

**CHAIRMAN’S MARK**  
**APRIL 7, 2003**

**TITLE VIII—HYDROGEN**

**Subtitle A—Basic Research Programs**

**SEC. 801. SHORT TITLE.**

This subtitle may be cited as the “George E. Brown, Jr. and Robert S. Walker Hydrogen Future Act of 2003”.

**SEC. 802. MATSUNAGA ACT AMENDMENT.**

The Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 (42 U.S.C. 12401 et seq.) is amended by striking sections 102 through 109 and inserting the following:

**“SEC. 102. DEFINITIONS.**

In this Act —

“(a) the term ‘advisory committee’ means the Hydrogen and Fuel Cell Technical Advisory Committee established under section 107.

“(b) the term ‘Department’ means the Department of Energy.

“(c) the term ‘fuel cell’ means a device that directly converts the chemical energy of a fuel into electricity by an electrochemical process.

“(d) the term ‘infrastructure’ means the equipment, systems, or facilities used to produce, distribute, deliver, or store hydrogen.

“(e) the term ‘Secretary’ means the Secretary of Energy.

**“SEC. 103. HYDROGEN RESEARCH AND DEVELOPMENT.**

(a) **IN GENERAL.**— The Secretary shall conduct a research and development program on technologies related to the production, distribution, storage, and use of hydrogen energy, fuel cells, and related infrastructure.

(b) **GOAL.**— The goal of such program shall be to enable the safe, economic, and environmentally sound use of hydrogen energy, fuel cells, and related infrastructure for

1 transportation, commercial, industrial, residential, and electric power generation applications.

2 (c) FOCUS.— In carrying out activities under this section, the Secretary shall focus on  
3 critical technical issues including, but not limited to —

4 “(1) the production of hydrogen from diverse energy sources, with emphasis on  
5 cost-effective production from renewable energy sources;

6 “(2) the delivery of hydrogen, including safe delivery in fueling stations;

7 “(3) the storage of hydrogen, including storage of hydrogen in surface  
8 transportation;

9 “(4) fuel cell technologies for transportation, stationary and portable  
10 applications, with emphasis on cost-reduction of fuel cell stacks; and

11 “(5) the use of hydrogen energy and fuel cells, including use in—

12 “(A) isolated villages, islands, and areas in which other energy sources  
13 are not available or are very expensive; and

14 “(B) foreign markets, particularly where an energy infrastructure is not  
15 well developed.

16 “(d) CODES AND STANDARDS.— The Secretary shall facilitate the development of  
17 domestic and international codes and standards and seek to resolve other critical regulatory and  
18 technical barriers preventing the introduction of hydrogen energy and fuel cells into the  
19 marketplace.

20 “(e) SOLICITATION.— The Secretary shall carry out the research and development  
21 activities authorized under this section through solicitation of proposals, and evaluation using  
22 competitive merit review.

23 “(f) COST SHARING.— The Secretary shall require a commitment from non-Federal  
24 sources of at least 20 percent of the cost of proposed research and development projects. The  
25 Secretary may reduce or eliminate the cost sharing requirement —

26 “(1) if the Secretary determines that the research and development is of a basic  
27 or fundamental nature, or

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

3                   **“SEC. 104. DEMONSTRATION PROGRAMS.**

4                   “(a) REQUIREMENT.— In conjunction with activities conducted under section 103, the  
5                   Secretary shall conduct demonstrations of hydrogen energy and fuel cell technologies in order  
6                   to evaluate the commercial potential of such technologies.

7                   “(b) SOLICITATION.— The Secretary shall carry out the demonstrations authorized  
8                   under this section through solicitation of proposals, and evaluation using competitive merit  
9                   review.

10                  “(c) COST SHARING.— The Secretary shall require a commitment from non-Federal  
11                  sources of at least 50 percent of the costs directly relating to a demonstration project under this  
12                  section. The Secretary may reduce such non-Federal requirement if the Secretary determines  
13                  that the reduction is appropriate considering the technological risks involved in the project.

14                  **“SEC. 105. TECHNOLOGY TRANSFER.**

15                  “The Secretary shall conduct programs to —

16                  “(a) transfer critical hydrogen energy and fuel cell technologies to the private sector in  
17                  order to promote wider understanding of such technologies and wider use of research progress  
18                  under this Act;

19                  “(b) to accelerate wider application of hydrogen energy and fuel cell technologies in  
20                  foreign countries in order to increase the global market for the technologies and foster global  
21                  development without harmful environmental effects;

22                  “(c) foster the exchange of generic, nonproprietary information and technology  
23                  developed pursuant to this Act, among industry, academia, and the Federal agencies; and

24                  “(d) inventory and assess the technical and commercial viability of technologies related  
25                  to production, distribution, storage, and use of hydrogen energy and fuel cells.

