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104TH CONGRESS, 1st Session | HOUSE OF REPRESENTATIVES | REPORT 104–95

HYDROGEN FUTURE ACT OF 1995

MARCH 30, 1995.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. WALKER, from the Committee on Science, submitted the following

R E P O R T

together with

THE TRANSCRIPT FROM THE LEGISLATIVE MARKUP OF THE SCIENCE COMMITTEE

and

ADDITIONAL VIEWS

[To accompany H.R. 655]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, to whom was referred the bill (H.R. 655) to authorize hydrogen basic research, development, and demonstration programs of the Department of Energy, and for other purposes, having considered the same, report favorably thereon with amendments and recommend that the bill as amended do pass.

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I. AMENDMENTS

The amendments are as follows:

Strike out all after the enacting clause and insert in lieu thereof the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the "Hydrogen Future Act of 1995".

SEC. 2. FINDINGS.

The Congress finds that—

(1) fossil fuels, the main energy source of the present, have provided this country with tremendous supply but are limited and polluting;

(2) additional basic research and development are needed to encourage private sector investment in development of new and better energy sources and enabling technologies;

(3) hydrogen holds tremendous promise as a fuel, because it can be extracted from water and can be burned much more cleanly than conventional fuels;

(4) hydrogen production efficiency is a major technical barrier to society collectively benefiting from one of the great energy sources of the future;

(5) an aggressive, results-oriented, multiyear research initiative on efficient hydrogen fuel production and use should continue; and

(6) the current Federal effort to develop hydrogen as a fuel is inadequate.

SEC. 3. PURPOSES.

The purposes of this Act are—

(1) to provide for a basic research, development, and demonstration program leading to the production, storage, transport, and use of hydrogen for industrial, residential, transportation, and utility applications; and

(2) to provide for advice from academia and the private sector in the implementation of the Department of Energy hydrogen research, development, and demonstration program to ensure that economic benefits of the program accrue to the United States.

SEC. 4. DEFINITIONS.

For purposes of this Act—

(1) the term "demonstration" means a validation of the technical feasibility of a theory or process;

(2) the term "Department" means the Department of Energy; and

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

SEC. 5. RESEARCH AND DEVELOPMENT.

(a) AUTHORIZED ACTIVITIES.—Pursuant to this section, the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 and the Energy Policy Act of 1992, and in accordance with the purposes of this Act, the Secretary shall provide for a hydrogen energy research, development, and demonstration program relating to production, storage, transportation, and use of hydrogen, with the

goal of enabling the private sector to demonstrate the technical feasibility of using hydrogen for industrial, residential, transportation, and utility applications. In establishing priorities for Federal funding under this section, the Secretary shall survey private sector hydrogen activities and take steps to ensure that activities under this section do not displace or compete with the privately funded hydrogen activities of United States industry.

(b) SCHEDULE.—Within 180 days after the date of the enactment of the later of this Act or an act providing appropriations for programs authorized by this Act, the Secretary shall solicit proposals from all interested parties (including the Department's laboratories) for carrying out the research, development, and demonstration activities authorized under this section. Within 180 days after such solicitation, if the Secretary identifies proposals worthy of Federal assistance, financial assistance shall be awarded under this section competitively, using peer review of proposals with appropriate protection of proprietary information. The Secretary shall use appropriations authorized by this Act that are not allocated for such awards to carry out research, development, and demonstration activities in accordance with the purposes of this Act.

(c) COST SHARING.—(1) Except as otherwise provided in section 6, for research and development proposals funded under this Act, the Secretary shall require a commitment from non-Federal sources of at least 20 percent of the cost of the proposed program. The Secretary may reduce or eliminate the non-Federal requirement under this paragraph if the Secretary determines that the research and development is of such a purely basic or fundamental nature that a non-Federal commitment is not obtainable.

(2) The Secretary shall require at least 50 percent of the costs directly and specifically related to any demonstration project under this Act to be provided from non-Federal sources. The Secretary may reduce the non-Federal requirement under this paragraph if the Secretary determines that the reduction is necessary and appropriate considering the technological risks involved in the project and is necessary to serve the purposes and goals of this Act.

(3) In calculating the amount of the non-Federal commitment under paragraph (1) of (2), the Secretary shall include cash, and the fair market value of personnel, services, equipment, and other resources.

(d) CERTIFICATIONS.—Before financial assistance is provided under this section or the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990—

(1) the Secretary must certify that providing such financial assistance is consistent with the Agreement on Subsidies and Countervailing Measures described in section 771(8) of the Tariff Act of 1930 (19 U.S.C. 1677(8)); and

(2) industry participants must certify that they have made reasonable efforts to obtain non-Federal funding for the entire cost of the project, and that such non-Federal funding could not be reasonably obtained.

(e) DUPLICATION OF PROGRAMS.—The Secretary shall not carry out any activities under this section that unnecessarily duplicate activities carried out elsewhere by the Federal Government or the private sector.

SEC. 6. HIGHLY INNOVATIVE TECHNOLOGIES.

Of the amounts made available for carrying out section 5, up to 5 percent shall be used to support research on highly innovative energy technologies. Such amounts shall not be subject to the cost sharing requirements in section 5(c).

SEC. 7. TECHNOLOGY TRANSFER.

The Secretary shall foster the exchange of generic, nonproprietary information and technology, developed pursuant to section 5, among industry, academia, and the Federal Government. The Secretary shall ensure that economic benefits of such exchange of information and technology will accrue to the United States economy.

SEC. 8. REPORTS TO CONGRESS.

Within 18 months after the date of the enactment of this Act, and annually thereafter, the Secretary shall transmit to the Congress a detailed report on the status and progress of the Department's hydrogen research and development program. Such report shall include an analysis of the effectiveness of such program, to be prepared and submitted by the Hydrogen Technical Advisory Panel established under section 108 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990. Such Panel shall also make recommendations for improvements to such program if needed, including recommendations for additional legislation.

SEC. 9. COORDINATION AND CONSULTATION.

(a) COORDINATION WITH OTHER FEDERAL AGENCIES.—The Secretary shall coordinate all hydrogen research and development activities within the Department, and with the activities of other Federal agencies involved in similar research and development, including the Department of Defense, the Department of Transportation, and the National Aeronautics and Space Administration. Further, the Secretary shall pursue opportunities for cooperation with such Federal entities.

(b) CONSULTATION.—The Secretary shall consult with the Hydrogen Technical Advisory Panel established under section 108 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 as necessary in carrying out this Act.

SEC. 10. AUTHORIZATION OF APPROPRIATIONS.

(a) GENERAL AUTHORIZATION.—There are authorized to be appropriated, to carry out the purposes of this Act—

(1) $25,000,000 for fiscal year 1996;

(2) $35,000,000 for fiscal year 1997; and

(3) $40,000,000 for fiscal year 1998.

(b) RELATED AUTHORIZATIONS.—(1) For each of the fiscal years 1996, 1997, and 1998, the total amount which may be obligated for Energy Supply Research and Development Activities shall not exceed the total amount obligated for such activities in fiscal year 1995.

(2) Paragraph (1) of this subsection does not authorize the appropriation of any Federal funds.

Amend the title so as to read:

A bill to authorize basic research, development, and demonstration on hydrogen as a fuel, and for other purposes.

II. PURPOSE OF THE BILL

The purpose of the bill is to authorize appropriations for fiscal years 1996, 1997, and 1998 for basic hydrogen research, development, and demonstration programs of the Department of Energy, and for other purposes.

III. BACKGROUND AND NEED FOR THE LEGISLATION

In 1989 Congress passed the Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989, P.L. 101–218, to foster greater efficiency in the use of available energy supplies and greater use of renewable energy technologies. The Act directed the Secretary of Energy to: pursue cost competitive use of renewable energy technologies without the need of Federal financial incentives; establish long-term Federal research goals and multi-year funding goals; undertake initiatives to improve the ability of the private sector to commercialize in the near term renewable energy and energy efficiency technologies; and, foster collaborative research and development efforts involving the private sector through government support of a program of joint ventures.

The Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989 authorized a number of energy research and development programs, including hydrogen. In fact, P.L. 101–218 required a separate, autonomous hydrogen program be established and delineated in the budget. Hydrogen activities, however, were loosely administered by the Department of Energy and hydrogen research and development was never given the priority and programmatic self-sufficiency which Congress intended.

A coordinated Federal program for hydrogen research, development, and demonstration was established by passage of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstra-

tion Program Act of 1990, P.L. 101–566. The Act set forth guidelines to carry out a Federal program with the goal of resolving critical technical issues necessary for the development of hydrogen technologies. The funding authorization for the Act expired in FY 1994.

A supplemental legislative initiative for hydrogen research, development, and demonstration was included in Section 2026 of the Energy Policy Act of 1992, P.L. 102–486. The provisions reinforced the five-year program on renewable hydrogen energy contained in P.L. 101–566 and required collaborative projects with industry to test and evaluate the production of hydrogen from a renewable energy source and to assess the feasibility of modifying existing natural gas pipelines to transport hydrogen and natural gas mixtures.

H.R. 655, the Hydrogen Future Act of 1995, continues to support a hydrogen research program by focusing the program on basic research and development. The need to continue with a multi-year Department of Energy (DOE) hydrogen program authorization is important in view of the need to provide long term stable funding for basic research programs.

IV. Summary of Hearing

On February 1, 1995, the Committee on Science held a hearing on the provisions of H.R. 655, the Hydrogen Future Act of 1995. The witnesses for the hearing included: The Honorable Christine A. Ervin, Assistant Secretary, Energy Efficiency and Renewable Energy, U.S. Department of Energy; Dr. Alan C. Lloyd, Chief Scientist, South Coast Air Quality Management District; Mr. Edward Trlica, President, Energy Partners, Inc.; and, Dr. Robert H. Williams, Senior Research Scientist, Center for Energy and Environmental Studies, Princeton University.

Secretary Ervin testified that the Department of Energy supports the major thrust of the legislation, but that DOE finds some provisions too restrictive. Secretary Ervin identified the following provisions as problematic for the Department: the number and types of demonstration projects contained in Section 5; the repeal of Sections 104 and 105 of the Spark M. Matsunaga Research, Development, and Demonstration Program Act of 1990 contained in Section 10; the set-aside of percentages of appropriated funding for specific types of demonstration projects and the limitation on authorizations contained in Section 11.

Dr. Lloyd testified that he would like to see the bill amended to achieve more leveraging of outside funds. Dr. Lloyd described ideas for hydrogen corridor projects, such as one being developed in Southern California. Dr. Lloyd also recommended the creation of a Hydrogen Energy Office and the formation of a Hydrogen Industry Consortium. Dr. Lloyd testified that he was supportive of the bill.

Mr. Trlica testified that he was very supportive of the bill. Mr. Trlica described the achievements which his company had made in developing the "Green Car" which is powered by Proton Exchange Membrane fuel cells. Mr. Trlica also testified to the importance of Federal basic research to entrepreneurs in the development of new technologies.

Dr. Williams testified concerning the large growth in energy demand expected in developing countries in the coming years. Dr.

Williams suggested that energy R&D is not a large portion of Federal R&D when compared to other accounts. Dr. Williams noted that declining private R&D spending in the oil industry tended to hurt hydrogen development, particularly because certain personnel in the oil industry have the background and skills needed for the nascent hydrogen industry. Dr. Williams suggested that the future energy supply portfolio should place increasing emphasis on smaller, modular technologies. Dr. Williams also recommended that imposing a modest tax on pollution effluents would be a more effective environmental policy than regulatory options.

V. Committee Actions

FULL COMMITTEE MARKUP

On February 8, 1995, the Science Committee convened to mark up H.R. 9, the Wage Enhancement and Job Creation Act, and H.R. 655, the Hydrogen Future Act. The Science Committee recessed at 11:20 p.m. that night after approving H.R. 9, subject to the call of the Chair, and reconvened on February 10, 1995, to commence the mark up of H.R. 655. At that time, Chairman Walker offered an Amendment in the Nature of a Substitute that refocused the bill on basic research and development activities. The Substitute was, without objection, considered original text for mark up purposes.

Of the 15 amendments offered, 11 were adopted by voice vote, 2 were withdrawn, and 2 were defeated by roll call votes.

1. Mr. Traficant offered an en bloc amendment to Sections 3 and 5 which provides for advice from academia and the private sector in implementing DOE's hydrogen program and also requires that the Secretary ensure that the activities authorized under this bill provide economic benefits to the United States. The amendment was adopted by voice vote.

2. Mr. Doyle offered an amendment to Section 2 to strike language which referred to fossil technologies as "mature" technologies. The amendment was adopted by voice vote.

3. Mr. Olver offered an amendment to Section 2 to strike language referring to "basic scientific fundamentals" and replacing those words with "additional research and development." After an amendment by the Chairman to the Olver amendment to add the word "basic" before the word "research" was accepted, the amendment was adopted by voice vote.

4. Mr. Olver offered another amendment to Section 2 to change the description of hydrogen from an "energy source" to a "fuel." The amendment was adopted by voice vote.

5. Mr. Olver offered an amendment to Section 3 to add the word "demonstration" to the Purposes of the bill. After an amendment by the Chairman to the Olver amendment to add the word "basic" before the word "research" was accepted, the Olver amendment was adopted by voice vote.

6. Mr. Cramer offered an en bloc amendment to Sections 3 and 5 to add the words "demonstration of processes and technologies." After some discussion regarding other amendments to the bill which would accomplish this, Mr. Cramer asked for, and received, unanimous consent to withdraw his amendment.

7. Mr. Brown offered an amendment to Section 5 to add reference to the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Program Act of 1990, and the Energy Policy Act of 1992. The amendment also added demonstration programs as an authorized activity under the bill and language requiring that the Secretary survey the private sector to ensure that hydrogen activities at DOE would not displace, nor compete with, United States industry activities. The amendment was adopted by voice vote.

8. Mr. Walker offered an en bloc amendment to Sections 4 and 5. The first part of the amendment adds a limiting definition of the word "demonstration" to the bill to prevent economic feasibility demonstrations or prototypes. The second part of the amendment adds a fifty percent cost share requirement for demonstration projects. The amendment was adopted by voice vote.

