108TH CONGRESS 1ST SESSION S. 821

To accelerate the commercialization and widespread use of hydrogen energy and fuel cell technologies, and for other purposes.

IN THE SENATE OF THE UNITED STATES

April 8, 2003

Mr. HARKIN introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

A BILL

- To accelerate the commercialization and widespread use of hydrogen energy and fuel cell technologies, and for other purposes.
 - 1 Be it enacted by the Senate and House of Representa-
 - 2 tives of the United States of America in Congress assembled,

3 SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

- 4 (a) SHORT TITLE.—This Act may be cited as the
- 5 "Hydrogen and Fuel Cell Energy Act of 2003".
- 6 (b) TABLE OF CONTENTS.—The table of contents of
- 7 this Act is as follows:

Sec. 1. Short title; table of contents.

TITLE I—HYDROGEN RESEARCH, DEVELOPMENT, AND DEMONSTRATION

Sec. 101. Short title.

Sec. 102. Amendment of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990.

TITLE II—FEDERAL PURCHASES

Sec. 201. Stationary fuel cells in Federal buildings.

Sec. 202. Zero emission vehicles in Federal fleets.

TITLE III—TAX INCENTIVES

Sec. 301. Amendment of 1986 Code.

Sec. 302. Credit for fuel cell and hydrogen motor vehicles.

Sec. 303. Credit for installation of hydrogen fueling stations.

Sec. 304. Credit for retail sale of hydrogen fuel as motor vehicle fuel.

Sec. 305. Credit for stationary and portable fuel cells.

1 TITLE I—HYDROGEN RESEARCH,

2 DEVELOPMENT, AND DEM3 ONSTRATION

4 SEC. 101. SHORT TITLE.

5 This title may be cited as the "George E. Brown, Jr.

6 and Robert S. Walker Hydrogen Future Act of 2003".

7 SEC. 102. AMENDMENT OF THE SPARK M. MATSUNAGA HY-

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DROGEN RESEARCH, DEVELOPMENT, AND

DEMONSTRATION ACT OF 1990.

10 The Spark M. Matsunaga Hydrogen Research, Devel-

11 opment, and Demonstration Act of 1990 (42 U.S.C.

12 12401 et seq.) is amended to read as follows:

13 "SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

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

17 "(b) TABLE OF CONTENTS.—The table of contents

18 of this Act is as follows:

"Sec. 1. Short title; table of contents.

- 3
- "Sec. 2. Finding.
- "Sec. 3. Purposes.
- "Sec. 4. Definitions.
- "Sec. 5. Coordination and consultation.
- "Sec. 6. Advisory panel.
- "Sec. 7. Interagency task force and coordination plan.
- "Sec. 8. Review by the National Academy of Sciences.

"TITLE I—HYDROGEN ENERGY AND FUEL CELL TECHNOLOGY

- "Sec. 101. Research and development.
- "Sec. 102. Demonstrations in conjunction with research and development.
- "Sec. 103. Public education, training, and technology transfer.
- "Sec. 104. Report.
- "Sec. 105. Authorization of appropriations.

"TITLE II—DEMONSTRATIONS

- "Sec. 201. Federal fuel cell and hydrogen infrastructure pilot projects.
- "Sec. 202. Hydrogen transportation corridor and regional pilot projects.
- "Sec. 203. International demonstrations.
- "Sec. 204. Demonstrations of renewable production of hydrogen.
- "Sec. 205. Operation, cost sharing, and reporting.

1 "SEC. 2. FINDING.

2 "Congress finds that it is in the national interest to
3 accelerate introduction of hydrogen energy and fuel cell
4 technologies in order to—

- 5 "(1) increase energy efficiency and security;6 and
- 7 "(2) enable the use of clean, domestic, and re-8 newable energy sources.

9 "SEC. 3. PURPOSES.

- 10 "The purposes of this Act are—
- "(1) to direct the Secretary to conduct a research, development, demonstration, and commercial
 application program on hydrogen production, delivery, storage, and use technologies and fuel cell technologies;

1	((2) to accelerate the commercialization and
2	widespread use of hydrogen energy and fuel cell
3	technologies in transportation, commercial, indus-
4	trial, residential, and utility applications, in order
5	to—
6	"(A) reduce the life cycle pollution and
7	greenhouse gas emissions from energy use;
8	"(B) enable widespread use of renewable
9	energy sources by allowing clean, efficient, and
10	flexible storage, transportation, and use of the
11	energy; and
12	"(C) promote the energy security of the
13	United States through use of domestic energy
14	sources and distributed energy infrastructure;
15	((3) to reduce the costs of fuel cell stacks and
16	of hydrogen fuel;
17	"(4) to improve hydrogen storage and other
18	critical technologies;
19	((5) to enable the economical and environ-
20	mentally sound use of renewable resources for the
21	production of hydrogen; and
22	"(6) to ensure the coordinated availability of
23	hydrogen-powered vehicles and the necessary refuel-
24	ing infrastructure.

1 "SEC. 4. DEFINITIONS.

2	"In this Act:
3	"(1) DEPARTMENT.—The term 'Department'
4	means the Department of Energy.
5	"(2) PANEL.—The term 'Panel' means the Hy-
6	drogen and Fuel Cells Technical Advisory Panel es-
7	tablished by section 107(a).
8	"(3) Secretary.—The term 'Secretary' means
9	the Secretary of Energy.
10	"SEC. 5. COORDINATION AND CONSULTATION.
11	"(a) Responsibility of Secretary.—
12	"(1) IN GENERAL.—The Secretary shall have
13	overall management responsibility for carrying out
14	this Act.
15	"(2) Administrative actions.—In carrying
16	out this Act—
17	"(A) the Secretary shall establish a central
18	point for the coordination of all hydrogen en-
19	ergy and fuel cell research, development, and
20	demonstration activities of the Department;
21	"(B) the Secretary and the Panel may ob-
22	tain assistance from, any other Federal agen-
23	cy—
24	"(i) on a reimbursable or non-

1	"(ii) with the consent of the Federal
2	agency; and
3	"(C) the Secretary shall consult with—
4	"(i) other Federal agencies, as appro-
5	priate; and
6	"(ii) the Panel.
7	"(b) DUPLICATION.—The Secretary shall ensure, to
8	the maximum extent practicable, that activities under this
9	Act do not—
10	"(1) duplicate any available research and devel-
11	opment results; or
12	"(2) displace or compete with privately-funded
13	hydrogen and fuel cell energy activities.
14	"SEC. 6. ADVISORY PANEL.
15	"(a) ESTABLISHMENT.—There is established an advi-
16	sory panel, to be known as the 'Hydrogen and Fuel Cells
17	Technical Advisory Panel', to advise the Secretary in car-
18	rying out this Act.
19	"(b) Membership.—
20	"(1) IN GENERAL.—The Secretary shall appoint
21	to the Panel not fewer than 9 nor more than 15
22	members, based on technical and other qualifica-
23	tions, from—
24	"(A) domestic industry;
25	((/D)

25 "(B) universities;

1	"(C) professional societies;
2	"(D) Federal laboratories;
3	"(E) financial institutions;
4	"(F) environmental organizations; and
5	"(G) such other organizations as the Sec-
6	retary determines to be appropriate.
7	"(2) TERMS.—
8	"(A) IN GENERAL.—The term of a mem-
9	ber of the Panel shall not be more than 3 years.
10	"(B) STAGGERED TERMS.—The Secretary
11	may appoint members of the Panel in a manner
12	that allows the terms of the members serving at
13	any time to expire at spaced intervals so as to
14	ensure continuity in the functioning of the
15	Panel.
16	"(C) REAPPOINTMENT.—A member of the
17	Panel whose term expires may be reappointed.
18	"(3) CHAIRPERSON.—The Panel shall select a
19	Chairperson from among the members of the Panel.
20	"(c) REVIEW AND RECOMMENDATIONS.—
21	"(1) IN GENERAL.—The Panel shall review and
22	make any necessary recommendations to the Sec-
23	retary on—
24	"(A) the implementation and conduct of
25	programs under this Act;

1	"(B) the economic, technological, and envi-
2	ronmental consequences of the deployment of
3	hydrogen production, delivery, and use tech-
4	nologies and fuel cell technologies; and
5	"(C) the coordination plan prepared by the
6	task force under section 7(c).
7	"(2) Consideration by secretary.—
8	"(A) IN GENERAL.—The Secretary shall
9	consider, but shall not be required to adopt, any
10	recommendation of the Panel under paragraph
11	(1).
12	"(B) REPORT.—The Secretary shall in-
13	clude in the report under section 104—
14	"(i) for each recommendation of the
15	Panel implemented by the Secretary, a de-
16	scription of the progress made in imple-
17	menting the recommendation; and
18	"(ii) for each recommendation of the
19	Panel that is not implemented by the Sec-
20	retary, an explanation of the reasons why
21	the recommendation was not implemented.
22	"(d) SUPPORT.—The Secretary shall provide such
23	staff, funds, and other assistance as are necessary to en-
24	able the Panel to carry out the responsibilities of the
25	Panel.