26                  **“SEC. 106. COORDINATION AND CONSULTATION.**

27                  “The Secretary shall have overall management responsibility for carrying out programs  
28                  under this Act. In carrying out such programs, the Secretary—

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

3                   “(b) in carrying out the Secretary’s authorities pursuant to this Act, shall consult  
4 with other Federal agencies as appropriate, and may obtain the assistance of any  
5 Federal agency, on a reimbursable basis or otherwise and with the consent of such  
6 agency;

7                   “(c) shall attempt to ensure that activities under this Act do not unnecessarily  
8 duplicate any available research and development results or displace or compete with  
9 privately funded hydrogen and fuel cell energy activities.

10                   **“SEC. 107. ADVISORY COMMITTEE.**

11                   “(a) ESTABLISHMENT.— There is hereby established the Hydrogen and Fuel Cell  
12 Technical Advisory Committee, to advise the Secretary on the programs under this Act.

13                   “(b) MEMBERSHIP.— The advisory committee shall be comprised of not fewer than 12  
14 nor more than 25 members appointed by the Secretary based on their technical and other  
15 qualifications from domestic industry, automakers, universities, professional societies, Federal  
16 laboratories, financial institutions, and environmental and other organizations as the Secretary  
17 deems appropriate. The advisory committee shall have a chairperson, who shall be elected by  
18 the members from among their number.

19                   “(c) TERMS.— Members of the advisory committee shall be appointed for terms of 3  
20 years, with each term to begin not later than 3 months after the date of enactment of [*short*  
21 *title*], except that one-third of the members first appointed shall serve for 1 year, and one-third  
22 of the members first appointed shall serve for 2 years, as designated by the Secretary at the  
23 time of appointment.

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

26                   “(1) implementation and conduct of programs under this Act;

27                   “(2) economic, technological, and environmental consequences of the

1 deployment of technologies related to production, distribution, storage, and use of  
2 hydrogen energy, and fuel cells;

3 “(3) means for resolving barriers to implementing hydrogen and fuel cell  
4 technologies; and

5 “(4) the coordination plan and any updates thereto prepared by the Secretary  
6 pursuant to section 108.

7 “(e) RESPONSE.— The Secretary shall consider any recommendations made by the  
8 advisory committee, and shall provide a response to the advisory committee within 30 days  
9 after receipt of such recommendations. Such response shall either describe the implementation  
10 of the advisory committee’s recommendations or provide an explanation of the reasons that any  
11 such recommendations will not be implemented.

12 “(f) SUPPORT.— The Secretary shall provide such staff, funds and other support as  
13 may be necessary to enable the advisory committee to carry out its functions. In carrying out  
14 activities pursuant to this section, the advisory committee may also obtain the assistance of any  
15 Federal agency, on a reimbursable basis or otherwise and with the consent of such agency.

16 **“SEC. 108. COORDINATION PLAN.**

17 “(a) PLAN.—The Secretary, in consultation with other Federal agencies, shall prepare  
18 and maintain on an ongoing basis a comprehensive plan for activities under this Act.

19 “(b) DEVELOPMENT.— In developing such plan, the Secretary shall—

20 “(1) consider the guidance of the National Hydrogen Energy Roadmap  
21 published by the Department in November 2002 and any updates thereto;

22 “(2) consult with the advisory committee;

23 “(3) consult with interested parties from domestic industry, automakers,  
24 universities, professional societies, Federal laboratories, financial institutions, and  
25 environmental and other organizations as the Secretary deems appropriate.

26 “(c) CONTENTS.— At a minimum, the plan shall provide —

27 “(1) an assessment of the effectiveness of the programs authorized under this  
28 Act, including a summary of recommendations of the advisory committee for

1 improvements in such programs;

2 “(2) a description of proposed research, development, and demonstration  
3 activities planned by the Department for the next five years;

4 “(3) a description of the role Federal laboratories, institutions of higher  
5 education, small businesses, and other private sector firms are expected to play in such  
6 programs;

7 “(4) cost and performance milestones that will be used to evaluate the programs  
8 for the next five years; and

9 “(5) any significant technical, regulatory, and other hurdles that stand in the way  
10 of achieving such cost and performance milestones, and how the programs will address  
11 those hurdles; and

12 (6) to the extent practicable, an analysis of Federal, State, local, and private  
13 sector hydrogen research, development, and demonstration activities to identify areas  
14 for increased intergovernmental and private-public sector collaboration.

15 (d) REPORT.— Not later than January 1, 2005, and biennially thereafter, the Secretary  
16 shall transmit to Congress the comprehensive plan developed for the programs authorized  
17 under this Act, or any updates thereto.”

18 **“SEC. 109. AUTHORIZATION OF APPROPRIATIONS.**

19 “There are authorized to be appropriated to carry out the purposes of this Act —

20 “(1) such sums as may be necessary for fiscal years 1992 through 2003;

21 “(2) \$105,000,000 for fiscal year 2004;

22 “(3) \$150,000,000 for fiscal year 2005;

23 “(4) \$175,000,000 for fiscal year 2006;

24 “(5) \$200,000,000 for fiscal year 2007; and

25 “(6) \$225,000,000 for fiscal year 2008.”