9. Mr. Graham offered an amendment to Section 9 to require the Secretary to coordinate all hydrogen activities within DOE and to coordinate those activities with those of other agencies. The amendment also directs the Secretary to pursue opportunities for cooperation in hydrogen research and development with other Federal entities. The amendment was adopted by voice vote.

10. Ms. Jackson-Lee offered an en bloc amendment to Sections 5 and 7. The first part of the amendment clarifies the date for the Secretary to solicit proposals: the later of either 180 days after enactment of the bill, or an Act providing appropriations for the bill. The amendment also adds clarifying language that specifically includes Department laboratories in the term "interested parties." There was a Chairman's amendment to the Jackson-Lee amendment accepted to conform the language in the amendment with other language in the bill. The second part of the amendment struck the words "or under other similar Federal programs" to clarify the intent of Section 7 that the Secretary of Energy is only responsible for technology transfer of DOE funded hydrogen research. The en bloc amendment as amended was adopted by voice vote.

11. Mr. Luther and Mr. Olver offered an amendment to Sections 5 and 6 to strike language in Section 5 and to strike Section 6 which refers to "highly innovative technologies." The amendment was withdrawn by unanimous consent.

12. Mr. Roemer offered an amendment to Section 5 to add the words "and the fair market value of" to the cost sharing section regarding non-Federal personnel, services, equipment, and other resources. By unanimous consent, an amendment by Mr. Brown to stipulate that any financial assistance provided under the bill be consistent with GATT, and be provided only if private or other non-Federal funding could not be obtained, was added to the Roemer amendment. Further, another amendment by Mr. Roemer stipulating that the Secretary shall not duplicate hydrogen programs already being carried out by the Federal government or the private sector, was added to the amendments and they were considered en bloc and adopted by voice vote.

13. Mr. Brown offered an amendment to Section 10 to strike subsection (b) which limits the total amount which may be obligated for fiscal years 1996, 1997, and 1998 for Energy Supply Research and Development Activities at DOE to the total amount obligated

for those activities in fiscal year 1995. The amendment was defeated by roll call vote: Yeas—15, Nays—21.

14. Mr. Olver then offered an amendment to Section 10 to reduce authorized funding levels for hydrogen activities. The amendment was defeated by roll call vote: Yeas—13, Nays—23.

15. Mr. Brown offered an amendment to the title of the bill adding the word "demonstration." After a Chairman's amendment to the Brown amendment was accepted, which added the word "basic" before the word "research," the amendment was adopted by voice vote.

With a quorum present, Mr. Brown moved that the Committee report the substitute, as amended, to the House with the recommendation that it pass and that the staff prepare the legislative report and make technical and conforming changes and that all Members have three days to file separate, dissenting, or additional views. The motion was adopted by voice vote.

VI. Summary of Major Provisions of the Bill

The bill focuses the hydrogen program of the Department of Energy on basic research, development, and demonstration.

The bill limits demonstration to validations of the technical feasibility of theories or processes.

The bill requires 20% cost sharing for the research and development under the bill and 50% cost sharing for demonstrations.

The bill provides that up to 5 percent of the amounts made available for carrying out the programs under the bill may be used to support research on highly innovative energy technologies with no cost sharing requirement.

The bill requires certification that any financial assistance given under the bill could not be obtained in the private sector and must be consistent with the Agreement on Subsidies and Countervailing Measures described in section 771(8) of the Tariff Act of 1930 (19 U.S.C. 1677(8)).

The bill prohibits increased Federal spending by requiring the $100 million provided for hydrogen research, four times the current level by FY 1998, come out of other DOE programs by "freezing" the total amount which may be obligated for Energy Supply Research and Development Activities of the Department of Energy for fiscal years 1996, 1997, and 1998 at the total amount obligated for those activities in fiscal year 1995.

VII. Section-by-Section Analysis

SECTION 1. SHORT TITLE

Cites the Act as the "Hydrogen Future Act of 1995".

SECTION 2. FINDINGS

Congress finds that fossil fuels are limited and polluting. Basic research and development are needed for private sector investment and development of new and better energy sources and enabling technologies. Hydrogen holds tremendous promise as a fuel, because it can be extracted from water and can be burned much more cleanly than conventional fuels. Hydrogen production efficiency is

a major technical barrier to society collectively benefitting from one of the great energy sources of the future. An aggressive, results-oriented, multi-year research initiative on efficient hydrogen fuel production and use should continue. Current Federal efforts to develop hydrogen as a fuel are inadequate.

SECTION 3. PURPOSES

To provide for basic research, development, and demonstration leading to the production, storage, transportation, and use of hydrogen; and to provide for advice from academia and the private sector during each stage of the hydrogen research and development program to ensure that economic benefits accrue to the United States.

SECTION 4. DEFINITIONS

Defines: "demonstration" as validation of the technical feasibility of a theory or process; "Department" as the Department of Energy; and, "Secretary" as the Secretary of Energy.

SECTION 5. RESEARCH, DEVELOPMENT, AND DEMONSTRATION.

Subsection (a)—Authorized activities

Outlines the activities of the program as research, development, and demonstration relating to production, storage, transportation, and use of hydrogen with the goal of enabling the private sector to demonstrate the technical feasibility of efficiently utilizing hydrogen for transportation, industrial, residential, and utility applications. In establishing the funding priorities, the Secretary shall survey private sector hydrogen activities to ensure that activities under the Act do not duplicate or compete.

Subsection (b)—Schedule

Within 180 days of enactment of this Act or an Act providing appropriations for the Act, the Secretary shall solicit proposals for carrying out the R&D activities authorized under this section. Awards of financial assistance shall be made within 180 days after the solicitation. Awards shall be competitive, using peer review. If appropriations authorized by the Act are not allocated for awards, then the Secretary shall carry out research, development, and demonstration activities in accordance with the purposes of this Act.

Subsection (c)—Cost sharing

Paragraph (1) Except for Section 6, the Secretary shall require a commitment from non-Federal sources of at least 20% of the cost of research and development programs. This requirement may be reduced or eliminated if the Secretary determines that the R&D is of such a purely basic or fundamental nature that a non-Federal commitment is not obtainable.

Paragraph (2) The Secretary shall require a commitment from non-Federal sources of at least 50% of the cost of demonstration projects. This requirement may be reduced or eliminated if the Secretary determines the technological risks are great.

Paragraph (3) In calculating the amount of the non-Federal commitment under paragraph (1), the Secretary shall include cash, and

the fair market value of personnel, services, equipment, and other resources.

Subsection (d)—Certifications

States that before financial assistance can be provided, the Secretary must certify that the agreement is consistent with GATT provisions. Industry participants must also certify that they have made reasonable efforts to obtain non-Federal funding.

Subsection (e)—Duplication of programs

States that the Secretary shall not carry out unnecessarily duplicative activities now being carried out by the Federal government or private sector.

SECTION 6. HIGHLY INNOVATIVE TECHNOLOGIES

States that of the amounts made available for carrying out section 5, up to 5% shall be used to support research on highly innovative energy technologies, and shall not be subject to cost sharing requirements in section 5(c).

SECTION 7. TECHNOLOGY TRANSFER

Directs the Secretary to foster the exchange of generic, nonproprietary information and technology developed pursuant to section 5, among industry, academia, and the Federal government.

SECTION 8. REPORTS TO CONGRESS

Within 18 months after the date of enactment of this Act, and annually thereafter, the Secretary shall transmit to the Congress a detailed report on the status and progress of the Department's hydrogen R&D program; to include an analysis of the effectiveness of such programs prepared and submitted by the Hydrogen Technical Advisory Panel. The Panel shall also make recommendations for improvements to such programs, if needed, including additional legislation.

SECTION 9. COORDINATION AND CONSULTATION

(a) The Secretary shall work to coordinate all DOE hydrogen activities within the Department and with other Federal agencies, including the Department of Defense, the Department of Transportation, and NASA. (b) The Secretary shall also consult the Hydrogen Technical Advisory Panel as necessary in carrying out this Act.

SECTION 10. AUTHORIZATION OF APPROPRIATIONS

(a) Authorizes $25 million for FY 1996, $35 million for FY 1997, and $40 million for FY 1998 for the basic hydrogen energy R&D called for under this bill. (b) For each fiscal year 1996, 1997, 1998 the total amount which may be obligated for Energy Supply R&D Activities (which includes hydrogen energy R&D) shall not exceed the FY 1995 level. This limitation does not authorize the appropriation of any Federal funds.

VIII. Committee Views

SECTION 1—SHORT TITLE

It is the Committee's view that hydrogen could and should be a significant part of the national energy mix in the 21st century. The Committee, therefore, refers to the bill as the Hydrogen Future Act of 1995.

SECTION 2—FINDINGS

The Committee recognizes that fossil fuels, which have provided the United States with tremendous energy supply, are polluting, and that generally their production and use technologies are mature. The Committee believes, therefore, that the Federal Government must now turn its research and development to new energy sources, emphasizing basic research which will delve into the structures, functions, and interactions involving matter and energy and their phenomena. The Committee also believes that a basic research and development program is the prerequisite to provide the basic scientific understanding and technical fundamentals necessary to justify private sector investment in the development, demonstration, and commercialization of new, better and increased energy supply and enabling technologies.

The Committee believes that one of the most promising new energy supplies is hydrogen. Hydrogen holds tremendous potential as a fuel because it has a source in, and combusts predominantly back to, water. However, efficient production, whether extraction from water or another source, is a major technical barrier to using hydrogen and, therefore, an aggressive, multi-year basic research initiative on production and use is needed.

SECTION 3—PURPOSES

The Committee believes that a basic research, development, and demonstration program making possible the private sector production, storage, transport, and use of hydrogen is justified as a collective good. The Committee believes that the demonstrations called for in the bill should be technical demonstrations validating fundamental scientific theories and processes. The Committee does not believe that the Department of Energy's hydrogen program should be involved in financing commercial prototypes or doing economic feasibility demonstrations.

SECTION 4—DEFINITIONS

The Committee defines the term "demonstration" as the validation of the technical feasibility of a theory or process. It is the Committee's intent that any demonstrations funded under the authority of this bill should be proof-of-concept demonstrations. Demonstration projects which attempt to build commercial prototypes or to test the economic feasibility of a technology or product shall not be funded under this bill.

SECTION 5—RESEARCH AND DEVELOPMENT

The Committee believes that an aggressive hydrogen research and development program should be supported by DOE. The Com-

mittee directs that the purposes of the bill, in conjunction with the authorized activities of the bill, require a basic research, development, and demonstration program that will encourage business investment in the efficient production, storage, transportation, and use of this fuel. The Committee further believes that the goal of DOE's hydrogen research and development program is to enable the private sector to demonstrate the economic feasibility of using hydrogen for industrial, residential, transportation, and utility applications.

The Committee directs that DOE's activities in the program should not cover, displace, nor compete with those activities now funded by the private sector. The Committee instructs the Secretary to survey what the private sector is doing in hydrogen research and take steps to ensure that those activities are not duplicated by DOE.

The Committee directs that DOE's hydrogen program should be a competitive, peer reviewed process. It is the Committee's intention that the Secretary solicit proposals for the hydrogen program from all interested parties, including industry, universities, and Federal laboratories. This section also emphasizes the Committee's intent that in the peer review process appropriate measures should be taken to insure the protection of proprietary information. It is also the Committee's intention that, if funds appropriated pursuant to this bill are not allocated through grants or outside awards, then the Secretary should ensure that such activities, in accordance with the purposes of the bill, are conducted by the DOE labs.

It is the Committee's view that basic research and development programs should be cost-shared by at least a 20 percent non-Federal contribution. The Committee also believes that demonstration projects should be cost-shared by at least 50 percent. Cost-sharing provisions in research and development programs serve two purposes: they shield the Federal government from bearing the total cost of a project, including discouraging overruns; and, they ensure that companies which develop a process or theory under a contract or cooperative agreement are serious about commercializing that knowledge into a technology.

Corporations are profit-making entities. Given a research contract without a cost-share, some companies have been known to work to make their profit from the endeavor out of the government contract rather than the eventual profits of the product. As long as contract research remains profitable, the incentive to seek market profit will be limited. Cost-sharing alters the corporate view of research, focusing on the success of the research as the profit motive, and not the government-as-satisfied customer. It is the Committee's view that when companies with similar qualifications are competing for a government project, that the company willing to carry out the largest cost-share should be given preference.

The Committee also believes that before any financial assistance is awarded under the bill, the Secretary should "certify" that the financial assistance award is consistent with the provisions of the General Agreement on Tariffs and Trade and industry should "certify" that any financial assistance awarded to industry cannot be obtained in the private financial markets or in any other way.

SECTION 6—HIGHLY INNOVATIVE TECHNOLOGIES

The Committee believes it has a unique and very creative opportunity to make highly innovative energy research and development possible. There has been a tendency at the Department of Energy, as develops in all large bureaucracies, to award financial assistance to industries or persons which have had an ongoing working relationship with DOE. Over the years, this has meant that people with new ideas have sometimes been unable to get a fair and impartial hearing on their "different" ideas and developments. This is in part due to the fact that sometimes new ideas do not fit into preconceived government policy or research direction, or because they defy the "conventional wisdom" (often wrong) even though feasible and intriguing.

This section, the Committee believes, is an effort to assure that persons working in singular efforts, who do not represent large corporations, laboratories, or universities, who are not part of the status quo, and do not have contracts or an established business relationship with DOE, will have the opportunity to interact with DOE and its resources and facilities. It is usually persons working independently that have ideas and theories that are fresh and rather bold, and not necessarily the mainstream.

The Committee directs that the cost-sharing requirements of section 5(c) not apply to projects funded under Section 6. Cost-sharing, the Committee believes, may unilaterally exclude "bootstrap" ideas, and this counters the Committee's intention with regard to this section. The Committee wishes to ensure that there are alternative avenues available to individual researchers that are generally outside the scope of traditional funding.

SECTION 7—TECHNOLOGY TRANSFER

The Committee believes that the Secretary should make every effort to foster the exchange of generic, nonproprietary information developed under the bill among industry, academia and other agencies of the Federal Government. The Committee believes one of the purposes of Federal involvement in R&D is the dissemination of information to the private sector for the public good.