"SEC. 7. INTERAGENCY TASK FORCE AND COORDINATION PLAN.

3 "(a) ESTABLISHMENT.—Not later than 120 days
4 after the date of enactment of the Hydrogen and Fuel Cell
5 Energy Act of 2003, the President shall establish an inter6 agency task force to coordinate Federal hydrogen and fuel
7 cell energy activities.

8 "(b) MEMBERSHIP.—The task force shall include— 9 "(1) the Director of the Office of Science and 10 Technology Policy, who shall act as chairperson; and "(2) representatives of— 11 12 "(A) the Department of Energy; 13 "(B) the Department of Transportation; "(C) the Department of Defense; 14 "(D) the Department of Commerce (in-15 16 cluding the National Institute for Standards 17 and Technology); "(E) the Environmental Protection Agen-18 19 cy; "(F) the National Aeronautics and Space 20 21 Administration; 22 "(G) the Department of State; and "(H) such other Federal agencies as the 23 24 President considers appropriate. "(c) COORDINATION PLAN.—The task force shall 25 26 prepare a comprehensive coordination plan for Federal hydrogen and fuel cell energy activities, which shall include
 a summary of those activities.

3 "(d) REPORT.—Not later than 1 year after the date
4 on which the President establishes the task force, the task
5 force shall submit to Congress a report that includes—
6 "(1) the coordination plan under subsection (c);
7 and

8 "(2) a description of actions taken to ensure
9 interagency coordination of Federal hydrogen and
10 fuel cell energy activities.

11 "SEC.8. REVIEW BY THE NATIONAL ACADEMY OF12SCIENCES.

13 "Not later than June 30, 2006, and at least every
14 4 years thereafter, the National Academy of Sciences
15 shall—

16 "(1) complete a review of—

17 "(A) the progress made through Federal
18 hydrogen and fuel cell energy programs and ac19 tivities; and

20 "(B) the need for modified or additional21 programs; and

22 "(2) submit to Congress a report that describes23 the results of the review.

"TITLE I—HYDROGEN ENERGY AND FUEL CELL TECHNOLOGY

3 "SEC. 101. RESEARCH AND DEVELOPMENT.

"(a) PROGRAM.—The Secretary shall carry out a re-4 search and development program relating to hydrogen pro-5 duction, delivery, storage, and use technologies and fuel 6 7 cell technologies, the goal of which program shall be to 8 enable the safe, economical, and environmentally sound 9 use of hydrogen energy and fuel cells for industrial, com-10 mercial, residential, transportation, and utility applications. 11

12 "(b) RESEARCH AND DEVELOPMENT AREAS.—In 13 carrying out the program under subsection (a), the Sec-14 retary shall focus on critical technical issues, including— "(1) the production of hydrogen, with emphasis 15 16 on cost-effective production from renewable energy 17 resources such as biomass, wind, and solar energy; 18 "(2) the delivery of hydrogen (including the 19 safe distribution and fueling);

20 "(3) the storage of hydrogen, including storage21 in surface transportation;

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

1	((5) the use of hydrogen energy and fuel cells
2	in a variety of applications, including—
3	"(A) isolated villages, islands, and areas in
4	which other energy sources are not available or
5	are very expensive; and
6	"(B) foreign markets, particularly markets
7	in which an energy infrastructure is not well-de-
8	veloped.
9	"(c) Codes and Standards.—The Secretary
10	shall—
11	"(1) facilitate the development of domestic and
12	international codes and standards; and
13	"(2) seek to resolve other critical regulatory
14	and technical barriers preventing the introduction of
15	hydrogen energy and fuel cells into the marketplace.
16	"(d) Federal Funding.—The Secretary shall carry
17	out the research and development activities authorized
18	under this section through solicitations of proposals and
19	evaluations using competitive merit review.
20	"(e) Cost Sharing.—
21	"(1) IN GENERAL.—The Secretary shall require
22	a commitment from non-Federal sources of at least
23	20 percent of the cost of a proposed research or de-
24	velopment activity.

1	"(2) REDUCTION OR ELIMINATION.—The Sec-
2	retary may reduce or eliminate the cost sharing re-
3	quirement under paragraph (1)—
4	"(A) if the Secretary determines that the
5	research and development is of a basic or fun-
6	damental nature; or
7	"(B) for a technical analysis, outreach ac-
8	tivity, or educational program that the Sec-
9	retary does not expect to result in a marketable
10	product.
11	"SEC. 102. DEMONSTRATIONS IN CONJUNCTION WITH RE-
12	SEARCH AND DEVELOPMENT.
13	"(a) REQUIREMENT.—In conjunction with activities
14	conducted under section 102, the Secretary shall conduct
15	small-scale demonstrations of hydrogen energy and fuel
16	cell technologies at self-contained sites in order to evalu-
17	ate—
18	((1) the commercial potential of those tech-
19	nologies; and
20	((2) the effectiveness of the technologies in typ-
21	ical use.
22	"(b) FEDERAL FUNDING.—The Secretary shall carry
23	out the demonstrations authorized under this section
24	through solicitations of proposals and evaluations using
25	competitive merit review.

14

1 "(c) Cost Sharing.—

2	"(1) IN GENERAL.—The Secretary shall require
3	a commitment from non-Federal sources of at least
4	50 percent of the costs directly relating to a dem-
5	onstration project under this section, as determined
6	by the Secretary.
7	"(2) REDUCTION.—The Secretary may reduce
8	the cost sharing requirement under paragraph (1) if
9	the Secretary determines that the reduction is ap-
10	propriate considering the technological risks involved
11	in the project.
12	"SEC. 103. PUBLIC EDUCATION, TRAINING, AND TECH-
13	NOLOGY TRANSFER.
13 14	NOLOGY TRANSFER. "(a) PUBLIC EDUCATION.—The Secretary shall con-
14	"(a) PUBLIC EDUCATION.—The Secretary shall con-
14 15	"(a) PUBLIC EDUCATION.—The Secretary shall con- duct a public education program designed to increase pub-
14 15 16	"(a) PUBLIC EDUCATION.—The Secretary shall con- duct a public education program designed to increase pub- lic interest in and acceptance of hydrogen energy and fuel
14 15 16 17	"(a) PUBLIC EDUCATION.—The Secretary shall con- duct a public education program designed to increase pub- lic interest in and acceptance of hydrogen energy and fuel cell technologies.
14 15 16 17 18	 "(a) PUBLIC EDUCATION.—The Secretary shall conduct a public education program designed to increase public interest in and acceptance of hydrogen energy and fuel cell technologies. "(b) TRAINING.—
14 15 16 17 18 19	 "(a) PUBLIC EDUCATION.—The Secretary shall conduct a public education program designed to increase public interest in and acceptance of hydrogen energy and fuel cell technologies. "(b) TRAINING.— "(1) IN GENERAL.—The Secretary shall carry
 14 15 16 17 18 19 20 	 "(a) PUBLIC EDUCATION.—The Secretary shall conduct a public education program designed to increase public interest in and acceptance of hydrogen energy and fuel cell technologies. "(b) TRAINING.— "(1) IN GENERAL.—The Secretary shall carry out a program to promote university-based training
 14 15 16 17 18 19 20 21 	 "(a) PUBLIC EDUCATION.—The Secretary shall conduct a public education program designed to increase public interest in and acceptance of hydrogen energy and fuel cell technologies. "(b) TRAINING.— "(1) IN GENERAL.—The Secretary shall carry out a program to promote university-based training in critical skills for research in, production of, and

1	"(A) the provision of research fellowships
2	at universities;
3	"(B) the establishment of centers of excel-
4	lence in critical technologies;
5	"(C) the provision of internships in indus-
6	try; and
7	"(D) the implementation of such other
8	measures as the Secretary deems appropriate.
9	"(c) Technology Transfer.—
10	"(1) IN GENERAL.—The Secretary shall carry
11	out a program to transfer critical hydrogen energy
12	and fuel cell technologies to the private sector in
13	order to promote—
14	"(A) greater understanding of those tech-
15	nologies; and
16	"(B) more widespread use of the results of
17	research conducted under this Act.
18	"(2) FOREIGN COUNTRIES.—The Secretary
19	shall carry out a program to accelerate wider appli-
20	cation of hydrogen energy and fuel cell technologies
21	in foreign countries in order to—
22	"(A) increase the global market for the
23	technologies; and
24	"(B) foster global development without
25	harmful environmental effects.

"(3) EXCHANGE OF INFORMATION AND TECH NOLOGY.—The Secretary shall foster the exchange
 of generic, nonproprietary information and tech nology developed in accordance with this title among
 industry, academia, and Federal agencies.

6 "(4) INVENTORY AND ASSESSMENT.—In car-7 rying out paragraphs (1) and (2), the Secretary 8 shall complete an inventory and assessment of the 9 technical and commercial viability of hydrogen pro-10 duction, delivery, storage, and use technologies and 11 fuel cell technologies.