26 **SEC. 803. HYDROGEN TRANSPORTATION AND FUEL INITIATIVE.**

27 (a) VEHICLE TECHNOLOGIES.— The Secretary shall carry out a research, development,  
28 demonstration, and commercial application program on advanced hydrogen-powered vehicle

1 technologies. Such program shall address—

- 2 (1) engine and emission control systems;
- 3 (2) energy storage, electric propulsion, and hybrid systems;
- 4 (3) automotive materials;
- 5 (4) hydrogen-carrier fuels; and
- 6 (5) other advanced vehicle technologies.

7 (b) HYDROGEN FUEL INITIATIVE.— In coordination with the program authorized in subsection  
8 (a), the Secretary of Energy, in partnership with the private sector, shall conduct a research,  
9 development, demonstration and commercial application program designed to enable the rapid and  
10 coordinated introduction of hydrogen-fueled vehicles and associated infrastructure into commerce.  
11 Such program shall address—

- 12 (1) production of hydrogen from diverse energy resources, including—
  - 13 (A) renewable energy resources;
  - 14 (B) fossil fuels, in conjunction with carbon capture and sequestration;
  - 15 (C) hydrogen-carrier fuels; and
  - 16 (D) nuclear energy;
- 17 (2) delivery of hydrogen or hydrogen-carrier fuels, including—
  - 18 (A) transmission by pipeline and other distribution methods; and
  - 19 (B) safe, convenient, and economic refueling of vehicles, either at central  
20 refueling stations or through distributed on-site generation;
- 21 (3) storage of hydrogen or hydrogen-carrier fuels, including development of materials  
22 for safe and economic storage in gaseous, liquid or solid forms at refueling facilities or onboard  
23 vehicles; and
- 24 (4) development of advanced vehicle technologies, such as efficient fuel cells and direct  
25 hydrogen combustion engines, and related component technologies such as advanced materials  
26 and control systems; and
- 27 (5) development of necessary codes, standards, and safety practices to accompany the

1 production, distribution, storage and use of hydrogen or hydrogen-carrier fuels in  
2 transportation.

3 (c) MATSUNAGA ACT. — In carrying out programs and projects under subsections (a) and  
4 (b), the Secretary shall ensure that such programs and projects are consistent with, and do not  
5 unnecessarily duplicate, activities carried out under the programs authorized under the Spark M.  
6 Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 (42 U.S.C. 12401 et  
7 seq.).

8 (d) ADVISORY COMMITTEE.—The Hydrogen and Fuel Cell Technical Advisory Committee  
9 authorized under section 107 of the Spark M. Matsunaga Hydrogen Research, Development, and  
10 Demonstration Act of 1990 (42 U.S.C. 12408), as amended in this title, shall also advise the Secretary  
11 on the programs and activities carried out under this section.

12 (e) SOLICITATION.— The Secretary shall carry out the programs authorized under this section  
13 through solicitation of proposals, and evaluation using competitive merit review.

14 (f) COST SHARING.— The Secretary shall require a commitment from non-Federal sources of  
15 at least 50 percent of the costs directly relating to a demonstration project under this section. The  
16 Secretary may reduce such non-Federal requirement if the Secretary determines that the reduction is  
17 appropriate considering the technological risks involved in the project.

18 (g) AUTHORIZATION OF APPROPRIATIONS.—For the purposes of this section, there are  
19 authorized to be appropriated to the Secretary—

20 (1) for activities pursuant to subsection (a), to remain available until expended, —

21 (A) \$100,000,000 for each of fiscal years 2004 and 2005;

22 (B) \$110,000,000 for each of fiscal years 2006 and 2007; and

23 (C) \$120,000,000 for fiscal year 2008; and

24 (2) for activities pursuant to subsection (b), to remain available until expended —

25 (A) \$125,000,000 for fiscal year 2004;

26 (B) \$150,000,000 for fiscal year 2005;

27 (C) \$175,000,000 for fiscal year 2006;

1 (D) \$200,000,000 for each of fiscal years 2007 and 2008.

2 **SEC. 804. INTERAGENCY TASK FORCE AND COORDINATION PLAN.**

3 (a) ESTABLISHMENT.— Not later than 120 days after the date of enactment of this Act, the  
4 Secretary shall establish an interagency task force to coordinate Federal hydrogen and fuel cell energy  
5 activities.

6 (b) COMPOSITION.— The task force shall be chaired by a designee of the Secretary, and shall  
7 include representatives of —

8 (1) the Office of Science and Technology Policy;

9 (2) the Department of Transportation;

10 (3) the Department of Defense;

11 (4) the Department of Commerce (including the National Institute for Standards and  
12 Technology);

13 (5) the Environmental Protection Agency

14 (6) the National Aeronautics and Space Administration;

15 (7) the Department of State; and

16 (8) other Federal agencies as the Director considers appropriate.