SECTION 8—REPORTS TO CONGRESS

It is the Committee's intent that the Secretary, within 18 months of the date of enactment of the bill, transmit to the Congress a report on the status of DOE's hydrogen program. The Committee has also requested, as part of this report, an analysis by the Hydrogen Technical Advisory Panel (HTAP) of the effectiveness of the program. The Committee also asks that the HTAP include suggestions to improve the program and make suggestions for any legislative changes which may be useful.

SECTION 9—COORDINATION AND CONSULTATION

The Committee directs the Secretary to efficiently and effectively coordinate all hydrogen programs within DOE. This coordination should involve both civilian and defense programs within DOE. The Committee recognizes that there are multiple programs within DOE, as well as other agencies, that conduct hydrogen R&D. In

particular, "compartmentalization" within DOE has resulted in little or no coordination of hydrogen R&D activities within the Department. The DOE Defense Programs Office is one example of a division conducting hydrogen R&D that has not been adequately coordinated with the activities of the DOE Office of Energy Efficiency and Renewable Energy. The Secretary should also, where possible, coordinate DOE's programs with other agencies' programs.

SECTION 10—AUTHORIZATION OF APPROPRIATIONS

The Committee believes in the priority of hydrogen research within the overall DOE Energy Supply Research and Development account. It is the goal of the Committee to increase the funding for hydrogen research over the next three years, but not at the expense of increasing the budget deficit. The Committee believes that a change in the priorities of DOE is justified and that during the Congressional authorization and appropriation process choices must be made. The Committee chooses to make hydrogen a priority over the next three years within the limits of a DOE Energy Supply Research and Development Activities authorization cap.

The Congressional Budget Office officially confirms that the intent of the Committee is effectively achieved by documenting in its cost estimate for H.R. 655, dated February 16, 1995, "[h]ence, spending for hydrogen research could increase without increasing overall spending on energy supply research and development."

IX. PROGRAM CRITERIA

The Committee states that the activities authorized by this Act are consistent with the six criteria below and intends they be implemented accordingly.

1. Federal R&D should be focused on long-term, non-commercial research and development, with potential for great scientific discovery, leaving economic feasibility and commercialization to the marketplace.
2. Federal funding of R&D on specific processes and technologies should not be carried out beyond demonstration of technical feasibility, requiring significant additional investment for production.
3. Revolutionary new ideas and pioneering capabilities that make possible the "impossible" (that which has never been done before) should be pursued.
4. The Federal government should avoid funding research in areas that are receiving, or should be reasonably expected to obtain funding from the private sector, such as evolutionary advances or incremental improvements.
5. Government-owned laboratories should confine their in-house research to areas in which their technical expertise and facilities have no peer and should contract out other research to industry, private research foundations, and universities.
6. All R&D programs should be relevant and tightly focused to the agency's stated mission; those that are not should be terminated. All research programs should disseminate the results of the programs to potential users.

X. Congressional Budget Office Analysis and Cost Estimates

U.S. Congress,
Congressional Budget Office,
Washington, DC, February 16, 1995.

Hon. Robert S. Walker,
Chairman, Committee on Science,
House of Representatives, Washington, DC.

Dear Mr. Chairman: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 655, the Hydrogen Future Act of 1995.

Enactment of H.R. 655 would not affect direct spending or receipts. Therefore, pay-as-you-go procedures would not apply to the bill.

If you wish further details on this estimate, we will be pleased to provide them.

Sincerely,

James L. Blum
(For Robert D. Reischauer, Director).

Enclosure.

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

1. Bill number: H.R. 655.
2. Bill title: Hydrogen Future Act of 1995.
3. Bill status: As ordered reported by the House Committee on Science on February 10, 1995.
4. Bill purpose: H.R. 655 would authorize the Department of Energy to conduct basic research, development, and demonstration activities for use of hydrogen as a fuel. The bill would authorize funding for these activities for fiscal years 1996 through 1998. In addition, the bill includes language setting a cap on total obligations for energy supply research and development activities, which currently includes hydrogen research as well as activities for other energy sources. H.R. 655 would limit the 1996, 1997, and 1998 obligations for energy supply activities to no more than the amount obligated in fiscal year 1995.
5. Estimated cost to the Federal Government: The bill authorizes the amounts shown in the following table. Outlay estimates are based on historical spending rates for energy supply research and development activities.

[By fiscal years, in millions of dollars]

	1996	1997	1998	1999	2000
Authorization Level	25	35	40	.....	.....
Estimated Outlays	13	26	34	19	8

The costs of this bill fall within budget function 270.

6. Comparison with spending under current law: H.R. 655 would authorize increases in spending for hydrogen research of $15 million in fiscal year 1996, $25 million in 1997, and $30 million in 1998, above the 1995 appropriated level of $10 million. The bill also contains a provision limiting obligations for energy supply research and development activities, of which the hydrogen program is a component. This restriction would limit 1996, 1997, and 1998

obligations for energy supply to no more than the amount of obligations in fiscal year 1995. Hence, spending for hydrogen research could increase without increasing overall spending on energy supply research and development. Both the funding for hydrogen research and the total funding for energy supply activities would ultimately depend on appropriation action.

7. Pay-as-you-go considerations: None.
8. Estimated cost to State and local governments: None.
9. Estimate comparison: None.
10. Previous CBO estimate: None.
11. Estimate prepared by: Pete Fontaine.
12. Estimate approved by: Paul N. Van de Water, Assistant Director for Budget Analysis.

XI. Effect of Legislation on Inflation

In accordance with rule XI, clause 2(l)(4) of the Rules of the House of Representatives, this legislation is assumed to have no inflationary effect on prices and costs in the operation of the national economy.

XII. OVERSIGHT FINDINGS AND RECOMMENDATIONS

Clause 2(l)(3)(A) of rule XI requires each committee report to contain oversight findings and recommendations required pursuant to clause 2(b)(1) of rule X. The Committee has no oversight findings.

XIII. Oversight Findings and Recommendations by the Committee on Government Reform and Oversight

Clause 2(l)(3)(D) of rule XI requires each committee report to contain a summary of the oversight findings and recommendations made by the Government Reform and Oversight Committee pursuant to clause 4(c)(2) of rule X, whenever such findings have been timely submitted. The Committee on Science has received no such findings or recommendations from the Committee on Government Reform and Oversight.

XIV. Changes in Existing Law Made by the Bill, as Reported

If enacted, this bill would make no change in existing law.

XV. Committee Recommendations

On February 10, 1995, a quorum being present, the Committee favorably reported the bill, H.R. 655, as amended, by voice vote, and recommends its enactment.

XVI. PROCEEDINGS FROM FULL COMMITTEE MARKUP

FULL COMMITTEE MARKUP ON H.R. 655—TO AUTHORIZE THE HYDROGEN RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAMS OF THE DEPARTMENT OF ENERGY, AND FOR OTHER PURPOSES

FRIDAY, FEBRUARY 10, 1995

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
Washington, DC.

The committee met, pursuant to call, at 12:55 p.m., in Room 2318 of the Rayburn House Office Building, the Honorable Robert S. Walker, chairman of the committee, presiding.

The CHAIRMAN. The Chair calls the markup to order.

The process here is a continuation of the markup previously, to move on to the markup of H.R. 655, the Hydrogen Future Act of 1995.

[H.R. 655 follows:]

I

104TH CONGRESS
1ST SESSION

H. R. 655

To authorize the hydrogen research, development, and demonstration programs of the Department of Energy, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 24, 1995

Mr. WALKER introduced the following bill; which was referred to the Committee on Science

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A BILL

To authorize the hydrogen research, development, and demonstration programs of the Department of Energy, 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 "Hydrogen Future Act of 1995".

SEC. 2. FINDINGS.

The Congress finds that—

(1) fossil fuels, the main energy source of the present, have provided this country with tremendous

1 supply but are limited and polluting, and their pro-
2 duction and utilization technologies are mature;
3 (2) the basic scientific fundamentals are needed
4 for private sector investment and development of
5 new and better energy sources and enabling tech-
6 nologies;
7 (3) hydrogen holds tremendous promise as a
8 new and better energy source because it secures a
9 practically infinite supply from water and combusts
10 purely to water;
11 (4) hydrogen production efficiency is a major
12 technical barrier to society collectively benefitting
13 from one of the great energy sources of the future;
14 (5) an aggressive, results-oriented, multiyear re-
15 search initiative on efficient hydrogen fuel produc-
16 tion and use should continue; and
17 (6) the current Federal effort to develop hydro-
18 gen as a fuel is inadequate.
19 **SEC. 3. PURPOSES.**
20 The purposes of this Act are—
21 (1) to provide for the research and development
22 of the basic scientific fundamentals, and the dem-
23 onstration of the processes and technologies, needed
24 to produce, store, transport, and utilize hydrogen for

1 transportation, industrial, residential, and utility ap-
2 plications; and
3 (2) to foster industry participation during each
4 stage of the Department of Energy hydrogen re-
5 search, development, and demonstration program to
6 ensure that technology transfer to the private sector
7 occurs to develop viable, marketable products.

8 **SEC. 4. DEFINITIONS.**

9 For purposes of this Act—
10 (1) the term "demonstration" means a dem-
11 onstration to determine technical feasibility;
12 (2) the term "Department" means the Depart-
13 ment of Energy; and
14 (3) the term "Secretary" means the Secretary
15 of Energy.

16 **SEC. 5. RESEARCH, DEVELOPMENT, AND DEMONSTRATION.**

17 (a) PROGRAM GOAL.—The goal of the program de-
18 scribed in this section is the demonstration of the technical
19 feasibility of efficiently utilizing hydrogen for transpor-
20 tation, industrial, residential and utility applications by
21 the year 2000.
22 (b) PRODUCTION.—The Secretary shall support hy-
23 drogen energy production research and development in the
24 following areas, leading to at least 2 technical demonstra-
25 tions in each such area:

1 (1) Chemical conversion, including
2 photoproduction.
3 (2) Bioconversion.
4 (3) Electrolysis.
5 (c) STORAGE.—The Secretary shall support research
6 and development of safe and economical storage of hydro-
7 gen, both for onboard vehicle and stationary use. Such re-
8 search and development should be aimed at improving ex-
9 isting methods and developing new approaches in each of
10 the following areas, leading to at least 1 technical dem-
11 onstration in each such area:
12 (1) Hydrides and porous materials.
13 (2) Liquefaction and cryogenics.
14 (3) Compressed gas.
15 (4) Advanced methods, such as microspheres
16 and new materials.
17 (d) TRANSPORTATION.—The Secretary shall support
18 research and development of efficient, hydrogen-based
19 transportation vehicles of the following types, leading to
20 at least 1 technical demonstration of each such type:
21 (1) An economically feasible, low emission
22 motor vehicle using hydrogen, in pure form or mixed
23 with other fuels, as a combustible power supply.
24 (2) An economically feasible, zero emission
25 motor vehicle using hydrogen.

1 (e) OTHER USES.—The Secretary shall support hy-
2 drogen energy research and development for each of the
3 following uses, leading to at least 1 technical demonstra-
4 tion in each such area:
5 (1) Electricity generation using hydrogen as a
6 fuel source for utility and industrial applications.
7 (2) Heating and cooling using hydrogen.
8 (3) Hydrogen fuel jet engine.
9 (f) SCHEDULE.—Within 180 days after the date of
10 enactment of this Act, the Secretary shall solicit proposals
11 for carrying out the research and development activities
12 authorized under this section. Awards of financial assist-
13 ance shall be made within 1 year after such date of enact-
14 ment.
15 (g) COST SHARING.—(1) Except as otherwise pro-
16 vided in section 6, for research and development programs
17 carried out under this Act, the Secretary shall require a
18 commitment from non-Federal sources of at least 20 per-
19 cent of the cost of the project. The Secretary may reduce
20 or eliminate the non-Federal requirement under this para-
21 graph if the Secretary determines that the research and
22 development is of a basic or fundamental nature.
23 (2) The Secretary shall require at least 50 percent
24 of the costs directly and specifically related to any dem-
25 onstration project under this Act to be provided from non-

1 Federal sources. The Secretary may reduce the non-Fed-
2 eral requirement under this paragraph if the Secretary de-
3 termines that the reduction is necessary and appropriate
4 considering the technological risks involved in the project
5 and is necessary to serve the purposes and goals of this
6 Act.

7 (3) In calculating the amount of the non-Federal
8 commitment under paragraph (1) or (2), the Secretary
9 shall include cash, personnel, services, equipment, and
10 other resources.

11 (h) DUPLICATION OF PROGRAMS.—Nothing in this
12 Act shall require the duplication of activities carried out
13 under otherwise authorized programs of the Department.

14 **SEC. 6. HIGHLY INNOVATIVE TECHNOLOGIES.**

15 Of the amounts made available for carrying out sec-
16 tion 5, up to 5 percent shall be used to support research
17 on highly innovative energy technologies. Such amounts
18 shall not be subject to the cost sharing requirements in
19 section 5(g).

20 **SEC. 7. TECHNOLOGY TRANSFER.**

21 The Secretary shall foster the exchange of generic,
22 nonproprietary information and technology developed pur-
23 suant to section 5, or other similar Federal programs,
24 among industry, academia, and the Federal Government.

1 **SEC. 8. REPORTS TO CONGRESS.**

2 Within 18 months after the date of enactment of this
3 Act, and annually thereafter, the Secretary shall transmit
4 to the Congress a detailed report on the status and
5 progress of the Department's hydrogen research, develop-
6 ment, and demonstration programs. Such report shall in-
7 clude an analysis of the effectiveness of such programs,
8 to be prepared and submitted by the Hydrogen Technical
9 Advisory Panel established under section 108 of the Spark
10 M. Matsunaga Hydrogen Research, Development, and
11 Demonstration Act of 1990. Such Panel shall also make
12 recommendations for improvements to such programs if
13 needed, including recommendations for additional legisla-
14 tion.