12 **"SEC. 104. REPORT.**

"(a) REQUIREMENT.—Not later than 1 year after the
date of enactment of the Hydrogen and Fuel Cell Energy
Act of 2003, and biennially thereafter, the Secretary shall
submit to Congress a report on the status of and progress
in implementing the programs under this title.

18 "(b) CONTENTS.—A report under subsection (a) shall
19 include, in addition to any opinions and recommendations
20 of the Secretary—

- 21 "(1) an assessment of—
- 22 "(A) the effectiveness of the programs23 under this title; and
- 24 "(B) the extent to which the programs are25 meeting the purposes of this Act;

1 "(2) recommendations of the Panel for any im-2 provements in the programs that are needed, includ-3 ing recommendations for additional legislation; and 4 "(3) to the maximum extent practicable, an 5 analysis of related Federal, State, local, and private 6 sector research, development, and demonstration ac-7 tivities to identify productive areas for increased 8 intergovernmental and private-public sector collabo-9 ration. 10 **"SEC. 105. AUTHORIZATION OF APPROPRIATIONS.**

11 "(a) HYDROGEN ACTIVITIES.—There are authorized 12 to be appropriated to carry out activities under this title 13 relating to hydrogen energy (in addition to any amounts 14 made available for those purposes under other Acts of 15 Congress)—

- 16 "(1) \$100,000,000 for fiscal year 2004;
- 17 "(2) \$125,000,000 for fiscal year 2005;
- 18 "(3) \$150,000,000 for fiscal year 2006;
- 19 "(4) \$160,000,000 for fiscal year 2007;
- 20 "(5) \$170,000,000 for fiscal year 2008;
- 21 "(6) \$180,000,000 for fiscal year 2009; and
- 22 "(7) \$190,000,000 for fiscal year 2010.

23 "(b) FUEL CELL ACTIVITIES.—There are authorized
24 to be appropriated to carry out activities under this title
25 relating to fuel cells (in addition to any amounts made

available for those purposes under other Acts of Con gress)—

3	"(1) \$100,000,000 for fiscal year 2004;
4	"(2) \$125,000,000 for fiscal year 2005;
5	"(3) \$150,000,000 for fiscal year 2006;
6	"(4) \$125,000,000 for fiscal year 2007;
7	"(5) \$100,000,000 for fiscal year 2008;
8	"(6) \$100,000,000 for fiscal year 2009; and
9	"(7) \$100,000,000 for fiscal year 2010.
10	"TITLE II—DEMONSTRATIONS
11	"SEC. 201. FEDERAL FUEL CELL AND HYDROGEN INFRA-
12	STRUCTURE PILOT PROJECTS.
13	"(a) Program.—The Secretary shall carry out a pro-
14	gram of pilot projects to demonstrate the viability of fuel
15	cells and associated hydrogen fueling infrastructure in in-
16	tegrated service in a variety of applications, including—
17	"(1) fuel cell vehicles in light-duty vehicle fleets;
18	((2) heavy-duty fuel cell on-road and off-road
19	vehicles;
20	"(3) stationary fuel cells in residential and com-
21	mercial buildings; and
22	"(4) portable fuel cells, including auxiliary
23	power units in trucks.
24	
27	"(b) Participants.—

1	"(1) ELIGIBILITY.—A Federal, State, tribal, or
2	local government agency, academic or other non-
3	profit organization, or private entity shall be eligible
4	to participate in a pilot project under subsection (a).
5	"(2) Selection.—
6	"(A) FEDERAL.—The Secretary shall—
7	"(i) consult with Federal agencies (in-
8	cluding fleet and building managers) to
9	identify potential pilot projects; and
10	"(ii) select the projects that best meet
11	the criteria described in subparagraph (C).
12	"(B) Non-Federal.—The Secretary
13	shall—
14	"(i) solicit proposals for projects from
15	eligible non-Federal entities; and
16	"(ii) evaluate the proposals using
17	competitive merit review.
18	"(C) CRITERIA.—The criteria for selecting
19	pilot projects shall include—
20	"(i) potential to further the purposes
21	of this Act;
22	"(ii) interest and capability of the
23	participating entities;
24	"(iii) appropriateness of the site for
25	fueling infrastructure and for fuel cells;

1	"(iv) educational potential and visi-
2	bility to the public;
3	"(v) geographic diversity;
4	"(vi) a wide range of climate and op-
5	erating environments;
6	"(vii) preference for using fueling in-
7	frastructure for both fuel cell vehicles and
8	stationary fuel cells;
9	"(viii) preference for making fueling
10	infrastructure available for public use; and
11	"(ix) such other criteria as the Sec-
12	retary considers appropriate for the suc-
13	cess of the projects.
14	"(3) Cost sharing.—The Secretary may re-
15	quire a commitment from a participating Federal
16	agency based on the costs that the agency would
17	incur for vehicles, power, or other services provided
18	by the pilot projects if the vehicles, power, or other
19	services were not so provided.
20	"(c) AUTHORIZATION OF APPROPRIATIONS.—There
21	are authorized and to be appropriated to carry out this
22	section—
23	"(1) \$40,000,000 for fiscal year 2004;
24	"(2) \$200,000,000 for fiscal year 2005;
25	"(3) \$250,000,000 for fiscal year 2006;

1	"(4) \$250,000,000 for fiscal year 2007;		
2	"(5) \$160,000,000 for fiscal year 2008;		
3	"(6) \$120,000,000 for fiscal year 2009; and		
4	"(7) \$60,000,000 for fiscal year 2010.		
5	"SEC. 202. HYDROGEN TRANSPORTATION CORRIDOR AND		
6	REGIONAL PILOT PROJECTS.		
7	"(a) Program.—		
8	"(1) IN GENERAL.—The Secretary shall carry		
9	out a program of pilot projects to demonstrate the		
10	viability of hydrogen-powered vehicles and hydrogen		
11	fueling infrastructure along major transportation		
12	routes or in entire regions.		
13	"(2) VEHICLES.—Hydrogen-powered vehicles		
14	eligible for the pilot projects include—		
15	"(A) hybrid electric vehicles that burn hy-		
16	drogen; and		
17	"(B) fuel cell vehicles.		
18	"(3) FUELING INFRASTRUCTURE.—A pilot		
19	project shall include multiple hydrogen fueling sta-		
20	tions so that vehicles may refuel throughout the		
21	transportation route or region that the pilot project		
22	is intended to cover.		
23	"(b) Participants.—		
24	"(1) CONSORTIA.—The Secretary shall solicit		

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1	State or local governments, vehicle manufacturers,	
2	manufacturers of hydrogen fueling equipment, aca-	
3	demic institutions or consulting organizations, and	
4	other entities necessary for the success of the	
5	projects.	
6	"(2) CRITERIA.—The criteria for selecting pilot	
7	projects shall include—	
8	"(A) interest and capability of the partici-	
9	pating entities;	
10	"(B) suitability of the location for vehicles	
11	that can be refueled only at the stations pro-	
12	vided in the project;	
13	"(C) diversity of uses and users of the ve-	
14	hicles in the project;	
15	"(D) educational potential and visibility to	
16	the public;	
17	"(E) preference for using fueling infra-	
18	structure for both fuel cell vehicles and sta-	
19	tionary fuel cells;	
20	"(F) preference for making fueling infra-	
21	structure available for public use; and	
22	"(G) such other criteria as the Secretary	
23	considers appropriate for the success of the	
24	projects.	

1	"(c) Authorization of Appropriations.—There			
2	are authorized to be appropriated to carry out this sec-			
3	tion—			
4	"(1) \$10,000,000 for fiscal year 2004;			
5	"(2) \$30,000,000 for fiscal year 2005;			
6	"(3) \$50,000,000 for fiscal year 2006;			
7	"(4) \$75,000,000 for fiscal year 2007;			
8	"(5) \$85,000,000 for fiscal year 2008;			
9	"(6) \$85,000,000 for fiscal year 2009; and			
10	"(7) \$40,000,000 for fiscal year 2010.			
11	"SEC. 203. INTERNATIONAL DEMONSTRATIONS.			
12	"(a) Program.—			
13	"(1) IN GENERAL.—The Secretary, in consulta-			
14	tion with the Administrator of the Agency for Inter-			
15	national Development, shall carry out a program of			
16	demonstrations of fuel cells and associated hydrogen			
17	fueling infrastructure in foreign countries.			
18	"(2) PURPOSES.—The purposes of the dem-			
19	onstrations shall be to—			
20	"(A) demonstrate the use of hydrogen en-			
21	ergy and fuel cells in places where a fossil fuel			
22	energy infrastructure is not already well devel-			
23	oped;			
24	"(B) increase the global market for fuel			
25	cell and hydrogen energy technologies; and			

1	"(C) promote global development without			
2	harmful environmental effects.			
3	"(3) ELIGIBLE TECHNOLOGIES.—The program			
4	may demonstrate—			
5	"(A) fuel cell vehicles in light-duty vehicle			
6	fleets;			
7	"(B) heavy-duty fuel cell on-road and off-			
8	road vehicles;			
9	"(C) stationary fuel cells in residential and			
10	commercial buildings; and			
11	"(D) portable fuel cells, including auxiliary			
12	power units in trucks.			
13	"(b) Participants.—			
14	"(1) ELIGIBILITY.—A foreign nation, nonprofit			
15	organization, or private entity shall be eligible for a			
16	pilot project under subsection (a).			
17	"(2) COOPERATION.—An eligible entity may			
18	perform a project in cooperation with United States			
19	nonprofit organizations and private entities.			
20	"(3) Cost sharing.—The Secretary may re-			
21	duce the requirement under section $205(e)$ based on			
22	the expense of foreign activities and the financial re-			
23	sources of participating foreign entities.			