17 (c) COORDINATION PLAN.— The task force shall prepare a comprehensive coordination plan  
18 for Federal hydrogen and fuel cell energy activities, which shall include a summary of such activities.

19 (d) REPORT.— Not later than one year after it is established, the task force shall report to  
20 Congress on the coordination plan in subsection (c) and on the interagency coordination of Federal  
21 hydrogen and fuel cell energy activities.

22 **SEC. 805. REVIEW BY THE NATIONAL ACADEMIES.**

23 Not later than two years after the date of enactment of this Act, and every four years thereafter,  
24 the Secretary shall enter into a contract with the National Academies. Such contract shall require the  
25 National Academies to perform a review of the progress made through Federal hydrogen and fuel cell  
26 energy programs and activities, including the need for modified or additional programs, and to report to  
27 the Congress on the results of such review. There are authorized to be appropriated to the Secretary  
28 such sums as may be necessary to carry out the requirements of this section.

## Subtitle B — Demonstration Programs

### SEC. 811. DEFINITIONS.

For the purposes of this subtitle and subtitle C —

(a) the term “fuel cell” means a device that directly converts the chemical energy of a fuel into electricity by an electrochemical process.

(b) the term “hydrogen-carrier fuel” means any hydrocarbon fuel that is capable of being thermochemically processed or otherwise reformed to produce hydrogen;

(b) the term “infrastructure” means the equipment, systems, or facilities used to produce, distribute, deliver, or store hydrogen or hydrogen-carrier fuels.

(c) the term “institution of higher education” has the meaning given that term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(b) the term “Secretary” means the Secretary of Energy;

### SEC. 812. HYDROGEN VEHICLE DEMONSTRATION PROGRAM.

(a) IN GENERAL.— The Secretary shall establish a program for demonstration and commercial application of hydrogen-powered vehicles and associated hydrogen fueling infrastructure in a variety of transportation-related applications, including —

(1) fuel cell vehicles in light-duty vehicle fleets;

(2) heavy-duty fuel cell on-road and off-road vehicles, including mass transit buses; and

(3) use of hydrogen-powered vehicles and hydrogen fueling infrastructure (including multiple hydrogen refueling stations) along major transportation routes or in entire regions; and

(4) other similar projects as the Secretary may deem necessary to contribute to the rapid demonstration and deployment of hydrogen-based technologies in widespread use for transportation.

(b) ELIGIBILITY.— Federal, state, tribal, and local governments, academic and other non-profit organizations, private entities, and consortia of these entities shall be eligible for these projects.

(c) SELECTION.— In selecting projects under this section, the Secretary shall —

(1) consult with Federal, State, local and private fleet managers to identify potential

1 projects where hydrogen-powered vehicles may be placed into service;

2 (2) identify not less than 10 sites at which to carry out projects under this program, 2 of  
3 which must be based at Federal facilities;

4 (3) select projects based on the following factors—

5 (A) geographic diversity;

6 (B) a diverse set of operating environments, duty cycles, and likely weather  
7 conditions;

8 (C) the interest and capability of the participating agencies, entities, or fleets;

9 (D) the availability and appropriateness of potential sites for refueling  
10 infrastructure and for maintenance of the vehicle fleet;

11 (E) the existence of traffic congestion in the area expected to be served by the  
12 hydrogen-powered vehicles;

13 (F) proximity to non-attainment areas as defined in section 171 of the Clean Air  
14 Act (42 U.S.C. 7501); and

15 (G) such other criteria as the Secretary determines to be appropriate in order to  
16 carry out the purposes of the program.

17 (d) INFRASTRUCTURE.— In funding projects under this section, the Secretary shall also support  
18 the installation of refueling infrastructure at sites necessary for success of the project, giving preference  
19 to those infrastructure projects that include co-production of both—

20 (1) hydrogen for use in transportation; and

21 (2) electricity that can be consumed on site.

22 (e) OPERATION AND MAINTENANCE PERIOD.— Vehicles purchased for projects under this  
23 section shall be operated and maintained by the participating agencies or entities in regular duty cycles  
24 for a period of not less than 12 months.

25 (f) TRAINING AND TECHNICAL SUPPORT.— In funding proposals under this section, the  
26 Secretary shall also provide funding for training and technical support as may be necessary to assure the  
27 success of such projects, including training and technical support in —

- 1 (1) the installation, operation, and maintenance of fueling infrastructure;
- 2 (2) the operation and maintenance of fuel cell vehicles; and
- 3 (3) data collection necessary to monitor project performance.

4 (g) COST-SHARING.— Except as otherwise provided, the Secretary shall require a commitment  
5 from non-Federal sources of at least 50 percent of the costs directly relating to a demonstration project  
6 under this section. The Secretary may reduce such non-Federal requirement if the Secretary determines  
7 that the reduction is appropriate considering the technological risks involved in the project.

