108TH CONGRESS
1ST SESSION

S. 739

To reauthorize and amend the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MARCH 27, 2003

Mr. AKAKA (for himself, Mr. DOMENICI, Mr. LIEBERMAN, Mr. KYL, Mr. REID, Mr. BAYH, Mr. INOUYE, and Mr. BINGAMAN) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

---

A BILL

To reauthorize and amend the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990, and for other purposes.

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

SECTION 1. SHORT TITLE.

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

SEC. 2. 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. FINDING; PURPOSES; DEFINITIONS.

"(a) FINDING.—Congress finds that it is in the national interest to accelerate efforts to develop a domestic capability to economically produce hydrogen in quantities that will make a significant contribution toward reducing the dependence of the United States on conventional fuels.

"(b) PURPOSES.—The purposes of this Act are—

"(1) to promote a research, development, and demonstration program leading to the economical and environmentally sound production, storage, transport, and use of hydrogen as an energy source for industrial, commercial, residential, transportation, and utility applications; and

"(2) to promote and coordinate activities in technology transfer, education, and other information transfer among—

"(A) Federal, State, and local agencies;

"(B) members of the energy, transportation, and other industries;

"(C) foreign nations; and

"(D) other entities.

"(c) DEFINITIONS.—In this Act:

''(1) ADVISORY COMMITTEE.—The term 'advisory committee' means the advisory committee established by section 108(a).

''(2) CRITICAL TECHNICAL ISSUE.—The term 'critical technical issue' means an issue that, in the opinion of the Secretary, requires understanding and development in order to take the next step in the development of hydrogen as an economic fuel or storage medium.

''(3) CRITICAL TECHNOLOGY.—The term 'critical technology' means a technology that, in the opinion of the Secretary, requires understanding and development in order to take the next step in the development of hydrogen as an economic fuel or storage medium.

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

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

''SEC. 103. PLAN; REPORT.

''(a) COORDINATION PLAN.—

''(1) IN GENERAL.—The Secretary, in consultation with other Federal agencies, shall prepare a comprehensive coordination plan for activities under

this Act and under title II of the Hydrogen Future Act of 1996.

''(2) PLAN UNDER OTHER LAW.—In preparing the plan under paragraph (1), the Secretary shall take into account any plan under section 202(b) of the Hydrogen Future Act of 1996.

''(b) REPORT.—

''(1) REQUIREMENT.—Not later than 1 year after the date of enactment of the George E. Brown, Jr. and Robert S. Walker Hydrogen Future Act of 2003, and biennially thereafter, the Secretary shall submit to Congress a detailed report, based on the plan prepared under subsection (a), on the status and progress of the programs authorized under this Act.

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

''(A) an assessment of the effectiveness of the programs authorized under this Act and of the extent to which the programs are meeting the purposes specified in section 102(b);

''(B) recommendations of the advisory committee for any improvements in the pro-

gram that are needed, including recommendations for additional legislation; and

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

''SEC. 104. HYDROGEN RESEARCH AND DEVELOPMENT.

''(a) PROGRAM.—The Secretary shall conduct a research and development program relating to the production, storage, transportation, and use of hydrogen as an energy source, with the goal of enabling the private sector to demonstrate the technical feasibility of using hydrogen for industrial, commercial, residential, transportation, and utility applications.

''(b) ELEMENTS.—In conducting the program under subsection (a), the Secretary shall—

''(1) initiate or accelerate research and development in critical technical issues that will contribute to the development of more economical and environmentally sound hydrogen energy systems, including critical technical issues relating to—

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

''(B) liquefaction, transmission, and distribution;

''(C) storage, including storage of hydrogen in surface transportation; and

''(D) use, including use in—

''(i) surface transportation;

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

''(iii) fuel cells and components, including proton exchange membrane technologies; and

''(iv) foreign markets, particularly markets in which an energy infrastructure is not well developed;

''(2) give particular attention to resolving critical technical issues preventing the introduction of hydrogen as an energy source into the marketplace, so as to enable the development of voluntary consensus technical standards; and

''(3)(A) survey hydrogen energy research and development activities in the private sector worldwide; and

''(B) take steps to ensure that research and development activities under this section do not—

''(i) unnecessarily duplicate any available research and development; or

''(ii) displace or compete with the privately funded hydrogen energy research and development activities of United States industry.

''(c) RESEARCH AND DEVELOPMENT SUPPORT.—The Secretary may arrange for tests and demonstrations and disseminate to researchers and developers information, data, and other materials necessary to support the research and development activities authorized under this section and other efforts authorized under this Act, consistent with section 106.

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

''(e) COST SHARING.—

''(1) IN GENERAL.—The Secretary shall require a commitment from non-Federal sources of at least

20 percent of the cost of proposed research and development projects under this section.

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

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

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

''SEC. 105. DEMONSTRATIONS.

''(a) IN GENERAL.—The Secretary shall conduct demonstrations of critical technologies so that technical and nontechnical parameters can be evaluated to best determine commercial applicability of such technologies.