"(c) AUTHORIZATION OF APPROPRIATIONS.—There
 are authorized to be appropriated to carry out this sec tion—

4 "(1) \$20,000,000 for fiscal year 2004;
5 "(2) \$50,000,000 for fiscal year 2005; and
6 "(3) \$70,000,000 for each of fiscal years 2006
7 through 2010.

8 "SEC. 204. DEMONSTRATIONS OF RENEWABLE PRODUC9 TION OF HYDROGEN.

"(a) PROGRAM.—The Secretary shall carry out a program of demonstration projects to test the technical and
commercial viability of the production of hydrogen from
renewable resources, including—

14 "(1) production of hydrogen and other commer-15 cial products from biomass in biorefineries; and "(2) production and use of hydrogen at a single 16 17 farm location in electrofarming, including-18 "(A) production from— 19 "(i) cultivation and reforming of bio-20 mass; 21 "(ii) farm waste; or "(iii) wind power; and 22 23 "(B) use in— "(i) vehicles; 24 25 "(ii) equipment; and

	20			
1	"(iii) stationary and portable fuel			
2	cells.			
3	"(b) Participants.—			
4	"(1) IN GENERAL.—The Secretary shall select			
5	the demonstration projects through solicitation of			
6	proposals for funding and evaluation using competi-			
7	tive merit review.			
8	(2) CRITERIA.—The criteria for selecting pilot			
9	projects shall include—			
10	"(A) commercial potential for the tech-			
11	nology;			
12	"(B) life cycle environmental benefits of			
13	the technology;			
14	"(C) the potential of the technology to			
15	produce suitable hydrogen gas for use in proton			
16	exchange membrane fuel cells; and			
17	"(D) such other criteria as the Secretary			
18	considers appropriate for the success of the			
19	projects.			
20	"(c) AUTHORIZATION OF APPROPRIATIONS.—There			
21	are authorized to be appropriated to carry out this sec-			
22	tion—			
23	"(1) \$10,000,000 for fiscal year 2004;			
24	"(2) \$50,000,000 for fiscal year 2005;			
25	"(3) \$75,000,000 for fiscal year 2006;			

1	"(4) \$75,000,000 for fiscal year 2007;		
2	"(5) \$75,000,000 for fiscal year 2008;		
3	"(6) \$50,000,000 for fiscal year 2009; and		
4	"(7) \$50,000,000 for fiscal year 2010.		
5	"SEC. 205. OPERATION, COST SHARING, AND REPORTING.		
6	"(a) Operation.—The equipment used in projects		
7	under this title shall be operated by the participating enti-		
8	ties in integrated service for a period of not less than 2		
9	years.		
10	"(b) TRAINING AND TECHNICAL SUPPORT.—The		
11	Secretary shall provide such training and technical sup-		
12	port as participating entities require to ensure the success		
13	of the projects under this title.		
14	"(c) DATA COLLECTION, ANALYSIS, AND DISSEMINA-		
15	TION.—		
16	"(1) AGREEMENTS.—The Secretary shall enter		
17	into agreements with participating agencies and pri-		
18	vate sector entities providing for the collection of		
19	proprietary and nonproprietary information from		
20	projects under this title.		
21	"(2) Public availability.—The Secretary		
22	shall make available to all interested persons—		
23	"(A) technical nonproprietary information		
24	collected under agreements under paragraph		
25	(1); and		

 "(B) analyses of collected proprietary and nonproprietary information.

3 "(3) PROPRIETARY INFORMATION.—The Sec4 retary shall not disclose to the public any propri5 etary information collected under agreements under
6 paragraph (1).

7 "(d) COORDINATION.—The Secretary shall ensure co8 ordination of the programs under this title with each other
9 and with other Federal hydrogen and fuel cell demonstra10 tion programs to improve efficiency, share infrastructure,
11 and avoid duplication of effort.

12 "(e) Cost Sharing.—

13 "(1) IN GENERAL.—The Secretary shall require
14 a commitment from non-Federal sources of at least
15 50 percent of the costs relating directly to a dem16 onstration project under this title.

17 "(2) REDUCTION.—The Secretary may reduce
18 the non-Federal requirement under paragraph (1) if
19 the Secretary determines that the reduction is ap20 propriate considering the technological risks involved
21 in the project.

"(f) REPORTS.—Not later than 1 year after the date
of enactment of the Hydrogen and Fuel Cell Energy Act
of 2003, and annually thereafter, the Secretary shall submit to Congress a report that—

1 "(1) provides an update on the progress of se-2 lecting and running the projects under this title; 3 "(2) provides a summary of data collected 4 under subsection (c) and associated analyses; "(3) assesses the results of the programs; and 5 "(4) recommends any modifications in the pro-6 7 grams that may be necessary to achieve the purposes 8 of this title.". TITLE II—FEDERAL PURCHASES 9 10 SEC. 201. STATIONARY FUEL CELLS IN FEDERAL BUILD-11 INGS. 12 Section 205 of the Energy Conservation and Production Act (42 U.S.C. 6834) is amended by adding at the 13 14 end the following: 15 "(e) FUEL CELLS.— "(1) STANDARDS.—Not later than 180 days 16 17 after the date of enactment of this subsection, the 18 Secretary of Energy shall revise Federal building en-19 ergy efficiency performance standards to— "(A) require, to the maximum extent tech-20 21 nologically and economically feasible, that each 22 new Federal building use fuel cells as a primary 23 power source;

1	"(B) encourage placement of fuel cells in
2	Federal buildings in existence as of the date of
3	enactment of this subsection; and
4	"(C) encourage—
5	"(i) the use of fuel cells to provide
6	heat and power for Federal buildings;
7	"(ii) the making available of extra hy-
8	drogen for use in transportation and port-
9	able fuel cells; and
10	"(iii) the provision of extra power to
11	the electric grid.
12	"(2) Study.—The Secretary of Energy, in con-
13	sultation with other Federal agencies as appropriate,
14	shall conduct a study to determine means by which
15	to make effective use of fuel cells in Federal build-
16	ings, including—
17	"(A) the use of fuel cells for high-reliability
18	and uninterruptible power;
19	"(B) the use of fuel cells to provide heat
20	and power for Federal buildings;
21	"(C) the need for modifications in—
22	"(i) building specifications and design;
23	"(ii) building codes;
24	"(iii) construction practices; and
25	"(iv) building operations; and

1	"(D) the identification of measures and in-
2	centives that would increase use of fuel cells in
3	Federal buildings.
4	"(3) REPORT.—Not later than 18 months after
5	the date of enactment of this subsection, the Sec-
6	retary of Energy shall submit to Congress a report
7	that describes—
8	"(A) the progress made as of the date of
9	submission of the report in use of fuel cell
10	power under paragraph (1); and
11	"(B) the results of the study under para-
12	graph (2).".
13	SEC. 202. ZERO EMISSION VEHICLES IN FEDERAL FLEETS.
14	Section 203(b) of the Energy Policy Act of 1992 (42 $$
15	U.S.C. 13212(b)) is amended by adding at the end the
16	following:
17	"(4) ZERO-EMISSION VEHICLES.—
18	"(A) IN GENERAL.—Except as provided in
19	subparagraph (B), of the number of vehicles ac-
20	quired by a Federal fleet in a fiscal year, zero-
21	emission vehicles shall comprise—
22	"(i) 10 percent in each of fiscal years
23	2007 and 2008;
24	"(ii) 25 percent in each of fiscal years
25	2009 and 2010;

- "(iii) 50 percent in each of fiscal 1 2 years 2011 and 2012; and 3 "(iv) 75 percent in fiscal year 2013 4 and each fiscal year thereafter. "(B) PARTIAL CREDIT.—The Secretary 5 6 may count 2 alternative-fuel vehicles that meet 7 Super Ultra Low Emission Vehicle standards 8 issued by the Environmental Protection Agency 9 as equivalent to 1 zero-emission vehicle in meet-10 ing the deadlines specified in subparagraph (A). 11 "(C) DELAY OF DEADLINES.—If, for a fis-12 cal year, the Secretary determines that no suit-13 able commercial vehicle is available for acquisi-14 tion under subparagraph (A), the Secretary 15 may delay the deadlines for that year and for 16 subsequent years specified in that subparagraph 17 by 1 year. 18 "(5) OVERALL FEDERAL PURCHASES.—The 19 Secretary may promulgate regulations under which 20 the requirements under paragraph (4)(A) would be 21 met with respect to overall Federal purchases rather
- than by individual Federal fleets.".