15 **SEC. 9. COORDINATION AND CONSULTATION.**

16 (a) COORDINATION WITH OTHER FEDERAL AGEN-
17 CIES.—The Secretary shall coordinate all hydrogen re-
18 search, development, and demonstration activities with
19 other Federal agencies involved in similar research, devel-
20 opment, and demonstration, including the Department of
21 Defense and the National Aeronautics and Space Adminis-
22 tration.

23 (b) CONSULTATION.—The Secretary shall consult
24 with the Hydrogen Technical Advisory Panel established
25 under section 108 of the Spark M. Matsunaga Hydrogen

1 Research, Development, and Demonstration Act of 1990
2 as necessary in carrying out this Act.

3 **SEC. 10. REPEAL.**

4 Sections 104 and 105 of the Spark M. Matsunaga
5 Hydrogen Research, Development, and Demonstration Act
6 of 1990 are repealed.

7 **SEC. 11. AUTHORIZATION OF APPROPRIATIONS.**

8 (a) GENERAL AUTHORIZATION.—There are author-
9 ized to be appropriated, to carry out the purposes of this
10 Act, in addition to any amounts made available for such
11 purposes under other Acts—

12 (1) $25,000,000 for fiscal year 1996;
13 (2) $35,000,000 for fiscal year 1997; and
14 (3) $40,000,000 for fiscal year 1998.

15 (b) USE OF APPROPRIATIONS.—Of the amounts ap-
16 propriated under subsection (a) for each fiscal year—

17 (1) 30 percent shall be used for programs
18 under section 5(b);
19 (2) 20 percent shall be used for programs
20 under section 5(c);
21 (3) 30 percent shall be used for programs
22 under section 5(d); and
23 (4) 20 percent shall be used for programs
24 under section 5(e).

1 (c) RELATED AUTHORIZATIONS.—(1) For each of the
2 fiscal years 1996, 1997, and 1998, the total amount which
3 may be obligated for Energy Supply Research and Devel-
4 opment Activities shall not exceed the total amount obli-
5 gated for such activities in fiscal year 1995.
6 (2) Paragraph (1) of this subsection does not author-
7 ize the appropriation of any Federal funds.

The CHAIRMAN. This particular Bill is one that has been in the process of evolution for a couple of Congresses, and was subject to the hearing by the Committee last Wednesday.

At that point, we received testimony from the Department of Energy, the science community, and the private sector.

We heard some criticisms on the Bill and comments from members of the Committee.

And we have attempted to respond to those comments and those criticisms by making some good faith changes in the Bill.

The main criticism that had arisen was the demonstration projects in the Bill that some people felt moved us too far away from the concept of basic research and basic science, and so we did try to modify that in some regard.

I've now looked over the package of amendments and I notice that people want to put demonstrations back in various forms. I think we're going to try to accommodate some of that in what we do today in a general way, but not go to the specifics.

As always, I'm willing to work with members of the Committee, and we've worked out some of these details, and I'm going to consider language to put the concept of demonstrations back into the Bill.

And then what we want to do is try to define it to be the technical validations of the basic R&D, rather than the fullblown prototypes and economic feasibilities.

I want to clarify, though, that the idea here is to maintain this as a research and development Bill.

Let me remind all members that the passage of this Bill will not, as it's written, result in one dime of increased Government spending because of the overall cap that we've put on the Energy R&D accounts.

If we spend more for hydrogen, it means that other accounts would have to be cut. We're not in this case trying to expand the spending. We're trying to reprioritize the spending within the Energy R&D accounts.

I am prepared to respond to a list of amendments that I know are here, and we will look forward to that in the next few minutes.

And I now would recognize Mr. Brown.

Mr. BROWN. Thank you very much, Mr. Chairman.

Let me first apologize for the fact that I left the markup on Wednesday evening. Frankly, I haven't gotten adjusted to the new regime.

When I used to leave a Committee meeting, it adjourned, but I found in this case, it didn't.

[Laughter.]

Mr. BROWN. I apologize for that.

Mr. Chairman, I have a brief opening statement which reiterates my support for the basic program involved in this Bill, but points out that there are a few minor problems that I have with it, which I hope we'll be able to work out in connection with the markup.

I ask unanimous consent that my full statement appear in the record at this point.

The CHAIRMAN. Without objection.

[The prepared statement of Representative Brown follows:]

HYDROGEN FUTURE ACT MARK UP
OPENING STATEMENT OF THE
HONORABLE GEORGE E. BROWN, JR.
February 10, 1995

Today we will consider the Hydrogen Future Act of 1995, a relatively non-controversial bill that I'd like to support. I'm an unabashed fan of the potential for a hydrogen economy, and I'd like to a see targeted research, development, and demonstration programs to develop the technology and infrastructure that the United States will need to utilize hydrogen as a fuel.

The bill before us today touches on many of the problems that the Nation will face if it chooses to pursue a hydrogen economy; and Mr. Walker is to be commended for approaching such a technical and far-reaching problem in one of his first pieces of legislation as a new Member of the Majority. However, the bill also has a number of flaws that I'd like to see rectified, if it is to have my full support.

Complicating matters is that the Amendment in the Nature of a Substitute departs in many important ways from the bill as introduced. I'm not sure why these changes were made, especially since they seem to contradict the consensus of witness testimony received just last week. But as a consequence, I, and my Democratic Colleagues, plan to offer amendments to rectify those problems.

One radical departure in the Walker Substitute from the bill as introduced is the lack of authority for the Secretary of

Energy to conduct demonstration programs for hydrogen technologies. Instead, the Walker Substitute focuses on basic research on hydrogen. Based on the witness testimony, I think that the emphasis is misapplied, although I am hopeful that Mr. Walker will be amenable to correcting the balance of this program to include demonstration projects.

A second major problem with the Substitute is the cap on Energy Supply R&D expenditures. I strongly opposed such caps last year, and during the hearing on hydrogen last week. But, now that the President's budget has been released, I'm even more opposed to such a cap. The cap would result in a $250 million cut in the President's budget request for Energy Supply R&D. And, I simply cannot condone that policy, especially since the Committee has held NO hearings this Congress on the subject.

I sincerely hope that we can resolve some of these problems in today's mark up. And, I look forward to working with my Colleagues on both sides of the aisle to produce a hydrogen bill that we can all support.

Mr. BROWN. And I ask unanimous consent that the opening statement of Representative Karen McCarthy be inserted in the record at this point.

The CHAIRMAN. Without objection.

[The prepared statement of Representative McCarthy follows:]

KAREN McCARTHY
6TH DISTRICT, MISSOURI

Congress of the United States
House of Representatives
Washington, DC 20515–2505

STATEMENT OF REPRESENTATIVE KAREN MCCARTHY
COMMITTEE ON SCIENCE; MARK-UP OF H.R. 655
FEBRUARY 8, 1995

Mr. Chairman, I have found the hearings and discussion surrounding consideration of H.R. 655 informative and enlightening. The future of new energy sources is as limitless as the applications for each new source. We will eventually find uses for alternative energy sources--such as hydrogen--in our homes, our cars, our airplanes, and our places of work.

As intriguing as I found our look into the future, Mr. Chairman, I am concerned with the direction that alternative fuels research will take under this bill. I agree that the role of this panel, and indeed the entire Government, in the advancement of scientific research is worthy of examination. We can, and should, be a partner in research efforts. In rare instances the Government should be willing to accept a leadership role in research if the private sector is unwilling or unable to proceed in a critical area.

Actions by previous Congresses and public pronouncements by our current leadership would seem to indicate that government involvement in scientific research is an accepted practice. I doubt, though, that the highly prescriptive structure of the original bill would be conducive to useful research and development or the creation of viable public-private partnerships. I similarly doubt that the Chairman's substitute, with its reliance on basic research, will do much to advance hydrogen as a fuel for the next century.

Our focus should always be directed towards the future, towards achieving the next advance in whatever scientific field we are considering. Does H.R. 655 allow us to build on a hundred years or more of serious research into the properties and uses of hydrogen? The February 3rd redraft of H.R. 655 does not meet this simple test.

Rather than striking a middle course between satisfaction of remaining basic research needs and preparing for future uses of hydrogen, this bill has lurched blindly from one goal to another. During the remainder of the 104th Congress, I hope we remain true to our commitment to examine and advance scientific inquiry. I hope and trust that we will be more successful in keeping our eye on our original purpose than we have during consideration of H.R. 655.

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Mr. BROWN. Mr. Chairman, I have a parliamentary inquiry.

The CHAIRMAN. The gentleman will state his inquiry.

Mr. BROWN. Would it be in order, Mr. Chairman, for me to move to reconsider the vote by which the risk bill was voted out in my absence on Wednesday?

The CHAIRMAN. That motion would be in order, I would say to the gentleman, but you can't make the motion. It would have to be made by somebody who voted.

Mr. BROWN. Somebody that I persuaded to make on my behalf.

The CHAIRMAN. Somebody who voted against the Bill in final passage could in fact make that motion.

Mr. BROWN. Well, I just raised the point, Mr. Chairman. As you know, it's easy to correct this problem by having a motion to reconsider tabled, and maybe next time you should do that.

The CHAIRMAN. I thank the Chair for that.

Mr. BROWN. And I have no further comments.

The CHAIRMAN. I thank the Chair—I thank the gentleman.

Are there other members that which to make opening statements on the Bill?

[No response.]

The CHAIRMAN. If not, the Chair has asked the Clerk to place before each member an amendment in the nature of the Substitute, and without objection, the paper before us will be considered as the original text.

[Walker Substitute to HR 655 follows:]

AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 655 OFFERED BY MR. WALKER

Strike all after the enacting clause and insert in lieu thereof the following:

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the "Hydrogen Future Act
3 of 1995".

4 **SEC. 2. FINDINGS.**

5 The Congress finds that—

6 (1) fossil fuels, the main energy source of the
7 present, have provided this country with tremendous
8 supply but are limited and polluting, and their pro-
9 duction and use technologies are mature;

10 (2) the basic scientific fundamentals are needed
11 for private sector investment and development of
12 new and better energy sources and enabling tech-
13 nologies;

14 (3) hydrogen holds tremendous promise as a
15 cleaner and better energy source, because it com-
16 busts predominantly to water;

17 (4) hydrogen production efficiency is a major
18 technical barrier to society collectively benefitting
19 from one of the great energy sources of the future;

1 (5) an aggressive, results-oriented, multiyear re-
2 search initiative on efficient hydrogen fuel produc-
3 tion and use should continue; and
4 (6) the current Federal effort to develop hydro-
5 gen as a fuel is inadequate.

6 **SEC. 3. PURPOSES.**

7 The purposes of this Act are—
8 (1) to provide for research and development on
9 the basic scientific fundamentals needed to produce,
10 store, transport, and use hydrogen for industrial,
11 residential, transportation, and utility applications;
12 and
13 (2) to foster industry participation in the hy-
14 drogen research and development program described
15 in paragraph (1) to ensure that technology transfer
16 to the private sector occurs to enable the develop-
17 ment of viable, marketable products.

18 **SEC. 4. DEFINITIONS.**

19 For purposes of this Act—
20 (1) the term "Department" means the Depart-
21 ment of Energy; and
22 (2) the term "Secretary" means the Secretary
23 of Energy.

1 **SEC. 5. RESEARCH AND DEVELOPMENT.**

2 (a) AUTHORIZED ACTIVITIES.—Pursuant to this sec-
3 tion and in accordance with the purposes of this Act, the
4 Secretary shall provide for hydrogen energy research and
5 development relating to production, storage, transpor-
6 tation, and use, with the goal of enabling the private sec-
7 tor to demonstrate the technical feasibility of efficiently
8 using hydrogen for industrial, residential, transportation,
9 and utility applications by the year 2000.

10 (b) SCHEDULE.—Within 180 days after the date of
11 the enactment of this Act, the Secretary shall solicit pro-
12 posals for carrying out the research and development ac-
13 tivities authorized under this section. Within 1 year after
14 the date of the enactment of this Act, financial assistance
15 shall be awarded under this section competitively, after
16 peer review of proposals. Research and development activi-
17 ties authorized under subsection (a) for which suitable
18 proposals are not received under this subsection shall be
19 carried out by the Secretary.

20 (c) COST SHARING.—(1) Except as otherwise pro-
21 vided in section 6, for research and development proposals
22 funded under this Act, the Secretary shall require a com-
23 mitment from non-Federal sources of at least 20 percent
24 of the cost of the proposed program. The Secretary may
25 reduce or eliminate the non-Federal requirement under
26 this paragraph if the Secretary determines that the re-

1 search and development is of such a purely basic or fun-
2 damental nature that a non-Federal commitment is not
3 obtainable.

4 (2) In calculating the amount of the non-Federal
5 commitment under paragraph (1), the Secretary shall in-
6 clude cash, personnel, services, equipment, and other re-
7 sources.

8 (d) DUPLICATION OF PROGRAMS.—Nothing in this
9 Act shall require the duplication of activities carried out
10 under otherwise authorized programs of the Department.

11 **SEC. 6. HIGHLY INNOVATIVE TECHNOLOGIES.**

12 Of the amounts made available for carrying out sec-
13 tion 5, up to 5 percent shall be used to support research
14 on highly innovative energy technologies. Such amounts
15 shall not be subject to the cost sharing requirements in
16 section 5(c).

17 **SEC. 7. TECHNOLOGY TRANSFER.**

18 The Secretary shall foster the exchange of generic,
19 nonproprietary information and technology developed pur-
20 suant to section 5, or under other similar Federal pro-
21 grams, among industry, academia, and the Federal Gov-
22 ernment.

23 **SEC. 8. REPORTS TO CONGRESS.**

24 Within 18 months after the date of the enactment
25 of this Act, and annually thereafter, the Secretary shall

1 transmit to the Congress a detailed report on the status
2 and progress of the Department's hydrogen research and
3 development program. Such report shall include an analy-
4 sis of the effectiveness of such program, to be prepared
5 and submitted by the Hydrogen Technical Advisory Panel
6 established under section 108 of the Spark M. Matsunaga
7 Hydrogen Research, Development, and Demonstration Act
8 of 1990. Such Panel shall also make recommendations for
9 improvements to such program if needed, including rec-
10 ommendations for additional legislation.