''(b) REQUIREMENT.—Demonstrations under subsection (a) shall include fuel cells and fuel cell components (including proton exchange membrane technologies) for commercial, residential, and transportation applications, using improved manufacturing production and processes.

''(c) DEMONSTRATIONS WITH RESEARCH AND DEVELOPMENT ACTIVITIES.—Concurrently with activities conducted under section 104, the Secretary shall conduct

small-scale demonstrations of hydrogen energy technology at self-contained sites.

''(d) COST SHARING.—

''(1) IN GENERAL.—The Secretary shall require a commitment from non-Federal sources of at least 50 percent of the costs directly relating to a demonstration under this section.

''(2) REDUCTION.—The Secretary may reduce the non-Federal requirement under paragraph (1) if the Secretary determines that the reduction is appropriate considering the technological risks involved in the project.

''SEC. 106. TECHNOLOGY ASSESSMENT AND TRANSFER.

''(a) PROGRAM.—

''(1) IN GENERAL.—The Secretary shall conduct a program designed to transfer critical technologies to the private sector, including application in foreign countries to increase the global market for the technologies and foster global development without harmful environmental effects.

''(2) ADVICE AND ASSISTANCE.—The Secretary shall direct the program under paragraph (1) with the advice and assistance of the advisory committee.

''(b) INFORMATION.—

''(1) IN GENERAL.—The Secretary, in carrying out the program under subsection (a), shall—

''(A) undertake an update of the inventory and assessment of hydrogen energy technologies and the commercial capability of the technologies to economically produce, store, transport, and use hydrogen as an energy source in the industrial, commercial, residential, transportation, and utility sectors; and

''(B) develop with the National Aeronautics and Space Administration, other Federal agencies as appropriate, and industry an information exchange program to improve technology transfer for hydrogen energy technologies.

''(2) ACTIVITIES.—The information exchange program—

''(A) may consist of workshops, publications, conferences, and a database for the use by the public and private sectors; and

''(B) shall include activities to foster the exchange of generic, nonproprietary information and technology, developed under this Act, among industry, academia, and the Federal Government, to help the United States economy

attain the economic benefits of this information and technology.

"SEC. 107. COORDINATION AND CONSULTATION.

"(a) RESPONSIBILITY OF THE SECRETARY.—The Secretary shall have overall management responsibility for carrying out programs under this Act.

"(b) REQUIREMENTS.—In carrying out the programs under this Act, the Secretary, consistent with the overall management responsibility of the Secretary—

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

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

"(c) ASSISTANCE.—

"(1) IN GENERAL.—The Secretary may, in accordance with subsection (b), obtain the assistance of any Federal agency on written request, on a reimbursable basis or otherwise and with the consent of such agency.

''(2) IDENTIFICATION OF ASSISTANCE.—Each such request shall identify the assistance the Secretary considers necessary to carry out any duty under this Act.

''(d) CONSULTATION.—The Secretary shall consult with other Federal agencies as appropriate, and the advisory committee, in carrying out the authorities of the Secretary under this Act.

''SEC. 108. ADVISORY COMMITTEE.

''(a) ESTABLISHMENT.—There is established the Hydrogen Technical Advisory Committee.

''(b) MEMBERSHIP.—

''(1) IN GENERAL.—The advisory committee—

''(A) shall be comprised of not fewer than 9 nor more than 15 members appointed by the Secretary; and

''(B) shall be comprised of such representatives from domestic industry, universities, professional societies, Government laboratories, and financial, environmental, and other organizations as the Secretary considers appropriate based on an assessment by the Secretary of the technical and other qualifications of such representatives.

''(2) TERMS.—

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

"(B) STAGGERED TERMS.—The Secretary may appoint members of the advisory committee in a manner that allows the terms of the members serving at any time to expire at spaced intervals so as to ensure continuity in the functioning of the advisory committee.

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

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

"(c) DUTIES.—The advisory committee shall advise the Secretary on the programs under this Act and under title II of the Hydrogen Future Act of 1996.

"(d) COOPERATION.—The heads of Federal agencies—

"(1) shall cooperate with the advisory committee in carrying out of this section; and

"(2) shall furnish to the advisory committee such information as the advisory committee considers necessary to carry out this section.

''(e) REVIEW.—The advisory committee shall review and make any necessary recommendations to the Secretary concerning—

''(1) the implementation of programs under this Act;

''(2) the economic, technological, and environmental consequences of the deployment of technologies for the production, storage, transportation, and use of hydrogen as an energy source; and

''(3) the coordination plan prepared by the Secretary under section 103 and the plan developed by the interagency task force under section 202(b) of the Hydrogen Future Act of 1996.

''(f) RESPONSE TO RECOMMENDATIONS.—

''(1) IN GENERAL.—The Secretary shall consider, but need not adopt, any recommendations of the advisory committee under subsection (e).

''(2) REPORT.—The Secretary shall describe the implementation, or provide an explanation of the reasons that any such recommendations will not be implemented, in the report to Congress under section 103(b).

''(g) SUPPORT.—The Secretary shall provide such staff, funds, and other support as are necessary to enable

the advisory committee to carry out the duties of the advisory committee.