1 TITLE III—TAX INCENTIVES

2 SEC. 301. AMENDMENT OF 1986 CODE.

3 Except as otherwise expressly provided, whenever in 4 this title an amendment or repeal is expressed in terms 5 of an amendment to, or repeal of, a section or other provi-6 sion, the reference shall be considered to be made to a 7 section or other provision of the Internal Revenue Code 8 of 1986.

9 SEC. 302. CREDIT FOR FUEL CELL AND HYDROGEN MOTOR 10 VEHICLES.

(a) IN GENERAL.—Subpart B of part IV of subchapter A of chapter 1 (relating to foreign tax credit, etc.)
is amended by adding at the end the following new section: **"SEC. 30B. CREDIT FOR FUEL CELL AND HYDROGEN**MOTOR VEHICLES.

16 "(a) ALLOWANCE OF CREDIT.—There shall be al17 lowed as a credit against the tax imposed by this chapter
18 for the taxable year an amount equal to the sum of—

19 "(1) the new qualified fuel cell motor vehicle20 credit determined under subsection (b), and

21 "(2) the new qualified hydrogen fuel motor ve22 hicle credit determined under subsection (c).

23 "(b) NEW QUALIFIED FUEL CELL MOTOR VEHICLE24 CREDIT.—

1	"(1) IN GENERAL.—For purposes of subsection
2	(a), the new qualified fuel cell motor vehicle credit
3	determined under this subsection with respect to a
4	new qualified fuel cell motor vehicle placed in service
5	by the taxpayer during the taxable year is—
6	"(A) \$4,000, if such vehicle has a gross ve-
7	hicle weight rating of not more than 8,500
8	pounds,
9	"(B) \$10,000, if such vehicle has a gross
10	vehicle weight rating of more than 8,500
11	pounds but not more than 14,000 pounds,
12	"(C) \$20,000, if such vehicle has a gross
13	vehicle weight rating of more than 14,000
14	pounds but not more than 26,000 pounds, and
15	"(D) $$40,000$, if such vehicle has a gross
16	vehicle weight rating of more than 26,000
17	pounds.
18	"(2) Increase for fuel efficiency.—
19	"(A) IN GENERAL.—The amount deter-
20	mined under paragraph $(1)(A)$ with respect to
21	a new qualified fuel cell motor vehicle which is
22	a passenger automobile or light truck shall be
23	increased by—
24	"(i) \$1,000, if such vehicle achieves at
25	least 150 percent but less than 175 per-

1	cent of the 2002 model year city fuel econ-
2	omy,
3	"(ii) \$1,500, if such vehicle achieves
4	at least 175 percent but less than 200 per-
5	cent of the 2002 model year city fuel econ-
6	omy,
7	"(iii) \$2,000, if such vehicle achieves
8	at least 200 percent but less than 225 per-
9	cent of the 2002 model year city fuel econ-
10	omy,
11	"(iv) \$2,500, if such vehicle achieves
12	at least 225 percent but less than 250 per-
13	cent of the 2002 model year city fuel econ-
14	omy,
15	"(v) \$3,000, if such vehicle achieves
16	at least 250 percent but less than 275 per-
17	cent of the 2002 model year city fuel econ-
18	omy,
19	"(vi) \$3,500, if such vehicle achieves
20	at least 275 percent but less than 300 per-
21	cent of the 2002 model year city fuel econ-
22	omy, and
23	"(vii) \$4,000, if such vehicle achieves
24	at least 300 percent of the 2002 model
25	year city fuel economy.

1	"(B) 2002 model year city fuel econ-
2	OMY.—For purposes of subparagraph (A), the
3	2002 model year city fuel economy with respect
4	to a vehicle shall be determined in accordance
5	with the following tables:
6	"(i) In the case of a passenger auto-

7

mobile:

moduc.		
	The 2002 model year city	
"If vehicle inertia weight class is:	hicle inertia weight class is: fuel economy is:	
1,500 or 1,750 lbs		
2,000 lbs		
2,250 lbs		
2,500 lbs		
2,750 lbs		
3,000 lbs		
3,500 lbs		
4,000 lbs		
4,500 lbs		
5,000 lbs	15.5 mpg	
5,500 lbs		
6,000 lbs		
6,500 lbs		
7,000 or 8,500 lbs	11.1 mpg.	

8

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

The 2002 model year city

"If vehicle inertia weight class is:

1,500 or 1,750 lbs	$37.6 \mathrm{mpg}$
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	$17.3 \mathrm{mpg}$
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 or 8,500 lbs	$12.0~\mathrm{mpg}.$
	AT 1 A A

9

"(C) VEHICLE INERTIA WEIGHT CLASS.—

10

For purposes of subparagraph (B), the term

1	'vehicle inertia weight class' has the same
2	meaning as when defined in regulations pre-
3	scribed by the Administrator of the Environ-
4	mental Protection Agency for purposes of the
5	administration of title II of the Clean Air Act
6	(42 U.S.C. 7521 et seq.).
7	"(3) New qualified fuel cell motor vehi-
8	CLE.—For purposes of this subsection, the term
9	'new qualified fuel cell motor vehicle' means a motor
10	vehicle—
11	"(A) which is propelled by power derived
12	from 1 or more cells which convert chemical en-
13	ergy directly into electricity by combining oxy-
14	gen with hydrogen fuel which is stored on board
15	the vehicle in any form,
16	"(B) which, in the case of a passenger
17	automobile or light truck has received a certifi-
18	cate of conformity under the Clean Air Act and
19	meets the zero emission standard for certifi-
20	cation under the Clean Air Act for the make
21	and model year of the vehicle,
22	"(C) the original use of which commences
23	with the taxpayer,
24	"(D) which is acquired for use or lease by
25	the taxpayer and not for resale, and

4 "(1) ALLOWANCE OF CREDIT.—The new quali5 fied hydrogen fuel motor vehicle credit determined
6 under this subsection is an amount equal to the ap7 plicable percentage of the incremental cost of any
8 new qualified hydrogen fuel motor vehicle placed in
9 service by the taxpayer during the taxable year.

10 "(2) APPLICABLE PERCENTAGE.—For purposes
11 of paragraph (1), the applicable percentage with re12 spect to any new qualified hydrogen fuel motor vehi13 cle is—

- 14 "(A) 50 percent, plus
- 15 "(B) 30 percent, if such vehicle—

"(i) has received a certificate of conformity under the Clean Air Act and meets
or exceeds the most stringent standard
available for certification under the Clean
Air Act for that make and model year vehicle (other than a zero emission standard),
or

23 "(ii) has received an order from an
24 applicable State certifying the vehicle for
25 sale or lease in California and meets or ex-

1	ceeds the most stringent standard available
2	for certification under the State laws of
3	California (enacted in accordance with a
4	waiver granted under section 209(b) of the
5	Clean Air Act) for that make and model
6	year vehicle (other than a zero emission
7	standard).
8	"(3) Incremental cost.—For purposes of
9	this subsection, the incremental cost of any new
10	qualified hydrogen fuel motor vehicle is equal to the
11	amount of the excess of the manufacturer's sug-
12	gested retail price for such vehicle over such price
13	for a gasoline or diesel fuel motor vehicle of the
14	same model, to the extent such amount does not ex-
15	ceed—
16	"(A) \$5,000, if such vehicle has a gross ve-
17	hicle weight rating of not more than 8,500
18	pounds,
19	"(B) \$10,000, if such vehicle has a gross
20	vehicle weight rating of more than 8,500
21	pounds but not more than 14,000 pounds,
22	"(C) \$25,000, if such vehicle has a gross
23	vehicle weight rating of more than 14,000
24	pounds but not more than 26,000 pounds, and

1	"(D) \$40,000, if such vehicle has a gross
2	vehicle weight rating of more than 26,000
3	pounds.
4	"(4) New qualified hydrogen fuel motor
5	VEHICLE.—For purposes of this subsection, the term
6	'new qualified hydrogen fuel motor vehicle' means
7	any motor vehicle—
8	"(A) which is only capable of operating on
9	hydrogen fuel,
10	"(B) the original use of which commences
11	with the taxpayer,
12	"(C) which is acquired by the taxpayer for
13	use or lease, but not for resale, and
14	"(D) which is made by a manufacturer.
15	"(d) Application With Other Credits.—The
16	credit allowed under subsection (a) for any taxable year
17	shall not exceed the excess (if any) of—
18	((1) the regular tax for the taxable year re-
19	duced by the sum of the credits allowable under sub-
20	part A and sections 27, 29, and 30, over
21	((2) the tentative minimum tax for the taxable
22	year.
23	"(e) Other Definitions and Special Rules.—
24	For purposes of this section—

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

4 "(2) 2002 MODEL YEAR CITY FUEL ECON5 OMY.—The 2002 model year city fuel economy with
6 respect to any vehicle shall be measured under rules
7 similar to the rules under section 4064(c).