11 SEC. 9. COORDINATION AND CONSULTATION.

12 (a) COORDINATION WITH OTHER FEDERAL AGEN-
13 CIES.—The Secretary shall coordinate all hydrogen re-
14 search and development activities with other Federal agen-
15 cies involved in similar research and development, includ-
16 ing the Department of Defense, the Department of Trans-
17 portation, and the National Aeronautics and Space Ad-
18 ministration.

19 (b) CONSULTATION.—The Secretary shall consult
20 with the Hydrogen Technical Advisory Panel established
21 under section 108 of the Spark M. Matsunaga Hydrogen
22 Research, Development, and Demonstration Act of 1990
23 as necessary in carrying out this Act.

1 **SEC. 10. AUTHORIZATION OF APPROPRIATIONS.**

2 (a) GENERAL AUTHORIZATION.—There are author-
3 ized to be appropriated, to carry out the purposes of this
4 Act—

5 (1) $25,000,000 for fiscal year 1996;

6 (2) $35,000,000 for fiscal year 1997; and

7 (3) $40,000,000 for fiscal year 1998.

8 (b) RELATED AUTHORIZATIONS.—(1) For each of
9 the fiscal years 1996, 1997, and 1998, the total amount
10 which may be obligated for Energy Supply Research and
11 Development Activities shall not exceed the total amount
12 obligated for such activities in fiscal year 1995.

13 (2) Paragraph (1) of this subsection does not author-
14 ize the appropriation of any Federal funds.

Amend the title to read as follows: "A bill to authorize basic research and development on hydrogen as a future energy source, and for other purposes.".

Mr. BROWN. Mr. Chairman, reserving the right to object.

The CHAIRMAN. The gentleman reserves the right to object.

Mr. BROWN. I merely wish to point out that what you do here by the step that you've taken is to allow for one additional level of amendments, as I understand it. And in view of the fact that we have a number of amendments on our side, this would mean that you could amend our amendments.

I find that you really have no intention of doing that, as far as I can tell, and I therefore raise no objection.

The CHAIRMAN. I thank the gentleman.

And the reason why I tried to do that, and we can of course do it as a Substitute, but I found it was just the opposite way last time, that there were some people on your side that had amendments to amendments and we weren't able to accommodate them because they were third degree amendments at that point, and so——

Mr. BROWN. We don't have to be consistent, Mr. Chairman.

The CHAIRMAN. I thank the gentleman.

At this point then, the Bill is open for amendments, and we have a roster of amendments.

And Mr. Traficant is recognized for an en bloc amendment.

Mr. TRAFICANT. Mr. Chairman, I have an amendment marked #2A, and I don't know if it's before all the members. If it's not, while it's being distributed, I'd ask unanimous consent that I can explain the amendment.

The CHAIRMAN. The Clerk will distribute the amendment and the gentleman will go ahead with his explanation.

Mr. TRAFICANT. Basically, what it says on page 2, lines 13 through 17, I would amend paragraph [2] to read as follows:

"[2] to provide for advice from academia and the private sector in the implementation of the Department of Energy hydrogen research development and demonstration program to ensure that economic benefits of the program accrue to the United States."

On page 4, line 22, insert "The Secretary shall ensure that economic benefits of such exchange of information and technology will accrue to the United States economy" after "and the Federal Government."

Just let me say this and be very brief.

My amendment ensures that the principal economic benefits of the program accrue to our economy, and that is language that we were able to get in Section 1317 of the fiscal '94 Department of Defense Authorization Bill. It is the law of the land for two years in that area. It doesn't rewrite and reinvent the wheel.

And I think it strengthens the Bill.

And with that, I yield back my time, Mr. Chairman.

The CHAIRMAN. I thank the gentleman for his explanation. The Chair is prepared to accept the amendment.

The Chair would ask unanimous consent that a typographical error that occurs on line 5 be corrected in the word "that."

But the Chair is prepared to accept the amendment.

Is there any other discussion on the amendment?

[No response.]

The CHAIRMAN. If not, the Chair would put the question.

Those in favor will say aye.

[Chorus of ayes.]
The CHAIRMAN. Those opposed will say no.
[No response.]
The CHAIRMAN. The ayes have it. The amendment is approved.
[Traficant Amendment 2A follows:]

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MR. TRAFICANT

Page 2, lines 13 through 17, amend paragraph (2) to read as follows:

(2) to provide for advice from academia and the private sector in the implementation of the Department of Energy hydrogen research, development and demonstration program to ensure that economic benefits of the program accrue to the United States.

Page 4, line 22, insert "The Secretary shall ensure theat economic benefits of such exchange of information and technology will accrue to the United States economy." after "and the Federal Government."

The CHAIRMAN. Mr. Doyle has an amendment.

Mr. DOYLE. Thank you, Mr. Chairman.

My amendment seeks to strike the finding which characterizes fossil fuels as mature.

On page 1, lines 8 and 9, strike ''and their production and use technologies are mature.''

I don't believe there's any need for this finding in the Bill. I don't understand why we'd be characterizing this one aspect of our Energy R&D.

I've heard nothing in the hearings that have led us to believe that fossil fuel R&D is mature, nor does this legislation seek to characterize our other Energy R&D undertakings.

The meaning of this characterization is unclear. Its presence in this legislation serves no useful purpose and its removal would only add value to this Bill.

I urge the adoption of this amendment and yield back the balance of my time.

The CHAIRMAN. Well, I thank the gentleman.

The original language put in the Bill is a statement of fact, both the coal technology and oil have been in use in the country since the 19th century, but if the gentleman is concerned about the language and feels that it has some problem with it, the Chair is prepared to accept the amendment to strike the language.

Mr. BROWN. Mr. Chairman, if I might just comment. You are correct. I feel that these are mature technologies.

However, I know that there are many members of this Committee and many members of the House who represent coal and oil production regions who would like to think that additional R&D, and in fact it's very possible that additional R&D will contribute to both lowering the economic cost and improving the environmental benefits and so forth, and would therefore support R&D.

I think the gentleman's amendment will probably gain support for this Bill too, in a number of areas.

The CHAIRMAN. I thank the Chair. And that was just the gentleman's opinion. Mr. Doyle discussed this with me in advance, and you know, I think that it does add to the Bill in an attempt to reprioritize some of the efforts within the Bill. This was an attempt to get the Energy Department to understand why some reprioritization was necessary.

But I think the gentleman has offered a reasonable amendment and we're prepared to accept it.

Any other discussion on the amendment?

[No response.]

The CHAIRMAN. If not, the Chair will put the question.

Those in favor of the amendment will say aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed, no.

[No response.]

The CHAIRMAN. The ayes have it. The amendment is agreed to.

[Doyle amendment to the Walker Substitute follows:]

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MR. DOYLE

Page 1, lines 8 and 9, strike ", and their production and use technologies are mature".

The CHAIRMAN. The next amendment is—Mr. Olver has an amendment on the roster numbered 4.

Mr. OLVER. Thank you, Mr. Chairman.

The amendment that I offer is in the second finding under the one that we have just dealt with.

The CHAIRMAN. Is this amendment in the package?

Mr. OLVER. It is in the package as far as I know.

[Pause.]

Mr. OLVER. All right. Excuse me. I'm told it's a redraft, Mr. Chairman and needs to be handed out.

The CHAIRMAN. Then it needs to be distributed.

Mr. OLVER. Yes.

[Pause.]

Mr. OLVER. Mr. Chairman, if I may proceed, if it has been redistributed now.

The CHAIRMAN. The gentleman may proceed.

Mr. OLVER. After conversation with the Chairman, it seems to me that my amendment would be further improved if the word "basic" were added after "additional" and if the word "and" in the third line of the amendment were changed, the first "and" were changed to "in."

So that it would read: "additional basic research and development are needed to encourage private sector investment in development of new and better energy sources and enabling technologies;"

And I would ask unanimous consent that it be considered in that form.

The CHAIRMAN. Without objection, but I'm not certain that we have all the gentleman's changes.

Mr. OLVER. The change would be after the word "additional", in the first line of the amendment, to insert "basic" research and development are needed to encourage private sector investment—the word "and" would be "in" development of new and better energy sources and enabling technologies.

[Pause.]

The CHAIRMAN. After the word "private sector investment" it becomes "in"?

Mr. OLVER. Yes.

The CHAIRMAN. "Private sector investment in development of..." Okay, I see. I understand. Okay. Without objection.

Mr. OLVER. The reason for offering this amendment is basically that this is a general statement about the needs in energy research. The first one speaks of what some of our old main energies are.

The second one is really a statement because it does not mention hydrogen per se, is a statement about what research would be needed in any development of any new energy source, though it applies perfectly well to hydrogen research as well.

So it is in this form, and in either form, it ought to serve in that way since it doesn't mention hydrogen in the first place.

And I have used exactly the same language that you, Mr. Chairman, have used in saying what this Bill is about, research and development, but not in the technical aspects of the—in the technologies, not in the technologies. That should be left to the private sector.

The CHAIRMAN. Well, I thank the gentleman.

In this case, the Chair does have a problem with changing the findings section. We are not being definitional in the findings section except that in this particular case, the Department has in fact been doing research and development in these areas.

And what we have found is the Department's idea of research and development is often extended well beyond doing work into the fundamentals of hydrogen studies.

In this case, the term "scientific fundamentals" means the complete and essential insight to structures, functions, forces, interactions and transformations involving matter and energy and their phenomena.

The gentleman's language would allow the Department to go well beyond that to do work that is ancillary, and maybe even several steps away from basic research into hydrogen.

And so in my view, this changes the findings section in a way that broadens the research fairly substantially.

The Chair is prepared to accept amendments later on from Mr. Brown to expand the Bill in a way that is I think functional, but I think if you take that expansion plus the one that the gentleman suggests, that we are going to provide the Department with some latitude to move so-called hydrogen money into much broader general research which I think, in this case, is a mistake. It's exactly the problem that this Bill is attempting to correct.

Is there other discussion?

Mr. BROWN. Mr. Chairman.

The CHAIRMAN. The gentleman from California.

Mr. BROWN. Mr. Chairman, it had been my hope that we could reach a compromise on this language.

I do not find the language of paragraph 2 of the findings to really shed much light on the need for this legislation, primarily because it is not artful language, nor does it conform to the structure of the Department of Energy's program.

If you will look through the Department of Energy's program on hydrogen research, you will find nothing in that that indicates that they're doing basic research.

They have not carved out, in other words, the term "basic" in their program content. They list research, but in describing the research, they prefer to think of it as applied research and development.

Now what I had hoped that we could do in recognition of this fact—and the fact is that they do not put money into what would be normally described as basic research because they think that the basic research on hydrogen's been done, that it's the applied research and the development that are important.

Now I do not like to quibble about terminology of this sort, but for you to want to continue the emphasis on basic scientific fundamentals is merely obfuscating the continued development of a logical program in this area.

Now I recognize that if you wish to persist in this, you can do so. But I would submit that the use of more artful language would be both easier to understand, more in conformity with what the Department is doing, and actually we could consider these modest

changes as being technical and conforming, rather than any substantive change in what you're proposing to do.

The CHAIRMAN. Well, I will say that the addition by the gentleman of the word "basic" to his language does help substantially in the language, and I have far less problem with it than when he was using the general term, research and development.

The Chair, because he wishes to actually change what's been going on in the Department some, prefers the language that was originally put in because I think that what we're trying to do is get the Department to do some things differently than what they've done in the past.

So I would prefer not to have the amendment put in because I think it will lead them back to old ways. But I think the gentleman from California makes a useful point.

Is there other discussion on the amendment?

[No response.]

The CHAIRMAN. I put the question.

Those in favor will say aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed will say no.

[Chorus of nays.]

The CHAIRMAN. In the opinion of the Chair, the ayes have it and the amendment's agreed to.

[Olver Amendment to the Walker Substitute follows:]

#4A

AMENDMENT TO THE AMENDMENT

IN THE NATURE OF A SUBSTITUTE

OFFERED BY MR. OLVER

Page 1, lines 10 through 13, amend paragraph (2) to read as follows:

(2) additional basic research and development are needed to encourage private sector investment ~~and~~ in development of new and better energy sources and enabling technologies;

Mr. SCHIFF. Mr. Chairman.

The CHAIRMAN. The gentleman from New Mexico.

Mr. SCHIFF. Thank you, Mr. Chairman.

Mr. Chairman, I don't believe I have an amendment at this time, but I have an inquiry about one provision of the Bill, if I may be recognized for that purpose.

The CHAIRMAN. The gentleman's recognized.

Mr. SCHIFF. Thank you.

I'm looking all the way back at the end of the Bill on page 6, the Authorization of Appropriations section. And there's a reference to dollar amount authorized for this Bill which goes up in each of several fiscal years, but then there is a—the next paragraph—"Related Authorizations for each of the fiscal years", "the total amount which may be obligated for energy supply, research and development activities shall not exceed the total amount obligated for those activities in fiscal year 1995."

Do I read that correctly to understand it's the Chair's intent in the Bill that as hydrogen research funding goes up, all other kinds of energy research funding in some way must go down to keep the total authorization equal to 1995?

The CHAIRMAN. The gentleman is correct.

The attempt here is to make certain that we reprioritize within the Department so that the Department's activities in fact put an emphasis on hydrogen.

And I would say to the gentleman that we're talking about reasonably modest sums in terms of going up as compared to hundreds of millions of dollars that are being spent in things like solar energy and a number of other applications.

And so you can make marginal changes in some of those particular programs in order to reprioritize some money towards hydrogen.

Mr. SCHIFF. So it's the Chair's position that with respect to the entire overall Energy research budget, the effect of any required reductions elsewhere the Chair doesn't feel would be that significant to the Department of Energy?

The CHAIRMAN. Well, it is the Chair's position that we're talking about, in the case of fiscal year 1996, a total increase of $15 million over what was spent in 1995. That, as I say, compares to literally hundreds of millions of dollars being spent in most of the other research areas.

The purpose behind this Bill is to have the Department begin to recognize that hydrogen is in fact a useful potential energy source.