''(h) DURATION.—The advisory committee shall remain in existence for the duration of the programs under this Act.

''SEC. 109. NATIONAL ACADEMY OF SCIENCES REVIEW.

''Beginning 2 years after the date of the enactment of this section, and every 4 years thereafter, the National Academy of Sciences shall—

''(1) conduct a review of the progress made through the programs and activities authorized under this Act and title II of the Hydrogen Future Act of 1996; and

''(2) submit to Congress a report that describes the results of the review.

''SEC. 110. AUTHORIZATION OF APPROPRIATIONS.

''There are authorized to be appropriated to carry out this Act (in addition to any amounts made available for the purpose under other Acts)—

''(1) $3,000,000 for fiscal year 1992;

''(2) $7,000,000 for fiscal year 1993;

''(3) $10,000,000 for fiscal year 1994;

''(4) $14,500,000 for fiscal year 1996;

''(5) $20,000,000 for fiscal year 1997;

''(6) $25,000,000 for fiscal year 1998;

''(7) $30,000,000 for fiscal year 1999;

''(8) $35,000,000 for fiscal year 2000;

''(9) $40,000,000 for fiscal year 2001;

''(10) $45,000,000 for fiscal year 2002;

''(11) $50,000,000 for fiscal year 2003;

''(12) $55,000,000 for fiscal year 2004;

''(13) $60,000,000 for fiscal year 2005;

''(14) $65,000,000 for fiscal year 2006; and

''(15) $70,000,000 for fiscal year 2007.''.

SEC. 3. HYDROGEN FUTURE ACT AMENDMENT.

The Hydrogen Future Act of 1996 is amended by striking title II (42 U.S.C. 12403 note) and inserting the following:

''TITLE II—FUEL CELLS

''SEC. 201. INTEGRATION OF FUEL CELLS WITH HYDROGEN SYSTEMS.

''(a) IN GENERAL.—The Secretary shall solicit proposals for projects demonstrating hydrogen technologies needed to use fuel cells in Federal, State, and local government stationary and transportation applications.

''(b) COMPETITIVE EVALUATION.—

''(1) IN GENERAL.—Each proposal submitted in response to the solicitation under this section shall be evaluated on a competitive basis using peer review.

''(2) NO REQUIREMENT TO MAKE AWARD.—The Secretary is not required to make an award under this section in the absence of a meritorious proposal.

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

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

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

''(d) NON-FEDERAL SHARE.—

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

''(2) REDUCTION.—The Secretary may reduce the non-Federal requirement under paragraph (1) if the Secretary determines that the reduction is appropriate considering the technological risks involved in the project.

''SEC. 202. INTERAGENCY TASK FORCE.

''(a) ESTABLISHMENT.—Not later than 120 days after the date of enactment of the George E. Brown, Jr.

and Robert S. Walker Hydrogen Future Act of 2003, the Secretary shall establish an interagency task force led by a designee of the Secretary and comprised of representatives of—

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

''(2) the Department of Transportation;

''(3) the Department of Defense;

''(4) the Department of Commerce (including the National Institute of Standards and Technology);

''(5) the Environmental Protection Agency;

''(6) the National Aeronautics and Space Administration; and

''(7) other Federal agencies as appropriate.

''(b) DUTIES.—

''(1) DEVELOPMENT OF PLAN.—The task force shall develop a plan for carrying out this title.

''(2) FOCUS OF PLAN.—The plan shall focus on development and demonstration of integrated systems and components for—

''(A) the production, storage, transport, and use of hydrogen as an energy source for Federal, State, and local government stationary and transportation applications;

''(B) hydrogen-based infrastructure for buses and other fleet transportation systems that include zero-emission vehicles; and

''(C) hydrogen-based distributed power generation, including the generation of combined heat, power, and hydrogen.

''SEC. 203. COOPERATIVE AND COST-SHARING AGREEMENTS.

''The Secretary shall enter into cooperative and cost-sharing agreements with Federal, State, and local agencies for participation by the agencies in demonstrations at facilities administered by the agencies, with the aim of integrating high-efficiency hydrogen systems using fuel cells into the facilities to provide near-term benefits and promote a smooth transition to hydrogen as an energy source.

''SEC. 204. INTEGRATION AND DISSEMINATION OF TECHNICAL INFORMATION.

''The Secretary shall—

''(1) integrate all the technical information available as a result of development and demonstration projects under this title;

''(2) make the information available to all interested persons; and

''(3) foster the exchange of generic, nonproprietary information and technology developed under

this title among industry, academia, and Federal, State, and local governments, to help the United States economy attain the economic benefits of the information and technology.

"SEC. 205. AUTHORIZATION OF APPROPRIATIONS.

"There are authorized to be appropriated to the Secretary to carry out activities under this title—

"(1) $5,000,000 for fiscal year 2003;

"(2) $25,000,000 for fiscal year 2004;

"(3) $30,000,000 for fiscal year 2005;

"(4) $35,000,000 for fiscal year 2006; and

"(5) $40,000,000 for fiscal year 2007.".

○