8 (h) AUTHORIZATION OF APPROPRIATIONS.— For the purposes of this section, there are  
9 authorized to be appropriated to the Secretary \$50,000,000 for each of fiscal years 2006 through  
10 2010, to remain available until expended.

11 **SEC. 813. STATIONARY FUEL CELL DEMONSTRATION PROGRAM.**

12 (a) IN GENERAL.— The Secretary shall establish a program for demonstration and commercial  
13 application of hydrogen fuel cells in stationary applications, including —

- 14 (1) fuel cells for use in residential and commercial buildings;
- 15 (2) portable fuel cells, including auxiliary power units in trucks;
- 16 (3) small form and micro fuel cells of 20 watts or less;
- 17 (4) distributed generation systems with fuel cells using renewable energy; and
- 18 (5) other similar projects as the Secretary may deem necessary to contribute to the  
19 rapid demonstration and deployment of hydrogen-based technologies in widespread use.

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

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

- 25 (1) are submitted jointly from consortia that include two or more participants from  
26 institutions of higher education, industry, State, tribal, or local governments, and Federal  
27 laboratories; and
- 28 (2) that reflect proven experience and capability with technologies relevant to the

1 projects proposed.

2 (d) TRAINING AND TECHNICAL SUPPORT.— In funding proposals under this section, the  
3 Secretary shall also provide funding for training and technical support as may be necessary to assure the  
4 success of such projects, including training and technical support in the installation, operation, and  
5 maintenance of fuel cells and the collection of data to monitor project performance.

6 (e) COST-SHARING.— Except as otherwise provided, the Secretary shall require a commitment  
7 from non-Federal sources of at least 50 percent of the costs directly relating to a demonstration project  
8 under this section. The Secretary may reduce such non-Federal requirement if the Secretary determines  
9 that the reduction is appropriate considering the technological risks involved in the project.

10 (f) AUTHORIZATION OF APPROPRIATIONS.— For the purposes of this section, there are  
11 authorized to be appropriated to the Secretary \$50,000,000 for each of fiscal years 2006 through  
12 2010, to remain available until expended.

13 **SEC. 814. HYDROGEN DEMONSTRATION PROGRAMS IN NATIONAL PARKS.**

14 (a) STUDY.— Not later than 1 year after the date of enactment of this section, the Secretary of  
15 the Interior and the Secretary of Energy shall jointly study and report to Congress on —

16 (1) the energy needs and uses at National Parks; and

17 (2) the potential for fuel cell and other hydrogen-based technologies to meet such  
18 energy needs in —

19 (A) stationary applications, including power generation, combined heat and  
20 power for buildings and campsites, and standby and backup power systems; and

21 (B) transportation-related applications, including support vehicles, passenger  
22 vehicles and heavy-duty trucks and buses.

23 (b) PILOT PROJECTS.— Based on the results of the study conducted under subsection (a), the  
24 Secretary of the Interior shall fund not fewer than 3 pilot projects in national parks to provide for  
25 demonstration of fuel cells or other hydrogen-based technologies in those applications where the  
26 greatest potential for such use in National Parks has been identified. Such pilot projects shall be  
27 geographically distributed throughout the United States.

28 (c) DEFINITION.— For the purpose of this section, the term “National Parks” means those

1 areas of land and water now or hereafter administered by the Secretary of the Interior through the  
2 National Park Service for park, monument, historic, parkway, recreational, or other purposes.

3 (d) AUTHORIZATION OF APPROPRIATIONS. — There are authorized to be appropriated to the  
4 Secretary of the Interior \$1,000,000 for fiscal year 2004, and \$15,000,000 for fiscal year 2005, to  
5 remain available until expended.

6 **SEC. 815. INTERNATIONAL DEMONSTRATION PROGRAM.**

7 (a) IN GENERAL.— The Secretary, in consultation with the Administrator of the U.S. Agency  
8 for International Development, shall conduct demonstrations of fuel cells and associated hydrogen  
9 fueling infrastructure in countries other than the United States, particularly in areas where an energy  
10 infrastructure is not already well developed.

11 (b) ELIGIBLE TECHNOLOGIES.— The program may demonstrate—

- 12 (1) fuel cell vehicles in light-duty vehicle fleets;  
13 (2) heavy-duty fuel cell on-road and off-road vehicles;  
14 (3) stationary fuel cells in residential and commercial buildings; or  
15 (4) portable fuel cells, including auxiliary power units in trucks.

16 (c) PARTICIPANTS.—

17 (1) ELIGIBILITY.— Foreign nations, non-profit organizations, and private companies  
18 shall be eligible for these pilot projects.

19 (2) COOPERATION.— Eligible entities may perform the projects in cooperation with  
20 United States non-profit organizations and private companies.

21 (3) COST-SHARING.— The Secretary may require a commitment from participating  
22 private companies and from participating foreign countries.