8 "(3) OTHER TERMS.—The terms 'automobile', 9 'passenger automobile', 'light truck', and 'manufac-10 turer' have the meanings given such terms in regula-11 tions prescribed by the Administrator of the Envi-12 ronmental Protection Agency for purposes of the ad-13 ministration of title II of the Clean Air Act (42 14 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 (d)).

20 "(5) NO DOUBLE BENEFIT.—The amount of
21 any deduction or other credit allowable under this
22 chapter—

23 "(A) for any incremental cost taken into
24 account in computing the amount of the credit
25 determined under subsection (d) shall be re-

1	duced by the amount of such credit attributable
2	to such cost, and
3	"(B) with respect to a vehicle described
4	under subsection (b) or (c), shall be reduced by
5	the amount of credit allowed under subsection
6	(a) for such vehicle for the taxable year.
7	"(6) PROPERTY USED BY TAX-EXEMPT ENTI-
8	TIES.—In the case of a credit amount which is al-
9	lowable with respect to a motor vehicle which is ac-
10	quired by an entity exempt from tax under this
11	chapter, the person which sells or leases such vehicle
12	to the entity shall be treated as the taxpayer with
13	respect to the vehicle for purposes of this section
14	and the credit shall be allowed to such person, but
15	only if the person clearly discloses to the entity in
16	any sale or lease document the specific amount of
17	any credit otherwise allowable to the entity under
18	this section and reduces the sale or lease price of
19	such vehicle by an equivalent amount of such credit.
20	"(7) RECAPTURE.—The Secretary shall, by reg-
21	ulations, provide for recapturing the benefit of any
22	credit allowable under subsection (a) with respect to
23	any property which ceases to be property eligible for
24	such credit (including recapture in the case of a

lease period of less than the economic life of a vehi cle).

''(8) 3 PROPERTY USED OUTSIDE UNITED 4 STATES, ETC., NOT QUALIFIED.—No credit shall be 5 allowed under subsection (a) with respect to any 6 property referred to in section 50(b) or with respect 7 to the portion of the cost of any property taken into 8 account under section 179.

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

13 "(10) CARRYBACK AND CARRYFORWARD AL14 LOWED.—

"(A) IN GENERAL.—If the credit amount 15 16 allowable under subsection (a) for a taxable 17 year exceeds the amount of the limitation under 18 subsection (d) for such taxable year (in this 19 paragraph referred to as the 'unused credit 20 year'), such excess shall be allowed as a credit 21 carryforward for each of the 20 taxable years 22 following the unused credit year.

23 "(B) RULES.—Rules similar to the rules of
24 section 39 shall apply with respect to the credit
25 carryforward under subparagraph (A).

1	"(11) INTERACTION WITH AIR QUALITY AND
2	MOTOR VEHICLE SAFETY STANDARDS.—Unless oth-
3	erwise provided in this section, a motor vehicle shall
4	not be considered eligible for a credit under this sec-
5	tion unless such vehicle is in compliance with—
6	"(A) the applicable provisions of the Clean
7	Air Act for the applicable make and model year
8	of the vehicle (or applicable air quality provi-
9	sions of State law in the case of a State which
10	has adopted such provision under a waiver
11	under section 209(b) of the Clean Air Act), and
12	"(B) the motor vehicle safety provisions of
13	sections 30101 through 30169 of title 49,
14	United States Code.
15	"(f) REGULATIONS.—
16	"(1) IN GENERAL.—Except as provided in para-
17	graph (2), the Secretary shall promulgate such regu-
18	lations as necessary to carry out the provisions of
19	this section.
20	"(2) Coordination in prescription of cer-
21	TAIN REGULATIONS.—The Secretary of the Treas-
22	ury, in coordination with the Secretary of Transpor-
23	tation and the Administrator of the Environmental
24	Protection Agency, shall prescribe such regulations
25	as necessary to determine whether a motor vehicle

	40
1	meets the requirements to be eligible for a credit
2	under this section.
3	"(g) TERMINATION.—This section shall not apply to
4	any property purchased after—
5	((1) in the case of a new qualified fuel cell
6	motor vehicle (as described in subsection (b)), De-
7	cember 31, 2018, and
8	((2) in the case of a new qualified hydrogen
9	fuel motor vehicle, December 31, 2013.".
10	(b) Conforming Amendments.—
11	(1) Section 1016(a) is amended by striking
12	"and" at the end of paragraph (27), by striking the
13	period at the end of paragraph (28) and inserting ",
14	and", and by adding at the end the following new
15	paragraph:
16	"(29) to the extent provided in section
17	30B(e)(4).".
18	(2) Section $55(c)(2)$ is amended by inserting
19	"30B(d)," after "30(b)(3)".
20	(3) Section $6501(m)$ is amended by inserting
21	"30B(e)(9)," after "30(d)(4),".
22	(4) The table of sections for subpart B of part
23	IV of subchapter A of chapter 1 is amended by in-
24	serting after the item relating to section 30A the fol-
25	lowing new item:
	"Sec. 30B. Credit for fuel cell and hydrogen motor vehicles.".

45

(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.

5 SEC. 303. CREDIT FOR INSTALLATION OF HYDROGEN FUEL6 ING STATIONS.

7 (a) IN GENERAL.—Subpart B of part IV of sub8 chapter A of chapter 1 (relating to foreign tax credit, etc.),
9 as amended by this Act, is amended by adding at the end
10 the following new section:

11 "SEC. 30C. HYDROGEN-FUEL VEHICLE REFUELING PROP12 ERTY CREDIT.

13 "(a) CREDIT ALLOWED.—There shall be allowed as 14 a credit against the tax imposed by this chapter for the 15 taxable year an amount equal to 50 percent of the amount 16 paid or incurred by the taxpayer during the taxable year 17 for the installation of qualified hydrogen-fuel vehicle re-18 fueling property.

19 "(b) LIMITATION.—The credit allowed under sub-20 section (a)—

21 "(1) with respect to any retail hydrogen-fuel ve22 hicle refueling property, shall not exceed \$100,000,
23 and

"(2) with respect to any residential hydrogen fuel vehicle refueling property, shall not exceed
 \$2,500.

4 "(c) YEAR CREDIT ALLOWED.—The credit allowed
5 under subsection (a) shall be allowed in the taxable year
6 in which the qualified hydrogen-fuel vehicle refueling prop7 erty is placed in service by the taxpayer.

8 "(d) DEFINITIONS.—For purposes of this section—
9 "(1) QUALIFIED HYDROGEN-FUEL VEHICLE RE10 FUELING PROPERTY.—The term 'qualified hydrogen11 fuel vehicle refueling property' means a qualified
12 clean-fuel vehicle refueling property (as defined in
13 section 179A(d)) relating to hydrogen fuel.

14 "(2) RESIDENTIAL HYDROGEN-FUEL VEHICLE
15 REFUELING PROPERTY.—The term 'residential hy16 drogen-fuel vehicle refueling property' means quali17 fied hydrogen-fuel vehicle refueling property which is
18 installed on property which is used as the principal
19 residence (within the meaning of section 121) of the
20 taxpayer.

21 "(3) RETAIL HYDROGEN-FUEL VEHICLE RE22 FUELING PROPERTY.—The term 'retail hydrogen23 fuel vehicle refueling property' means qualified hy24 drogen-fuel vehicle refueling property which is in25 stalled on property (other than property described in

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paragraph (2)) used in a trade or business of the
 taxpayer.

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

6 "(1) the regular tax for the taxable year re7 duced by the sum of the credits allowable under sub8 part A and sections 27, 29, 30, and 30B, over

9 "(2) the tentative minimum tax for the taxable10 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).

19 "(h) REFUELING PROPERTY INSTALLED FOR TAX-20 EXEMPT ENTITIES.—In the case of qualified hydrogen-21 fuel vehicle refueling property installed on property owned 22 or used by an entity exempt from tax under this chapter, 23 the person which installs such refueling property for the 24 entity shall be treated as the taxpayer with respect to the 25 refueling property for purposes of this section (and such refueling property shall be treated as retail hydrogen-fuel
 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 and modifies the
 price of such contract to take into account the amount
 of such credit.

8 "(i) CARRYFORWARD ALLOWED.—

9 "(1) IN GENERAL.—If the credit amount allow-10 able under subsection (a) for a taxable year exceeds 11 the amount of the limitation under subsection (e) for 12 such taxable year (referred to as the 'unused credit 13 year' in this subsection), such excess shall be allowed 14 as a credit carryforward for each of the 20 taxable 15 years following the unused credit year.

16 "(2) RULES.—Rules similar to the rules of sec17 tion 39 shall apply with respect to the credit
18 carryforward under paragraph (1).

19 "(j) SPECIAL RULES.—Rules similar to the rules of20 paragraphs (4) and (5) of section 179A(e) shall apply.

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

24 "(1) TERMINATION.—This section shall not apply to25 any property placed in service after December 31, 2018.".