That has been something the Department has refused to do in the past. The only reason why we're spending $10 million now in this area is because Mr. Brown and I have managed over the years to get, first of all, a line item in the appropriation that the Department didn't want, and then actually have gotten the Committee to actually begin funding some research in the area.

And what we're trying to do now is give them an authorization to help guide them in the appropriate direction so that they do in fact do some work that has not been done at all in the past.

Mr. SCHIFF. I thank the Chair for that explanation.

Mr. BROWN. Would the gentleman yield, please?

Mr. SCHIFF. I'm sorry. I yield to the gentleman from California.

Mr. BROWN. Let me state that I concur in what Mr. Walker has said.

However, I have a reservation about the wording as to whether it effectively accomplishes this.

And I think if Mr. Walker and I could agree on the wording that would accomplish his desire not to add to the overall expenditures of the Department, or the energy supply research and development account, but instead to take the money for the hydrogen out of the other accounts, then we would have no problem, because we agree on that.

But my view, and I'm advised by the Department that this is their view, is that since the President's budget calls for I think roughly a $250 million increase between '95 and '96 in energy supply research and development, that this actually would have the effect of reducing by $250 million the expenditures in this account, instead of just the amount required to compensate for the hydrogen research.

I think if the Department will submit some language to us that will accomplish the goal which Mr. Walker and I have, we can both accept that and we would have no problem.

The CHAIRMAN. I would say to the gentleman that I concur with that. When the Assistant Secretary of the Department was up here just the other day, she agreed that she understood what I was trying to accomplish and agreed to send us language that would accomplish that purpose.

Despite our efforts to be in touch with the Department to get that language, we have received none.

So we are kind of stuck with this as a way of maintaining to assure that there is.

And I would be perfectly prepared, if we report this Bill out, and we get better language from the Department that accomplishes the goals that the gentleman wants to—

Mr. BROWN. I wish the gentleman would quit referring to me as the Chairman.

The CHAIRMAN. I thought I said Gentleman.

Mr. BROWN. It makes me nervous.

The CHAIRMAN. Okay. But I am prepared, at that point, to accept such an amendment on the floor. I mean we can do whatever we need to to accomplish the purpose of both myself and the gentleman of California.

Mr. BROWN. Would the gentleman yield?

I was going to suggest that if he would accept my amendment, I would be willing to accept better language on the floor as a substitute when we get that proper language. Either way, I think we could get along, I think.

The CHAIRMAN. I thank the gentleman.

The gentleman from Massachusetts has an amendment number 5 on the roster sheet.

Mr. OLVER. Thank you again, Mr. Chairman.

Number 5 refers to the third finding in the—

The CHAIRMAN. Is this an amendment that is in the package, or is this one that should be distributed as well?

Mr. OLVER. It is a redraft so it needs to be distributed.

The CHAIRMAN. The Clerk will distribute it, and the gentleman will explain the amendment.

Mr. OLVER. This has to do with the third finding which reads "hydrogen holds tremendous promise as a cleaner and better energy source because it combusts predominantly to water" and I would point out that hydrogen is not a source, it's really a fuel.

And the phrase or the clause "because it combusts predominantly to water", I think that confuses more than anything. I don't know what else hydrogen combusts to except water, and I think the language that I have proposed, which is "hydrogen holds tremendous promise as a fuel," and if that is unclear I would certainly accept "as an energy fuel" because it can be extracted from water and can be burned much more cleanly than conventional fuels is a better finding, scientific finding than the one that is listed as number three.

The CHAIRMAN. Well, the Chair's prepared to accept the amendment. The Chair would simply point out to the gentleman that we did have testimony before the Committee that because of the impurities that are often in hydrogen, you do get some NO_x as a product of the—

Mr. OLVER. —of the burning of hydrogen, however.

The CHAIRMAN. I'm just saying that, to some extent, our finding was following the testimony that was before the Committee that that is typical. I don't see any problem with the gentleman's language. I'm prepared to accept it.

Mr. BROWN. Mr. Chairman, again, this is a little bit of semantics. Hydrogen and oxygen combining stoichiometrically in a vacuum always produce water and nothing else.

However, hydrogen burning in a normal situation not only will produce water, but it will produce other combustion products or result in other combustion products of various different kinds in sometimes very small amounts.

But I don't really think that's what we're trying to get at in this Bill, so a reasonable compromise is in order here.

The CHAIRMAN. I think the gentleman is right, and that's the reason why we had put the language we did in the Bill so that we would be accurate according to the hearing record, but I'm prepared to accept the gentleman's amendment.

Any other discussion on the amendment?

[No response.]

The CHAIRMAN. If not, the Chair will put the question.

Those in favor, say aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed, no?

[No response.]

The CHAIRMAN. The ayes have it. The amendment's agreed to.

[Olver Amendment 4A to the Walker Substitute follows:]

#5A

AMENDMENT TO THE AMENDMENT IN THE

NATURE OF A SUBSTITUTE

OFFERED BY MR. OLVER

Page 1, lines 14 through 16, amend paragraph (3) to read as follows:

(3) hydrogen holds tremendous promise as a fuel, because it can be extracted from water and can be burned much more cleanly than conventional fuels;

The CHAIRMAN. Mr. Olver's amendment number 6 on the sheet.

It's not in the package either, as I understand it. It will have to be distributed.

The Clerk will distribute the amendment.

Mr. OLVER. Are we on a Title here? Are we going through Title by Title?

The CHAIRMAN. We're going on the order of the amendments before us in the markup roster.

The Bill has been open for amendment at any point.

Mr. OLVER. Well, I would like to pass over that for the moment. I don't think I have it in my packet.

The CHAIRMAN. Pass on that amendment.

The gentleman from Alabama, Mr. Cramer's recognized for his en bloc amendment.

Mr. CRAMER. Thank you, Mr. Chairman.

My amendment number 7 is in the packet there so it is before the members.

What my amendment does is add simple language in two sections of the Bill that will permit demonstration projects in the DOE program that was outlined in the Bill.

The two sections are Section 3, the Purposes Section, and Section 5A, Research and Development Authorized Activities.

The CHAIRMAN. I thank the gentleman.

I would say to the gentleman, we are, in the way the roster is put together, we are in a somewhat difficult situation here.

What the gentleman's attempting to accomplish will be accomplished, I think, by the gentleman from California, Mr. Brown's amendment that comes later on in terms of putting demonstrations back into the Bill.

And I would prefer to accept that amendment because it's been worked out in a way that we think fits with the overall goals of the Bill.

And so if the gentleman wishes to add the demonstration language, the Chair is prepared to accept Mr. Brown's amendment, but thinks that your amendment is somewhat broad in comparison to what we're attempting to accomplish in the Bill.

Mr. CRAMER. Well, I would ask Mr. Brown to comment on the difference, if now would be the appropriate time to do it, the difference between the two pieces, or else I could offer mine again after he offers his.

Mr. BROWN. If the gentleman would yield, I would like to assure him that the amendment which, after we have consulted and redrafted, I am offering and Mr. Walker's willing to accept, does in my opinion fulfill your intentions because it says "the Secretary shall provide for hydrogen energy research, development, and demonstration program relating to production, storage, transportation and use", all of the things which you contemplate.

It merely has it in a different section of the Bill.

And for simplification purposes, if the gentleman would withdraw his amendment, I think we'd accomplish the same purposes.

Mr. CRAMER. I'll withdraw my amendment at this point.

I thank the Chair.

[Cramer Amendment [withdrawn] to Walker Substitute follows:]

AMENDMENT TO THE AMENDMENT IN THE
NATURE OF A SUBSTITUTE
H.R. 655

OFFERED BY MR. CRAMER

Page 2, line 9, following the word "fundamentals" insert the following,

"and to demonstrate the processes and technologies"

Page 3, line 5, following the word "development" insert the following,

"and for demonstration of processes and technologies"

The CHAIRMAN. The Chair would recognize then, Mr. Brown, for the purposes of offering his amendment. It's amendment number 8 on the roster.

Without objection, the gentleman's amendment is withdrawn and I would recognize Mr. Brown.

Mr. BROWN. Mr. Chairman, we have revised language on my amendment which—

The CHAIRMAN. The Clerk will distribute the amendment.

Mr. BROWN. —and the Clerk will distribute that amendment.

[Pause.]

The CHAIRMAN. The gentleman will describe his amendment.

Mr. BROWN. Mr. Chairman, my amendment is addressed to Section 5, Research and Development, on page 3 of your draft.

And it provides a simplified description of the authorized activity which includes the Research, Development, and Demonstration Program relating to all of the necessary aspects of hydrogen that have been considered and actually were included in the original draft of your Bill.

But it does this in a fashion which I think is simpler, more direct and avoids creating too much confusion.

The CHAIRMAN. The gentleman from California, Mr. Baker.

Mr. BAKER. Question for the author of the amendment, Mr. Brown.

Mr. BROWN. Yes?

Mr. BAKER. In your language in the last paragraph, it says "In establishing priorities for Federal funding under this section, the Secretary shall survey private sector hydrogen activities, take steps to ensure that activities under this section do not displace or compete with privately funded hydrogen activities of United States industry."

Which is good and sounds good.

In Livermore Laboratory, at the Livermore Laboratory we have Lockheed, Texaco, and the U.S. Government currently doing a cooperative research agreement.

How would this language affect that agreement if the Department of Energy wanted to add money to that or subtract money from that?

What would happen?

Mr. BROWN. Well, the Department of Energy is acting in accordance with existing authority to engage in cooperative programs with private sector firms, and this is not intended in any way to change that authority or responsibility.

What we are seeking to do, obviously, is to make sure that anything the private sector's already doing with their own money not be duplicated, but that this contribute additional areas of research or additional activities which are needed and which the private sector would agree are needed.

So, basically it is not my intention that this would interfere with existing CRADAs but would provide a basis of information to enable the Department to select those areas which are not being dealt with by the private sector.

Mr. BAKER. I'm not smart enough to know what they're doing with all the lasers and the natural gas down there, but if they

want to go into the next step, would this language prevent the two private companies and the Government from moving ahead?

Mr. BROWN. I couldn't answer that question in the abstract. This Bill is not intended to provide Federal funding for commercial type operations. And I don't think that if this consortium that you referred to gets to that stage, that the Government should continue to be involved in it. I think it should seek private financing at that point.

Mr. BAKER. The purpose, as I understand, Lockheed wants to go to the moon, as does NASA. Texaco probably is a little more pedestrian, would just like to move cars in the LA Basin without smog, and the Government thinks both of those are great ideas.

So I'm worried about this language cutting off something that is becoming successful and then eventually will become commercial.

Mr. BROWN. Well, I share the gentleman's concern about interfering with a viable and on-going program. Nothing in this Bill would be aimed at the Government part of the program, which is going to the moon. We do not expect, in the near term at least, the private sector enterprises to be taking this over.

If they start developing hydrogen fueled automobiles, that's another problem, and I really expect the automobile industry to take that situation over.

The CHAIRMAN. And let me point out to the gentleman from California that under the language in the authorized activities, "In establishing priorities for Federal funding under this section, . . ."

The research that's going on in Livermore is under other law and so on and would not be affected by this section.

Mr. BAKER. Then if the gentleman will yield, that means under this special section toward new hydrogen projects, rather than the existing hydrogen program?

The CHAIRMAN. The gentleman is defining the work that will go on under this particular Bill, that's correct.

Mr. BAKER. You promise?

The CHAIRMAN. I promise.

[Laughter.]

Mr. BAKER. Thank you.

The CHAIRMAN. Is there further discussion on the amendment of the gentleman from California, Mr. Brown?

[No response.]

The CHAIRMAN. If not, the Chair will put the question.

Those in favor will say aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed, no.

[No response.]

The CHAIRMAN. The ayes have it. The amendment's agreed to.

[Brown Amendment 8 to Walker Substitute follows:]

#8A

AMENDMENT TO THE AMENDMENT IN THE

NATURE OF A SUBSTITUTE

OFFERED BY MR. BROWN

Page 3, lines 2 through 9, amend subsection (a) to read as follows:

(a) AUTHORIZED ACTIVITIES.--Pursuant to this section, the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990, and the Energy Policy Act of 1992, and in accordance with the purposes of this Act, the Secretary shall provide for a hydrogen energy research, development, and demonstration program relating to production, storage, transportation, and use of hydrogen, with the goal of enabling the private sector to demonstrate the technical feasibility of using hydrogen for industrial, residential, transportation, and utility applications. In establishing priorities for Federal funding under this section, the Secretary shall survey private sector hydrogen activities and take steps to ensure that activities under this section do not displace or compete with the privately funded hydrogen activities of United States industry.

The CHAIRMAN. The Chair would ask that a couple of amendments that he has now to the Section just amended by the gentleman from California be distributed.

These are two amendments that have been worked out that since we have now agreed to the term "demonstration," we are defining the term "demonstration," and also we are putting in place a 50 percent cost share for any kind of a demonstration project.

And Mr. Brown and I have worked these out previously, but the Clerk will distribute the amendments.

[Pause.]

Mr. BROWN. Would the gentleman recognize me?

The CHAIRMAN. Yes, I would recognize the gentleman.

Mr. BROWN. In connection with the amendments which Mr. Walker has just discussed, we have worked these over and I have personally reviewed them, and the amendments are satisfactory to me and do resolve the matter of definition as far as demonstration and certain other problems such as cost sharing so as to contemplate not violating the GATT agreements or anything of that sort.

The CHAIRMAN. And the gentleman also had an amendment later on to GATT and so the Chair is prepared to work out.

Mr. BROWN. Yes. In other words, all is peace and harmony.

The CHAIRMAN. Okay, I thank the Chair.

If the amendments have been distributed, as I say, these are amendments that have been worked out.

If there is discussion, are there any other—

Mr. TRAFICANT. Mr. Chairman, I move the question.

The CHAIRMAN. Well, I know the gentleman wants to move, and I do too, but I want to make certain all members have an opportunity for any discussion.

Is there discussion on the amendments?

Ms. McCarthy.

Ms. MCCARTHY. Thank you, Mr. Chairman.

Just clarification on the 50 percent of the costs. That would not involve unfunded mandates would it, Mr. Chairman?