23 (d) AUTHORIZATION OF APPROPRIATIONS.— For activities conducted under this section, there  
24 are authorized to be appropriated to the Secretary \$25,000,000 for each of fiscal years 2006 through  
25 2010, to remain available until expended.

26 **SEC. 816. TRIBAL STATIONARY HYBRID POWER DEMONSTRATION.**

27 (a) IN GENERAL.— Not later than 1 year after the date of enactment of this Act, the Secretary,  
28 in cooperation with Indian tribes, shall develop and transmit to Congress a strategy for a demonstration

1 and commercial application program to develop hybrid distributed power systems on Indian lands that  
2 combine —

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

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

6 (b) DEFINITION.— For the purposes of this section, the terms “Indian tribe” and “Indian land”  
7 have the meaning given such terms under Title XXVI of the Energy Policy Act of 1992 (25 U.S.C.  
8 3501 et seq.), as amended by this Act.

9 (c) AUTHORIZATION OF APPROPRIATIONS.— For activities under this section, there are  
10 authorized to be appropriated to the Secretary of Energy \$1,000,000 for fiscal year 2005, and  
11 \$5,000,000 for each of fiscal years 2006 through 2008.

12 **SEC. 817. DISTRIBUTED GENERATION PILOT PROGRAM.**

13 (a) ESTABLISHMENT.— The Secretary shall support a demonstration program to develop,  
14 deploy, and commercialize distributed generation systems to significantly reduce the cost of producing  
15 hydrogen from renewable energy for use in fuel cells. Such program shall provide the necessary  
16 infrastructure to test these distributed generation technologies at pilot scales in a real-world  
17 environment.

18 (b) AUTHORIZATION OF APPROPRIATIONS.— There are authorized to be appropriated to the  
19 Secretary of Energy, to remain available until expended, for the purposes of carrying out this section:

20 (1) \$10,000,000 for fiscal year 2004;

21 (2) \$15,000,000 for fiscal year 2005; and

22 (3) \$20,000,000 for each of fiscal years 2006 through 2008.

23 **Subtitle C — Federal Programs**

24 **SEC. 821. PUBLIC EDUCATION AND TRAINING.**

25 (a) EDUCATION.— The Secretary shall conduct a public education program designed to  
26 increase public interest in and acceptance of hydrogen energy and fuel cell technologies.

27 (b) TRAINING.— The Secretary shall conduct a program to promote university-based training

1 in critical skills for research in, production of, and use of hydrogen energy and fuel cell technologies.  
2 Such program may include research fellowships at institutions of higher education, centers of excellence  
3 in critical technologies, internships in industry, and such other measures as the Secretary deems  
4 appropriate.

5 (c) AUTHORIZATION OF APPROPRIATIONS.— For activities pursuant to this section, there are  
6 authorized to be appropriated to the Secretary \$7,000,000 for each of fiscal years 2004 through 2008.

7 **SEC. 822. FEDERAL AGENCY STRATEGIC PLANS.**

8 Chapter 3 of title 5, United States Code, is amended by adding after section 306 the following  
9 new section:

10 **“SEC. 307. HYDROGEN TRANSITION STRATEGIC PLANS.**

11 “(a) No later than September 30, 2004, the head of each agency, in consultation with  
12 the Secretary of Energy, shall submit to the Director of the Office of Management and Budget  
13 and to the Congress a hydrogen transition strategic plan. Such plan shall contain—

14 “(1) a comprehensive assessment of how the transition to a hydrogen-based  
15 economy could assist the operation, regulatory program and mission of the agency, and  
16 increase homeland security;

17 “(2) a description of areas within the agency’s control where using hydrogen or  
18 fuel cells could benefit the operation of the agency;

19 “(3) a description of any agency management practices, procurement policies,  
20 regulations, or guidelines that may inhibit the agency’s transition to utilizing fuel cells and  
21 hydrogen as an energy source; and

22 “(4) an description of external factors outside the agency that could significantly  
23 affect the agency’s ability to transition to a hydrogen economy.

24 “(b) Such strategic plan shall cover a period of not less than five years forward from the fiscal  
25 year in which it is submitted, and shall be updated and revised at least every three years.

26 “(c) The hydrogen transition performance plan required by section 1120 of title 31 shall be  
27 consistent with the agency's hydrogen transition strategic plan. A performance plan may not be

1 submitted for a fiscal year not covered by a current strategic plan under this section.

2 “(d) When developing a hydrogen transition strategic plan, the agency shall consult with the  
3 Congress, and shall consider the views of those entities potentially affected by such a plan.

4 “(e) The functions and activities of this section shall be considered to be inherently  
5 Governmental functions. The drafting of strategic plans under this section shall be performed only by  
6 Federal employees.

7 “(f) For purposes of this section the term ‘agency’ means an Executive agency defined under  
8 section 105, but does not include the Central Intelligence Agency, the General Accounting Office, the  
9 Panama Canal Commission, the United States Postal Service, and the Postal Rate Commission.”.