(b) INCENTIVE FOR PRODUCTION OF HYDROGEN AT
 QUALIFIED CLEAN-FUEL VEHICLE REFUELING PROP ERTY.—Section 179A(d) (defining qualified clean-fuel ve hicle refueling property) is amended by adding at the end
 the following new flush sentence:

6 "In the case of hydrogen, paragraph (3)(A) shall be ap7 plied by substituting 'production, storage, or dispensing'
8 for 'storage or dispensing' both places it appears.".

9 (c) CONFORMING AMENDMENTS.—(1) Section 10 1016(a), as amended by this Act, is amended by striking 11 "and" at the end of paragraph (28), by striking the period 12 at the end of paragraph (29) and inserting ", and", and 13 by adding at the end the following new paragraph:

14 "(30) to the extent provided in section15 30C(f).".

16 (2) Section 55(c)(2), as amended by this Act, is
17 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, as amended by this Act,
is amended by inserting after the item relating to section
30B the following new item:

"Sec. 30C. Hydrogen-fuel vehicle refueling property credit.".

(d) 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.

1 SEC. 304. CREDIT FOR RETAIL SALE OF HYDROGEN FUEL 2 AS MOTOR VEHICLE FUEL.

3 (a) IN GENERAL.—Subpart D of part IV of sub4 chapter A of chapter 1 (relating to business related cred5 its) is amended by inserting after section 40 the following
6 new section:

7 "SEC. 40A. CREDIT FOR RETAIL SALE OF HYDROGEN FUEL 8 AS MOTOR VEHICLE FUEL.

9 "(a) GENERAL RULE.—For purposes of section 38, 10 the hydrogen fuel retail sales credit for any taxable year 11 is the applicable amount for each gasoline gallon equiva-12 lent of hydrogen fuel sold at retail by the taxpayer during 13 such year as a fuel to propel any qualified motor vehicle, 14 but only if the taxpayer reduces the retail sales price of 15 such fuel by an equivalent amount of such credit.

16 "(b) DEFINITIONS.—For purposes of this section—
17 "(1) APPLICABLE AMOUNT.—The term 'applica18 ble amount' means as follows:

19 "(A) IN GENERAL.—Except as provided in
20 subparagraph (B), 50 cents.

21 "(B) HYDROGEN FUEL PRODUCED FROM
22 RENEWABLE SOURCES.—

23 "(i) IN GENERAL.—In the case of hy24 drogen fuel which is produced from renew25 able sources or from electricity from such
26 sources, \$1.00.

1	"(ii) Renewable sources.—For
2	purposes of this subparagraph, the term
3	'renewable sources' means solar, wind, bio-
4	mass, and geothermal.
5	"(2) GASOLINE GALLON EQUIVALENT.—The
6	term 'gasoline gallon equivalent' means, with respect
7	to hydrogen fuel, the amount (determined by the
8	Secretary) of such fuel having a Btu content of
9	114,000.
10	"(3) QUALIFIED MOTOR VEHICLE.—The term
11	'qualified motor vehicle' means any motor vehicle (as
12	defined in section $30(c)(2)$) which meets any appli-
13	cable Federal or State emissions standards with re-
14	spect to hydrogen fuel.
15	"(4) Sold at retail.—
16	"(A) IN GENERAL.—The term 'sold at re-
17	tail' means the sale, for a purpose other than
18	resale, after manufacture, production, or impor-
19	tation.
20	"(B) USE TREATED AS SALE.—If any per-
21	son uses hydrogen fuel (including any use after
22	importation) as a fuel to propel any qualified
23	hydrogen fuel motor vehicle (as defined in sec-
24	tion $30B(c)(4)$) before such fuel is sold at re-
25	tail, then such use shall be treated in the same

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manner as if such fuel were sold at retail as a fuel to propel such a vehicle by such person.

3 "(c) NO DOUBLE BENEFIT.—The amount of any de-4 duction or other credit allowable under this chapter for 5 hydrogen fuel taken into account in computing the amount 6 of the credit determined under subsection (a) shall be re-7 duced by the amount of such credit attributable to such 8 fuel.

9 "(d) PASS-THRU IN THE CASE OF ESTATES AND
10 TRUSTS.—Under regulations prescribed by the Secretary,
11 rules similar to the rules of subsection (d) of section 52
12 shall apply.

13 "(e) TERMINATION.—This section shall not apply to14 any fuel sold at retail after December 31, 2018.".

(b) CREDIT TREATED AS BUSINESS CREDIT.—Section 38(b) (relating to current year business credit) is
amended by striking "plus" at the end of paragraph (14),
by striking the period at the end of paragraph (15) and
inserting ", plus", and by adding at the end the following
new paragraph:

21 "(16) the hydrogen fuel retail sales credit deter22 mined under section 40A(a).".

23 (c) TRANSITIONAL RULE.—Section 39(d) (relating to
24 transitional rules) is amended by adding at the end the
25 following new paragraph:

"(11) NO CARRYBACK OF SECTION 40A CREDIT
BEFORE EFFECTIVE DATE.—No portion of the unused business credit for any taxable year which is
attributable to the hydrogen fuel retail sales credit
determined under section 40A(a) may be carried
back to a taxable year ending before the date of the
enactment of such section.".

8 (d) CLERICAL AMENDMENT.—The table of sections
9 for subpart D of part IV of subchapter A of chapter 1
10 is amended by inserting after the item relating to section
11 40 the following new item:

"Sec. 40A. Credit for retail sale of hydrogen fuel as motor vehicle fuel.".

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

16 SEC. 305. CREDIT FOR STATIONARY AND PORTABLE FUEL

17 **CELLS.**

18 (a) BUSINESS PROPERTY.—

(1) IN GENERAL.—Subparagraph (A) of section
48(a)(3) (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:

24 "(iii) energy-efficient building prop25 erty,".

1	(2) ENERGY-EFFICIENT BUILDING PROP-
2	ERTY.—Subsection (a) of section 48 is amended by
3	redesignating paragraphs (4) and (5) as paragraphs
4	(5) and (6), respectively, and by inserting after
5	paragraph (3) the following new paragraph:
6	"(4) Energy-efficient building prop-
7	ERTY.—For purposes of this subsection—
8	"(A) IN GENERAL.—The term 'energy-effi-
9	cient building property' means a fuel cell power
10	plant that—
11	"(i) generates electricity using an
12	electrochemical process,
13	"(ii) has an electricity-only generation
14	efficiency greater than 30 percent, and
15	"(iii) generates at least 0.5 kilowatt of
16	electricity using an electrochemical process.
17	"(B) LIMITATION.—In the case of energy-
18	efficient building property placed in service dur-
19	ing the taxable year, the credit determined
20	under paragraph (1) for such year with respect
21	to such property shall not exceed an amount
22	equal to the lesser of—
23	"(i) 30 percent (10 percent in the
24	case of taxable years beginning after 2008)
25	of the basis of such property, including ex-

1	penditures for labor costs properly allo-
2	cable to the onsite preparation, assembly,
3	or original installation of the property and
4	for piping or wiring to interconnect such
5	property, or
6	"(ii) \$1,000 (\$100 for taxable years
7	beginning after 2008) for each kilowatt of
8	capacity of such property.
9	"(C) Special rules.—For purposes of
10	subparagraph (A)(ii)—
11	"(i) Electricity-only generation
12	EFFICIENCY.—The electricity-only genera-
13	tion efficiency percentage of a fuel cell
14	power plant is the fraction—
15	"(I) the numerator of which is
16	the total useful electrical power pro-
17	duced by such plant at normal oper-
18	ating rates, and expected to be con-
19	sumed in its normal application, and
20	"(II) the denominator of which is
21	the lower heating value of the fuel
22	source for such plant.
23	"(ii) Determinations made on btu
24	BASIS.—The electricity-only generation ef-

1 ficiency percentage shall be determined on 2 a Btu basis. "(D) FUEL CELL POWER PLANT.—The 3 4 term 'fuel cell power plant' means an integrated 5 system comprised of a fuel cell stack assembly 6 and associated balance of plant components 7 that converts a fuel into electricity using elec-8 trochemical means. 9 "(E) ENERGY-EFFICIENT BUILDING PROP-10 INSTALLED FOR TAX-EXEMPT ERTY ENTI-11 TIES.—In the case of energy-efficient building 12 property installed on property owned or used by 13 an entity exempt from tax under this chapter, 14 the person which installs such building property 15 for the entity shall be treated as the taxpayer 16 with respect to the building property for pur-17 poses of this section and the credit shall be al-18 lowed to such person, but only if the person 19 clearly discloses to the entity in any installation 20 contract the specific amount of the credit allow-21 able under this section and modifies the price of 22 such contract to take into account the amount 23 of such credit.". 24

24 (3) LIMITATION.—Section 48(a)(2)(A) (relating
25 to energy percentage) is amended to read as follows:

1	"(A) IN GENERAL.—The energy percent-
2	age is—
3	"(i) in the case of energy-efficient
4	building property placed in service in tax-
5	able years beginning before January 1,
6	2009, 30 percent, and
7	"(ii) in the case of any other energy
8	property, 10 percent.".
9	(4) Conforming Amendments.—
10	(A) Section $29(b)(3)(A)(i)(III)$ is amended
11	by striking "section $48(a)(4)(C)$ " and inserting
12	"section 48(a)(5)(C)".
13	(B) Section 48(a)(1) is amended by insert-
14	ing "except as provided in paragraph (4)(B),"
15	before "the energy".
16	(5) EFFECTIVE DATE.—The amendments made
17	by this subsection shall apply to property placed in
18	service after the date of the enactment of this Act,
19	in taxable years ending after such date, under rules
20	similar to the rules of section 48(m) of the Internal
21	Revenue Code of 1986 (as in effect on the day be-
22	fore the date of the enactment of the Revenue Rec-
23	onciliation Act of 1990).
24	(b) NONDUGINEGG PRODERWY

24 (b) Nonbusiness Property.—

(1) IN GENERAL.—Subpart A of part IV of sub chapter A of chapter 1 (relating to nonrefundable
 personal credits) is amended by inserting after sec tion 25B the following new section:

5 "SEC. 25C. NONBUSINESS ENERGY-EFFICIENT BUILDING
6 PROPERTY.