The CHAIRMAN. No, there's no unfunded mandates here. It simply says that what we are doing is if you have a private entity participating in a demonstration project, they would have to put up 50 percent of the cost.

Ms. MCCARTHY. Thank you, Mr. Chairman.

The CHAIRMAN. Voluntary application process.

Any other discussion?

[No response.]

The CHAIRMAN. If not, the Chair will put the question.

Those in favor will say aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed, no.

[No response.]

The CHAIRMAN. The ayes have it. The amendments en bloc are agreed to.

[The Walker en bloc amendments to the Walker substitute follow:]

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MR. WALKER

Page 2, lines 20 and 22, redesignate paragraphs (1) and (2) as paragraphs (2) and (3).

Page 2, after line 19, insert the following new paragraph:

1 (1) the term "demonstration" means a valida-
2 tion of the technical feasibility of a theory or proc-
3 ess;

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MR. WALKER

Page 4, after line 3, insert the following new paragraph:

1 (2) The Secretary shall require at least 50 percent
2 of the costs directly and specifically related to any dem-
3 onstration project under this Act to be provided from non-
4 Federal sources. The Secretary may reduce the non-Fed-
5 eral requirement under this paragraph if the Secretary de-
6 termines that the reduction is necessary and appropriate
7 considering the technological risks involved in the project
8 and is necessary to serve the purposes and goals of this
9 Act.

Page 4, line 4, strike "(2)" and insert in lieu thereof "(3)".

Page 4, line 5, insert "or (2)" after "paragraph (1)".

Mr. OLVER. Mr. Chairman.

The CHAIRMAN. Mr. Olver.

Mr. OLVER. Mr. Chairman, if I may, if we could return to number 6, this one probably should now be very simple because it was my not being able to follow the paper here in proper order.

But my amendment, if it could be distributed, would merely put in the first of the purposes under this Section 3 that we had just passed, would add in the concept of demonstration in the definition in the first of those purposes so that it would read:

"to provide for a research, development, and demonstration program leading to the production, storage, transport, and use of hydrogen for industrial, residential transportation and utility applications."

The CHAIRMAN. Well, the gentleman in his previous amendment, added the word "basic," which made it possible for the Chair to be sympathetic to—

Mr. OLVER. I'll think that, as a friendly amendment to "basic" research, development, and demonstration program" would be fine.

The CHAIRMAN. Then the Chair has no problem with the amendment.

Any further discussion on the amendment?

Mr. CRAMER. Mr. Chairman, I might add, if this amendment passes, then that would certainly cure everything I would have attempted to have accomplished so I'm in support of this amendment as well.

The CHAIRMAN. Okay, I thank the gentleman.

Any further discussion on the amendment?

[No response.]

The CHAIRMAN. If not, the Chair will put the question.

All those in favor will say aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed, no.

[No response.]

The CHAIRMAN. The ayes have it. The amendment is agreed to.

[Olver Amendment 6A follows:]

#6A

AMENDMENT TO THE AMENDMENT

IN THE NATURE OF A SUBSTITUTE

OFFERED BY MR. OLVER

Page 2, lines 8 through 10, strike "research and development" and all that follows through "store, transport, and use" and insert in lieu thereof "a basic research, development, and demonstration program leading to the production, storage, transport, and use of".

The CHAIRMAN. Mr. Graham, amendment number 9.

Mr. GRAHAM. Thank you, Mr. Chairman.

The CHAIRMAN. You have a substitute at the desk, I understand.

Mr. GRAHAM. Yes. I'd like to withdraw 9 and 10.

The CHAIRMAN. I'd ask the Clerk to distribute the amendment.

Mr. GRAHAM. I'm withdrawing 9 and 10 and submitting 9 substitute. I think that's being distributed.

The CHAIRMAN. Okay, we will take, this will be the number 9 substitute.

Mr. GRAHAM. And the purpose of this amendment, in the section that we're amending, there's a statement that the Secretary of Energy should consult with other agencies, such as the Department of Defense, to try to have technology transfers and to get the benefit of what the Department of Defense and other agencies have done with hydrogen research.

We're simply changing the language to compel her to do so because at Savannah River Site where I represent, there's been tritium production for years that deal with hydrogen. Tritium's an isotope of hydrogen I've been told.

And we'd like to get the agencies talking with each other to make sure that we get the full benefit of the technology and expertise that exists, and it's in that spirit that the amendment's offered.

The CHAIRMAN. The Chair is prepared to accept the gentleman's amendment. It's a worthwhile amendment and I find no problems with it.

Is there any other discussion on the amendment?

[No response.]

The CHAIRMAN. If not, the Chair will put the question on the amendment.

Those in favor will say aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed, no.

[No response.]

The CHAIRMAN. The ayes have it. The amendment's agreed to.

[Graham Amendment Number 9 follows:]

#9
Substitute

H.R. 655

AMENDMENT TO THE AMENDMENT IN THE

NATURE OF A SUBSTITUTE

OFFERED BY MR. GRAHAM

Page 5, line 14, strike "with" and insert in lieu thereof "within the Department, and with the activities of".

Page 5, line 18, insert "Further, the Secretary shall pursue opportunities for cooperation with such federal entities." after "and Space Administration.".

The CHAIRMAN. Ms. Jackson Lee has an amendment number 11.

Ms. JACKSON LEE. [Inaudible.]

The CHAIRMAN. Will the gentlelady use her microphone so that—

Ms. JACKSON LEE. Excuse me.

I have an amendment to the amendment in the nature of a substitute at the desk, I believe.

The CHAIRMAN. The Clerk will report the amendment.

Ms. JACKSON LEE. Eleven A.

And, Mr. Chairman, I'd like to ask unanimous consent to be allowed to add 16A to take these now en bloc together, because I may be required to, because of a departure problem, if I could have unanimous consent to take these together?

The CHAIRMAN. Yes, the Clerk will distribute both the amendments, then.

Ms. JACKSON LEE. Thank you, Mr. Chairman.

The CHAIRMAN. And they will be regarded, without objection, they will before the Committee in an en bloc form.

[Pause.]

The CHAIRMAN. Let me ask the gentlelady a question.

Is she prepared to modify her amendment 11A at the very last part in order to make it consistent with the language previously adopted where it says ''development, and demonstration activities'' she says that ''further the purposes of this Act.'' To make it consistent, would she be willing to accept the words ''in accordance with the purposes of this Act''?

Ms. JACKSON LEE. Mr. Chairman, I certainly would.

The CHAIRMAN. Then we will make that change, without objection. And then the Chair has no problem with the amendments en bloc.

The Chair's prepared to listen to the gentlelady's explanation.

Ms. JACKSON LEE. Thank the Chair.

Mr. Chair, I think that let me first refer to 11A and indicate that I think the importance of these changes I'm now offering will provide, I think, further clarity in the direction in which we would like to go on this particular legislation.

One, it clarifies a solicitation should not occur until Federal appropriations are provided. It further clarifies that all parties, including DOE labs, are eligible to compete for grants, and that puts them competitive with outside entities.

And it clarifies that peer review proposals should not compromise proprietary information. I think we certainly have been sensitive to that concern by our private sector which would be involved in such research.

And then clarifies that the Secretary shall expend funds remaining, after solicitation process, on authorized Federal hydrogen programs.

I think this helps keep the funded dollars focused on the intent of this legislation.

That is 11A and I offer that amendment.

The CHAIRMAN. The gentlelady's amendments are en bloc. The Chair's prepared to accept the en bloc amendments.

Is there further discussion of the amendments?

Ms. JACKSON LEE. Mr. Chairman, if I might, just so that I do explain 16A. What that does is prevents the Secretary from going

over into other agencies and taking over or challenging, like NASA and DOE, on their technology transfer efforts.

The CHAIRMAN. Thank the gentlelady.

Any further discussion on the amendment?

[No response.]

The CHAIRMAN. If not, the Chair will put the question.

Those in favor will say aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed, no.

[No response.]

The CHAIRMAN. The ayes have it. The amendment's agreed to.

Ms. JACKSON LEE. Thank you, Mr. Chairman. Thank the Committee.

[Jackson Lee Amendments 11A and 16A en bloc follow:]

#11A

AMENDMENT TO THE AMENDMENT IN THE

NATURE OF A SUBSTITUTE

OFFERED BY MS. JACKSON LEE

Page 3, lines 10 through 19, amend subsection (b) to read as follows:

(b) SCHEDULE.--Within 180 days after the date of the enactment of the later of this Act or an Act providing appropriations for programs authorized by this Act, the Secretary shall solicit proposals from all interested parties (including the Department's laboratories) for carrying out the research, development, and demonstration activities authorized under this section. Within 180 days after such solicitation, if the Secretary identifies proposals worthy of Federal assistance, financial assistance shall be awarded under this section competitively, using peer review of proposals with appropriate protection of proprietary information. The Secretary shall use appropriations authorized by this Act that are not allocated for such awards to carry out research, development, and demonstration activities ~~that further~~ IN ACCORDANCE WITH the purposes of this Act.

#16A

AMENDMENT TO THE AMENDMENT IN THE

NATURE OF A SUBSTITUTE

OFFERED BY MS. JACKSON LEE

Page 4, lines 20 and 21, strike the phrase "or under other similar Federal programs,".

The CHAIRMAN. The Chair now recognizes Mr. Luther and Mr. Olver for amendment number 12.

Mr. Luther?

Mr. LUTHER. Thank you, Mr. Chair.

Yes, if I could have amendment 12 passed out.

Okay, Mr. Chairman, it's in the packets.

This amendment would, in effect, delete section 6 of the Bill which you will see, as you well know, deals with the concept of highly innovative technologies.

And my concern, well there are a number of concerns, but perhaps I can address my concerns to you, Mr. Chairman.

The first one would be, it would seem to me that all of the expenditures of money under this legislation should be for highly innovative technologies.

So I wonder why we would carve out five percent of the moneys and then not provide for a matching requirement, therefore relaxing the conditions with respect to five percent of the moneys.

And so I wonder if you or someone else could address that particular issue?

The CHAIRMAN. Well, I would say to the gentleman that the problem in the Department with much of the research that goes on in the energy area has been that there has been a fairly strong good-old-boy network developed where the money flows kind of naturally amongst people who have an on-going working relationship with the Department.

Over the years, what that has meant is that people with new ideas have had the door slammed in their face and have not been able to get to first base with ideas that do not fit with where the Department has been headed in its research program.

This is an attempt within the Bill, and I think it's one of the most important initiatives within the Bill, to assure that people who are working in singular research, who do not represent big corporations, who are not people who are a part of the academic structure of universities or a part of huge laboratory efforts, are going to have an opportunity to come in and the Department's actually going to have to listen to them a little bit and find out whether or not they may have something actually worth doing.

And it is a section of the Bill that I feel very strongly should be there to assure that some of the work that's going on out there, that is available to us now because of the nature of the information revolution and the ability of people to do a lot of innovative things, actually gets considered by the Department.

And in all honesty, because these are singular people and not the big corporations and so on, it is much more difficult for them to come up with matching money. These tend to be individual researchers that we're talking about and it's basically carving out an area for those individual researchers to have some opportunity to get the Department to listen to them in a meaningful way.

Mr. LUTHER. Thank you, Mr. Chairman.

The concern, well, a couple of concerns, but one concern I would have with that response would be why shouldn't even highly innovative technologies be subject to the requirement, the cost-sharing requirement set forth in Section 5[c], because that cost-sharing re-

quirement does provide flexibility if the Secretary finds that a particular project would serve a purely basic or fundamental nature.

So there is sufficient discretion with the Secretary, and why shouldn't that condition also apply if we're going to waive the cost sharing for highly innovative technology?

The CHAIRMAN. Well, I thought I did explain that.

First of all, it says up to five percent of the moneys, so this is not a total of five percent of the moneys by any means. It says up to that amount that can be set aside.

And secondly, what I tried to explain to the gentleman was that in this particular instance, we are talking about people who tend to be small independent researchers who, the cost-sharing requirements of the Department are basically used to freeze them out.

I mean, as soon as they walk in the door, the Department says, well, we have cost-sharing. Are you prepared to come up with the money yourself up front as a part of doing this research.

These are, for the most part, people who don't have those kinds of resources available to them, and the cost-sharing is a way of freezing them out and assuring the good-old-boy network continues to dominate.

And what we were trying to do in this particular instance is assure that there was another avenue available to individual researchers that are outside the scope of traditional patterns of funding at the Department.

Mr. OLVER. Mr. Chairman, may I butt in here for a moment?

I'm actually extremely sensitive to the position put forward by you, Mr. Chairman, on this point. I think the problem is perhaps the use of the words "highly innovative energy technologies" which implies that the others that are here are somehow not innovative or not highly innovative.

And I think we want them all to be innovative. And it would seem to me there ought to be some way that we could come up with something. I think you're really concerned about people who are on the very cutting edge of research which is somewhat before the point where you can expect commercialization, whereas those that are being asked for a cost share are probably somewhere closer to commercialization, and can sense that this thing really is going to move rather quickly.

And I think the concept of highly innovative technologies in this instance kind of denigrates the rest of the program which we support and should do, and we ought to be able to find some language if we could work together in doing so.

The CHAIRMAN. Well, I certainly would be willing to look at that.

The point, what we're doing here is we're talking about ideas and theories that are bold and rather new, and not necessarily in the mainstream of conventional wisdom along the way. And conventional wisdom often in these areas turns out to be absolutely wrong.

And we want the Department to be exploring some of the new ideas that are really out there, and to devote up to five percent of the moneys allocated here in order to do that.

This is not a derogation of other kinds of research. It is simply saying that there are some things that we ought to be doing, par-

ticularly in this area, that are very, very new, very innovative, and we want the Department to be engaged in that kind of work.

Mr. McHale has asked for recognition.

Mr. MCHALE. Thank you, Mr. Chairman.

Mr. Chairman, I wholeheartedly agree with the statement you have just made.

Let me just very briefly put this on a practical level and also provide for full disclosure.

The world's largest hydrogen producer is located in my district and is one of the major employers in my district.