10 **SEC. 823. ANNUAL HYDROGEN TRANSITION PERFORMANCE PLANS AND REPORTS.**

11 (a) PERFORMANCE PLANS AND REPORTS.— Chapter 11 of title 31, United States Code, is  
12 amended by adding after section 1119 the following new sections:

13 **“SEC. 1120. HYDROGEN TRANSITION PLANS.**

14 “(a) In carrying out the provisions of section 1105(a), the Director of the Office of  
15 Management and Budget shall require each agency to prepare an annual hydrogen transition  
16 performance plan. Such plan shall--

17 “(1) establish objective, quantifiable performance goals to define the progress  
18 to be made by the agency in incorporating fuel cells and hydrogen into the regular  
19 operation of the agency;

20 “(2) identify regulatory changes to be made in the coming year to speed the  
21 transition to hydrogen and fuel cells;

22 “(3) identify activities to be undertaken in the coming year to use fuel cells and  
23 hydrogen to further the agency's mission;

24 “(4) provide a basis for comparing actual program results with the established  
25 performance goals; and

26 “(5) describe the means to be used to verify and validate measured values.

27 “(b) The functions and activities of this section shall be considered to be inherently  
28 Governmental functions. The drafting of performance plans under this section shall be

1 performed only by Federal employees.

2 “(c) For purposes of this section and sections 1120 through 1122, and sections 9703  
3 and 9704 the term —

4 “(1) ‘agency’ has the same meaning as such term is defined under section  
5 306(f) of title 5;

6 “(2) ‘outcome measure’ means an assessment of the results of a program  
7 activity compared to its intended purpose;

8 “(3) ‘output measure’ means the tabulation, calculation, or recording of activity  
9 or effort that can be expressed in a quantitative or qualitative manner;

10 “(4) ‘performance goal’ means a target level of performance expressed as a  
11 tangible, measurable objective, against which actual achievement can be compared,  
12 including a goal expressed as a quantitative standard, value, or rate;

13 “(5) ‘performance indicator’ means a particular value or characteristic used to  
14 measure output or outcome;

15 “(6) ‘program activity’ means a specific activity or project as listed in the  
16 program and financing schedules of the annual budget of the United States Government;  
17 and

18 “(7) ‘program evaluation’ means an assessment, through objective  
19 measurement and systematic analysis, of the manner and extent to which Federal  
20 programs achieve intended objectives.

21 “(d) The Director of the Office of Management and Budget shall consult with the  
22 Secretary of Energy in providing technical guidelines to agencies in developing hydrogen  
23 transition performance plans pursuant to this section.”

24 **“SEC. 1121. HYDROGEN TRANSITION PERFORMANCE REPORTS.**

25 “(a) No later than March 31, 2005, and no later than March 31 of each year thereafter,  
26 the head of each agency shall prepare and submit to the President and the Congress, a report  
27 on the agency's transition to a hydrogen economy and incorporation of hydrogen and fuel cells  
28 into the agency's operation during the previous fiscal year.

1 “(b) Each hydrogen performance report shall—

2 “(1) set forth the indicators established in the agency hydrogen transition plan  
3 under section 1120, along with the actual program performance achieved compared  
4 with the performance goals expressed in the plan for that fiscal year; and

5 “(2) if performance goals are specified in an alternative form under section  
6 1115(b), the results of such program shall be described in relation to such  
7 specifications, including whether the performance failed to meet the criteria of a  
8 minimally effective or successful program.

9 “(c) The report shall include actual results for the three preceding fiscal years.

10 “(d) Each report shall —

11 “(1) review the success of achieving the performance goals of the fiscal year;

12 “(2) evaluate the performance plan for the current fiscal year relative to the  
13 performance achieved toward the performance goals in the fiscal year covered by the  
14 report;

15 “(3) explain and describe, where a performance goal has not been met  
16 (including when a program activity's performance is determined not to have met the  
17 criteria of a successful program activity under section 1115(b)(1)(A)(ii) or a  
18 corresponding level of achievement if another alternative form is used)--

19 “(A) why the goal was not met;

20 “(B) those plans and schedules for achieving the established  
21 performance goal; and

22 “(C) if the performance goal is impractical or infeasible, why that is the  
23 case and what action is recommended;

24 “(4) describe the use and assess the effectiveness in achieving performance  
25 goals of any waiver under section 9703 of this title; and

26 “(5) include the summary findings of those program evaluations completed  
27 during the fiscal year covered by the report.

1           “(e) An agency head may include all program performance information required  
2 annually under this section in an annual financial statement required under section 3515 if any  
3 such statement is submitted to the Congress no later than March 31 of the applicable fiscal  
4 year.

5           “(f) The functions and activities of this section shall be considered to be inherently  
6 Governmental functions. The drafting of program performance reports under this section shall  
7 be performed only by Federal employees.

8           “SEC. 1122. EXEMPTION.

