respectively, and by inserting after paragraph (3) the following new paragraph:

''(4) QUALIFIED FUEL CELL PROPERTY.—For purposes of this subsection—

''(A) IN GENERAL.—The term 'qualified fuel cell property' means a fuel cell power plant that—

''(i) generates electricity using an electrochemical process, and

''(ii) has an electricity-only generation efficiency greater than 30 percent at rated power.

''(B) LIMITATION.—In the case of qualified fuel cell property placed in service during the taxable year, the credit determined under paragraph (1) for such year with respect to such property shall not exceed an amount equal to the lesser of—

''(i) 30 percent of the basis of such property, including all necessary installation fees and charges, or

''(ii) $1,000 for each kilowatt of capacity of such property.

''(C) SPECIAL RULES.—For purposes of subparagraph (A)(ii)—

''(i) ELECTRICITY-ONLY GENERATION EFFICIENCY.—The electricity-only generation efficiency percentage of a fuel cell power plant is the fraction—

''(I) the numerator of which is the total useful electrical power produced by such plant at normal operating rates, and expected to be consumed in its normal application, and

''(II) the denominator of which is the lower heating value of the fuel source for such plant.

''(ii) DETERMINATIONS MADE ON BTU BASIS.—The electricity-only generation efficiency percentage shall be determined on a Btu basis.

''(D) FUEL CELL POWER PLANT.—The term 'fuel cell power plant' means an integrated system comprised of a fuel cell stack assembly and associated balance of plant components that converts a fuel into electricity using electrochemical means.''.

(c) LIMITATION.—Section 48(a)(2)(A) of the Internal Revenue Code of 1986 (relating to energy percentage) is amended to read as follows:

''(A) IN GENERAL.—The energy percentage is—

''(i) in the case of qualified fuel cell property, 30 percent, and

''(ii) in the case of any other energy property, 10 percent.''.

(d) CONFORMING AMENDMENT.—Section 29(b)(3)(A)(i)(III) of the Internal Revenue Code of 1986

is amended by striking ''section 48(a)(4)(C)'' and inserting ''section 48(a)(5)(C)''.

(e) EFFECTIVE DATE.—The amendments made by this subsection shall apply to property placed in service after the date of the enactment of this Act, under rules similar to the rules of section 48(m) of the Internal Revenue Code of 1986 (as in effect on the day before the date of the enactment of the Revenue Reconciliation Act of 1990).

TITLE VI—EDUCATION AND OUTREACH

SEC. 601. EDUCATION AND OUTREACH.

(a) REQUIREMENTS.—The Secretary shall work with other Federal, State, and local agencies, and academic institutions and organizations to develop a public outreach and awareness program.

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out this title $7,000,000 for fiscal year 2004 and each fiscal year thereafter through fiscal year 2013.

TITLE VII—TARGETS AND TIMETABLES

SEC. 701. DEPARTMENT OF ENERGY STRATEGY.

(a) CRITICAL TECHNOLOGY PLAN.—Not later than 1 year after the date of enactment of this Act, the Sec-

retary shall publish and transmit to Congress a plan identifying critical technologies, enabling strategies and applications, technical targets, and associated timeframes that support the commercialization of hydrogen-fueled fuel cell vehicles.

(b) CONTENTS.—The plan shall describe the activities of the Department of Energy, including a research, development, demonstration, and commercial application program for developing technologies to support—

(1) the production and deployment of 100,000 hydrogen-fueled fuel cell vehicles in the United States by 2010 and 2,500,000 of such vehicles by 2020 and annually thereafter; and

(2) the integration of hydrogen activities, with associated technical targets and timetables for the development of technologies to provide for the sale of hydrogen at fueling stations in the United States by 2010 and 2020, respectively.

(c) PROGRESS REVIEW.—The Secretary shall include in each annual budget submission a review of the progress toward meeting the numerical targets in subsection (b).

○