7 "(a) CREDIT ALLOWED.—

8 "(1) IN GENERAL.—In the case of an indi-9 vidual, there shall be allowed as a credit against the 10 tax imposed by this chapter for the taxable year an 11 amount equal to the nonbusiness energy-efficient 12 building property expenditures which are paid or in-13 curred during such year.

14 "(2) LIMITATION.—The credit allowed under
15 paragraph (1) with respect to property placed in
16 service by the taxpayer during the taxable year shall
17 not exceed an amount equal to the lesser of—

18 "(A) 30 percent (10 percent in the case of
19 taxable years beginning after 2008) of the basis
20 of such property, or

21 "(B) \$1,000 (\$100 for taxable years begin22 ning after 2008) for each kilowatt of capacity
23 of such property.

1	"(b) Nonbusiness Energy-Efficient Building
2	PROPERTY EXPENDITURES.—For purposes of this sec-
3	tion—
4	"(1) IN GENERAL.—The term 'nonbusiness en-
5	ergy-efficient building property expenditures' means
6	expenditures made by the taxpayer for nonbusiness
7	energy-efficient building property installed on or in
8	connection with a dwelling unit—
9	"(A) which is located in the United States,
10	and
11	"(B) which is used by the taxpayer as a
12	residence.
13	Such term includes expenditures for labor costs
14	properly allocable to the onsite preparation, assem-
15	bly, or original installation of the property.
16	"(2) Nonbusiness energy-efficient build-
17	ING PROPERTY.—The term 'nonbusiness energy-effi-
18	cient building property' means energy-efficient build-
19	ing property (as defined in section $48(a)(4)$) if—
20	"(A) the original use of such property com-
21	mences with the taxpayer, and
22	"(B) such property meets the standards (if
23	any) applicable to such property under section
24	48(a)(4).

1 "(c) SPECIAL RULES.—For purposes of this sec-2 tion—

3 "(1) DOLLAR AMOUNTS IN CASE OF JOINT OC4 CUPANCY.—In the case of any dwelling unit which is
5 jointly occupied and used during any calendar year
6 as a residence by 2 or more individuals the following
7 shall apply:

8 "(A) The amount of the credit allowable, 9 under subsection (a) by reason of expenditures 10 (as the case may be) made during such cal-11 endar year by any of such individuals with re-12 spect to such dwelling unit shall be determined 13 by treating all of such individuals as 1 taxpayer 14 whose taxable year is such calendar year.

15 "(B) There shall be allowable, with respect 16 to such expenditures to each of such individ-17 uals, a credit under subsection (a) for the tax-18 able year in which such calendar year ends in 19 an amount which bears the same ratio to the 20 amount determined under subparagraph (A) as 21 the amount of such expenditures made by such 22 individual during such calendar year bears to 23 the aggregate of such expenditures made by all 24 of such individuals during such calendar year.

1	"(2) TENANT-STOCKHOLDER IN COOPERATIVE
2	HOUSING CORPORATION.—In the case of an indi-
3	vidual who is a tenant-stockholder (as defined in sec-
4	tion 216) in a cooperative housing corporation (as
5	defined in such section), such individual shall be
6	treated as having made his tenant-stockholder's pro-
7	portionate share (as defined in section $216(b)(3)$) of
8	any expenditures of such corporation.
9	"(3) Condominiums.—
10	"(A) IN GENERAL.—In the case of an indi-
11	vidual who is a member of a condominium man-
12	agement association with respect to a condo-
13	minium which the individual owns, such indi-
14	vidual shall be treated as having made his pro-
15	portionate share of any expenditures of such as-
16	sociation.
17	"(B) Condominium management asso-
18	CIATION.—For purposes of this paragraph, the
19	term 'condominium management association'
20	means an organization which meets the require-
21	ments of paragraph (1) of section $528(c)$ (other
22	than subparagraph (E) thereof) with respect to
23	a condominium project substantially all of the
24	units of which are used as residences.

1	"(4) Allocation in certain cases.—If less
2	than 80 percent of the use of an item is for nonbusi-
3	ness purposes, only that portion of the expenditures
4	for such item which is properly allocable to use for
5	nonbusiness purposes shall be taken into account.
6	"(5) When expenditure made; amount of
7	EXPENDITURE.—
8	"(A) IN GENERAL.—Except as provided in
9	subparagraph (B), an expenditure with respect
10	to an item shall be treated as made when the
11	original installation of the item is completed.
12	"(B) EXPENDITURES PART OF BUILDING
13	CONSTRUCTION.—In the case of an expenditure
14	in connection with the construction or recon-
15	struction of a structure, such expenditure shall
16	be treated as made when the original use of the
17	constructed or reconstructed structure by the
18	taxpayer begins.
19	"(C) AMOUNT.—The amount of any ex-
20	penditure shall be the cost thereof.
21	"(6) Property financed by subsidized en-
22	ERGY FINANCING.—For purposes of determining the
23	amount of nonbusiness energy-efficient building
24	property expenditures made by any individual with
25	respect to any dwelling unit, there shall not be taken

into account expenditures which are made from sub sidized energy financing (as defined in section
 48(a)(5)(C)).

4 "(d) BASIS ADJUSTMENTS.—For purposes of this 5 subtitle, if a credit is allowed under this section for any 6 expenditure with respect to any property, the increase in 7 the basis of such property which would (but for this sub-8 section) result from such expenditure shall be reduced by 9 the amount of the credit so allowed.".

- 10 (2) Conforming Amendments.—
- (A) Section 25C(c), 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 section 25D)" and inserting
 "subsection (b)(3)".

(B) Section 23(b)(4)(B) is amended by inserting "and section 25C" after "this section".
(C) Section 24(b)(3)(B) is amended by
striking "23 and 25B" and inserting "23, 25B,
and 25C".

22 (D) Section 25(e)(1)(C) is amended by in23 serting "25C," after "25B,".

1	(E) Section $25B(g)(2)$ is amended by
2	striking "section 23" and inserting "sections 23
3	and 25C''.
4	(F) Section $26(a)(1)$ is amended by strik-
5	ing "and 25B" and inserting "25B, and 25C".
6	(G) Section 904(h) is amended by striking
7	"and 25B" and inserting "25B, and 25C".
8	(H) Section 1400C(d) is amended by strik-
9	ing "and 25B" and inserting "25B, and 25C".
10	(3) Additional conforming Amend-
11	MENTS.—
12	(A) Section 23(c), as in effect for taxable
13	years beginning before January 1, 2004, is
14	amended by striking "section 1400C" and in-
15	serting "sections 25C and 1400C".
16	(B) Section $25(e)(1)(C)$, as in effect for
17	taxable years beginning before January 1,
18	2004, is amended by inserting ", 25C," after
19	"sections 23".
20	(C) Subsection (a) of section 1016, as
21	amended by this Act, is amended by striking
22	"and" at the end of paragraph (29), by striking
23	the period at the end of paragraph (30) and in-
24	serting ", and", and by adding at the end the
25	following new paragraph:

1	((31) to the extent provided in section $25C(f)$,
2	in the case of amounts with respect to which a credit
3	has been allowed under section 25C.".
4	(D) Section 1400C(d), as in effect for tax-
5	able years beginning before January 1, 2004, is
6	amended by inserting "and section 25C" after
7	"this section".
8	(E) The table of sections for subpart A of
9	part IV of subchapter A of chapter 1 is amend-
10	ed by inserting after the item relating to section
11	25B the following new item:
	"Sec. 25C. Nonbusiness energy-efficient building property.".
12	(4) Effective dates.—
13	(A) IN GENERAL.—Except as provided by
14	subparagraph (B), the amendments made by
15	this subsection shall apply to expenditures after
16	the date of the enactment of this Act, in taxable
17	years ending after such date.
18	(B) PARAGRAPH (2).—The amendments
19	made by paragraph (2) shall apply to taxable
20	years beginning after December 31, 2003.

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