9           “The Director of the Office of Management and Budget may exempt from the  
10 requirements of sections 1120 and 1121 of this title and section 306 of title 5, any agency with  
11 annual outlays of \$20,000,000 or less.”.

12           **SEC. 824. MINIMUM FEDERAL FLEET REQUIREMENT.**

13           (a) Section 303(b) of the Energy Policy Act of 1992 (42 U.S.C. 13212(b)) is amended by  
14 adding at the end the following:

15           “(4) HYDROGEN VEHICLES.—

16           “(A) Of the number of vehicles acquired under paragraph (1)(D) by a Federal fleet of  
17 100 or more vehicles, not less than —

18                       (i) 5 percent in fiscal years 2006 and 2007;

19                       (ii) 10 percent in fiscal years 2008 and 2009;

20                       (iii) 15 percent in fiscal years 2010 and 2011; and

21                       (iv) 20 percent in fiscal years 2012 and thereafter,

22 shall be hydrogen-powered vehicles that meet standards for performance, reliability, cost, and  
23 maintenance established by the Secretary.

24           “(B) The Secretary may establish a lesser percentage, or waive the requirement under  
25 subparagraph (A) for any fiscal year entirely, if hydrogen-powered vehicles meeting the  
26 standards set by the Secretary pursuant to subparagraph (A) are not available at a purchase  
27 price that is less than 150 percent of the purchase price of other comparable alternative fueled  
28 vehicles.

1           “(C) The Secretary may, by rule, delay the implementation of the requirements under  
2 subparagraph (A) in the event that the Secretary determines that hydrogen-powered vehicles  
3 are not commercially or economically available, or that fuel for such vehicles is not  
4 commercially or economically available.

5           “(D) The Secretary, in consultation with the Administrator of General Services, may for  
6 reasons of refueling infrastructure use and cost optimization, elect to allocate the acquisitions  
7 necessary to achieve the requirements in subparagraph (A) to certain Federal fleets in lieu of  
8 requiring each Federal fleet to achieve the requirements in subparagraph (A).”.

9           (b) REFUELING.—Section 304 of the Energy Policy Act of 1992 (42 U.S.C. 13213) is  
10 amended—

11           (1) by redesignating subsection (b) as subsection (c);

12           (2) in the second sentence of subsection (a), by striking “If publicly” and inserting the  
13 following:

14           “(b) COMMERCIAL ARRANGEMENTS.—

15           “(1) IN GENERAL.—If publicly”; and

16           (3) in subsection (b) (as designated by paragraph (2)), by adding at the end the  
17 following:

18           “(2) MANDATORY ARRANGEMENTS.—

19           “(A) IN GENERAL.—In a case in which publicly available fueling  
20 facilities are not convenient or accessible to the locations of 2 or more Federal  
21 fleets for which hydrogen-powered vehicles are required to be purchased under  
22 section 303(b)(4), the Federal agency for which the Federal fleets are  
23 maintained (or the Federal agencies for which the Federal fleets are maintained,  
24 acting jointly under a memorandum of agreement providing for cost sharing)  
25 shall enter into a commercial arrangement as provided in paragraph (1).

26           “(B) SUNSET.—Subparagraph (A) ceases to be effective at the end of  
27 fiscal year 2013.”.

1 **SEC. 825. STATIONARY FUEL CELL PURCHASE REQUIREMENT.**

2 (a) **REQUIREMENT.**— The President, acting through the Secretary of Energy, shall seek to  
3 ensure that, to the extent economically practicable and technically feasible, of the total amount of  
4 electric energy the Federal Government consumes during any fiscal year, the following amounts shall be  
5 generated by fuel cells —

6 (1) not less than 1 percent in fiscal years 2006 through 2008;

7 (2) not less than 2 percent in fiscal years 2009 and 2010; and

8 (2) not less than 3 percent in fiscal year 2011 and each fiscal year thereafter.

9 (b) **COMPLIANCE.**— In complying with the requirements of subsection (a), Federal agencies  
10 are encouraged to —

11 (1) use innovative purchasing practices;

12 (2) use fuel cells at the site of electricity usage and in combined heat and power  
13 applications; and

14 (3) use fuel cells in stand alone power functions, such as but not limited to battery  
15 power and backup power.

16 (c) **DEFINITIONS.**— For purposes of this section —

17 (1) the term “fuel cells” means an integrated system comprised of a fuel cell stack  
18 assembly and balance of plant components that converts a fuel into electricity using an  
19 electrochemical means.

20 (2) the term “electrical energy” includes on and off grid power, including premium  
21 power applications, standby power applications and electricity generation..

22 (d) **AUTHORIZATION OF APPROPRIATIONS.**— For the purposes of this section, there are  
23 authorized to be appropriated to the Secretary of Energy \$30,000,000 for fiscal years 2004,  
24 \$70,000,000 for fiscal year 2005, and \$100,000,000 for each of fiscal years 2006 and thereafter.