For that reason, I know many of the folks who work at that company, and I can tell you that in recent years, as that company has continued in the development of technology in hydrogen production, many individual scientists at that company, sometimes with the cooperation of that company, sometimes in direct competition, have left that company to work on programs of highly innovative technology, not yet ready for commercialization, but with tremendous potential for our country in terms of advances in energy production in hydrogen development.

I agree with the gentleman, Mr. Olver, who said, well perhaps we can work on the language so that the concept is better expressed.

And I for one would be eager to work with Mr. Olver on that. But I can tell you based on my own experience and numerous contacts that I had with individual citizens, very bright scientists who have gone out on their own without commercial ability but with a good idea, the concept embodied in Section 6 is a good one, and the Chairman is correct.

Thank you, Mr. Chairman.

The CHAIRMAN. Ms. McCarthy.

Ms. MCCARTHY. Mr. Chairman, I just wanted to inquire. I don't see in Section 6 the language that would clarify that this is for small independent uses.

The CHAIRMAN. Well, I would say to the gentlelady, we are not attempting to bias the research, but again, the record on this is fairly clear that when we're talking about these kinds of technologies, we do tend to be talking about the small, independent researcher.

Again, I would point out to the Committee that it is very discretionary on the part of the Secretary here. It's up to five percent. We're not binding her to the five percent.

We're simply saying that here's a window, and when people come in with highly innovative technologies, they will have the capability of being able to say to the Secretary, you are allowed to devote up to five percent of the money for these purposes.

They can decide not to do it. But the fact is it opens the door, it cracks open the door to the outside what has traditionally been an old boy network that I think has been detrimental to some of the energy research that's been done.

That's all this section really accomplishes.

Mr. Luther.

Mr. LUTHER. Mr. Chairman, I'm prepared to withdraw the amendment so that perhaps we could work on further refinements

to the language, and I think Ms. McCarthy also has raised a very interesting point.

Perhaps we'd want to narrow the language so that it would in fact be certain to deal with the kinds of companies you're referring to, and so with that, Mr. Chairman, I'd like to withdraw.

The CHAIRMAN. With unanimous consent, and without objection, the amendment is withdrawn.

[Luther/Olver Amendment [withdrawn] to Walker Substitute follows:]

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MR. LUTHER AND MR. OLVER

Page 3, lines 20 and 21, strike "Except as otherwise provided in section 6, for" and insert in lieu thereof "For".

Page 4, lines 11 through 16, strike section 6, and redesignate subsequent sections accordingly.

The CHAIRMAN. And I assure the gentleman that I will be happy to work, if there's better language for accomplishing this same purpose, the Chair is willing to try to work on that.

I must say, though, that we've gone through a number of iterations of this, and it's very difficult to figure out language that gets at what we're trying to do, but I'm certainly willing to explore the possibilities.

I am prepared to accept the next three amendments, you know, if you don't have to spend a lot of time explaining them, we can go through them here real quick.

Mr. ROEMER. I'll be very quick, Mr. Chairman.

Mr. BROWN. I move that the next three amendments numbered 13, 14, and 15, including two by Mr. Roemer be accepted on the condition that Mr. Roemer doesn't take up any time explaining them.

[Laughter.]

Mr. ROEMER. I will say absolutely nothing other than thank you, Mr. Chairman.

The CHAIRMAN. We want to make certain that these are done as amended.

Mr. ROEMER. Okay.

I have an amendment to the amendment in the nature of a substitute, and I would just ask, after consulting with your staff on my first amendment, Mr. Chairman, that I have unanimous consent to offer a modified version of this original amendment which would consist of only the fourth paragraph.

The CHAIRMAN. Without objection.

Mr. ROEMER. The only intent of this amendment as modified, Mr. Chairman, is to make sure when the industry leads in their cash requirement of 20 percent, that whether that is cash or in kind, that there is clarity in the fair market value of personnel, services, equipment and other resources, be counted in an industry cost match.

The CHAIRMAN. Amendments number 13, 14, and 15 are before the Committee in an en bloc form. The Chair is prepared to accept them.

I would say, with regard to Mr. Brown's amendment, this is an excellent amendment that makes certain that we don't have any GATT problems in the Bill, and the gentleman's offered an excellent amendment on that.

The Chair would put the question——

Is there further discussion?

[No response.]

The CHAIRMAN. If not, the Chair will put the question on the en bloc amendments.

All those in favor will say aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed, no?

[No response.]

The CHAIRMAN. The ayes have it. The en bloc amendments are agreed to.

[Roemer amendment 13, Brown amendment 14 and Roemer amendment 15, en bloc, follow:]

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MR. ROEMER

Page 3, line 21, strike "research and development" and insert in lieu thereof "research, development, and demonstration".

Page 3, line 24, strike "program." and insert in lieu thereof "project. If more than one proposal is received for substantially the same activities, preference shall be given to the proposal which includes greater contributions by industry.".

Page 3, line 26, insert "demonstrates industrial need for the results of a project and" after "if the Secretary".

Page 4, line 6, insert "and the fair market value of" after "shall include cash,".

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MR. BROWN

Page 4, after line 7, insert the following new subsection:

1 (d) CERTIFICATIONS.—Before financial assistance is
2 provided under this section or the Spark M. Matsunaga
3 Hydrogen Research, Development, and Demonstration Act
4 of 1990—
5 (1) the Secretary must certify that providing
6 such financial assistance is consistent with the
7 Agreement on Subsidies and Countervailing Meas-
8 ures described in section 771(8) of the Tariff Act of
9 1930 (19 U.S.C. 1677(8)); and
10 (2) industry participants must certify that they
11 have made reasonable efforts to obtain non-Federal
12 funding for the entire cost of the project, and that
13 such non-Federal funding could not be reasonably
14 obtained.

Page 4, line 8, redesignate subsection (d) as subsection (e).

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AMENDMENT TO THE AMENDMENT IN THE
NATURE OF A SUBSTITUTE
OFFERED BY MR. ROEMER

Page 4, lines 8 through 10, amend subsection (d) to read as follows:

1 (d) DUPLICATION OF PROGRAMS.—The Secretary
2 shall not carry out any activities under this section that
3 unnecessarily duplicate activities carried out elsewhere by
4 the Federal Government or the private sector.

13A

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MR. ROEMER

Page 4, line 6, insert "and the fair market value of" after "shall include cash,".

The CHAIRMAN. We need to recess now.

The next issue coming up would deal with the cap, which is a somewhat controversial issue, and then there's also an amendment to reduce the authorization levels in the Bill which also may be the subject of some controversy.

But those are the only two things that we know of that are left that could possibly produce votes. So I would ask members, if they could, to go over, vote and come back, and we will try to move very, very quickly to the final passage of the Bill.

The Committee stands in recess.

[Recess.]

The CHAIRMAN. The Committee will come to order.

The Chair recognizes Mr. Brown for amendment.

Mr. BROWN. Mr. Chairman, I want to offer the amendment dealing with the limitation on authorization, Item 17, which we refer to as the "caps amendment."

The language in the bill . . .

[Pause.]

The CHAIRMAN. The gentleman is recognized for his amendment.

Mr. BROWN. Yes. The gentleman is just trying to catch his wits.

[Laughter.]

Mr. BROWN. I am looking for the language in the bill as they currently exist.

The language in the bill, which my amendment proposes to eliminate, is that for each of the fiscal years 1996, 1997, and 1998, the total amount which may be obligated for Energy Supply, Research, and Development shall not exceed the total amount obligated for such activities in fiscal year 1995.

Now I have been looking for ways to achieve the gentleman's purpose, as I have indicated before, and I understand that purpose to be that the additional funding for the hydrogen program will not add to the amount obligated by the Department for this particular research category—that is, Energy Supply, Research, and Development.

I am in agreement with that objective. I want to find language that will achieve that objective. Unfortunately, what the gentleman's amendment does, which we can be fairly precise about now since we have seen the FY 1996 budget, is to reduce the amount that is authorized for Energy Supply, Research, and Development to the same level as 1995, or in other words a reduction of about $250 million.

Now that is far more than necessary to encompass the additional expense of the Hydrogen program. If we can find language which will achieve the gentleman's goal—and I have wrestled with two or three versions which it turns out do not—then I will be able to accept it.

As it is, I am suggesting that we strike this particular paragraph; and, if we can either get from the Department language which will not cut them $250 million, which would directly impact all of the major laboratories—it would impact Oak Ridge, Savannah River, Argonne, Livermore—yes, Mr. Baker, Livermore—and others, and I do not think anybody on either side wants to do that.

We want to keep the spending at the level that would be without the hydrogen program. We do not, in my opinion, want to use this

vehicle to cut a quarter of a billion dollars out of the Department's programs.

So I ask for an aye vote on my amendment.

The CHAIRMAN. I thank the gentleman.

The gentleman is using the President's budget as the guide. The fact is that the appropriations are likely to be different from the President's budget in some of these categories, and we did in fact use the money obligated for such activities in 1995.

There is no reason to believe that any cuts would occur of any major magnitude in any programs, and in particular in the labs. It is my view that there are a number of efforts underway in everything from solar, to fusion, to a whole host of programs that are spending hundreds of millions of dollars a year, and we can in fact look to some of those programs to be marginally—to a couple of projects not to be done in order to increase the priority for hydrogen.

That is what this attempts to do.

The fact is that we ought not be in a position in this Committee of trying to reprioritize things by giving into the Department's wish that everything that is authorized increase the level of spending in the Department.

That is literally the effect of what the gentleman is proposing. If his amendment eliminates the cap, we would then be authorizing money over and above that which is now being spent by the Department.

In my view, the Committee ought to be reprioritizing the research, not increasing the spending, at a time when all of us are looking for budget savings.

So the attempt of the language in the bill is to assure that we do maintain a level of funding, which is a responsible level of funding, and not increase spending as a result of our reprioritization.

Now the gentleman from Pennsylvania again repeats that if the Department is willing to come up with language that accomplishes my purpose, I am willing to accept good language that accomplishes the purpose here.

I told that to the Assistant Secretary the other day. You know, we have yet to receive any language. We have called them on a couple of occasions. We have yet to hear back from them getting language.

If that can be done, I am ready and willing to accept language that does not cap. But it seems to me that the Committee should not report out a bill that increases the deficit in order to do this program when the intent here is to reprioritize research and not increase spending.

Is there further discussion on the amendment?

Mr. OLVER. Mr. Chairman.

The CHAIRMAN. The gentleman from Massachusetts.

Mr. OLVER. The combination of what goes on here is that in setting up a new and expanded hydrogen research bill, which is the subject of this legislation, and quadrupling the expenditure of the hydrogen research program in a three-year period, the authorizations under the hydrogen research, recognizing that that then has to be appropriated, but increasing that authorization by essentially

quadrupling over what has been spent, and certainly over what has been recommended in the President's budget.

If we are to achieve what you, Mr. Chairman, are suggesting—namely, no additional total expenditure out of the research program—then there are some other things that do have to give somewhere along the way, whether they happen to be the major research labs of Oak Ridge, and Sandia, and Livermore, and Argonne, and so on, those places, or wherever else it is, in sum total it has to come down to that.

So I am inclined to support the chair—the Ranking Member's amendment, recognizing that at a later point we clearly have to keep the expenditure down this year, but I would like to point out that part of the problem is that the authorizations for the hydrogen program ramp up so very quickly, and that's the subject of course of the amendment that I wish to offer later.

The CHAIRMAN. Yes. The gentleman does have an amendment to reduce the amount of money and to try to reduce the prioritization we are trying to provide for hydrogen, and also, as I say, in my view what you have happening here is that if you take off the cap, then what you are engaging in is a bill that would in fact put us in a position of deficit spending.

Mr. DOGGETT. Mr. Chairman.

The CHAIRMAN. The gentleman from Texas.

Mr. DOGGETT. I have a question for the Ranking Member about his amendment, if he can respond at this point?

Mr. BROWN. The gentleman will try.

The CHAIRMAN. The gentleman is recognized.

Mr. DOGGETT. I guess what I want to know then is, will a vote against this amendment have, as its practical effect, to cut funding at Oak Ridge, and Livermore, and Sandia, and Los Alamos, and Argonne, and Savannah River?

Mr. BROWN. There is no question about that, Mr. Doggett. The only question is the amount that it will cut.

Mr. DOGGETT. How much?

Mr. BROWN. Well, it depends upon whether the appropriators reach the level of the President's budget or not. If they appropriate the level of the President's budget, the cuts that will have to be made, if Mr. Walker's language continues, in this one account would be about $250 million.

If they appropriate less, the cuts would be correspondingly less because this language will set a cap on how much can actually be obligated.

If they appropriate $100 million less than the President's budget, then the cuts that will have to be taken to meet this language would be only $150 million.

Mr. DOGGETT. So the only question is whether they get cut somewhere else mostly, or whether they get cut by a vote against this amendment, mostly, but either way they stand to lose millions of dollars each?

Mr. BROWN. Yes.

Now Mr. Walker's position is that the additional cost of this hydrogen program, which would be about $15 million in 1996, and $25 million in 1997, and $40 million in 1998, should come out of

the other programs in this $3 billion account. They would have a minuscule effect.

But if you go beyond that to another $100- or $200 million, then it really begins to bite, and it has to come out of the programs in the labs which are all funded in this account.

Mr. DOGGETT. Thank you.

The CHAIRMAN. Well, again I would say that that is—the real effect of the amendment is to increase spending. The fact is that all this particular bill does is reduces the spending in the accounts as constituted in 1995 by $15 million. That is not going to come out of the hides of the labs; it can easily come out of the hides of a number of other programs that, in the opinion of the Chair, are of lesser priority than hydrogen research.

Is there other discussion on the amendment?

[No response.]

The CHAIRMAN. If not, the Chair will put the question on the amendment.

Those in favor of the amendment will say, aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed, say no.

[Chorus of nays.]

The CHAIRMAN. In the opinion of the Chair, the noes have it.

Mr. BROWN. Mr. Chairman, on that I would request a roll call vote.

The CHAIRMAN. The gentleman requests a roll call vote.

The CLERK. Mr. Walker.

The CHAIRMAN. No.

The CLERK. Mr. Walker votes no.

Mr. Brown.

Mr. BROWN. Aye.

The CLERK. Mr. Brown votes aye.

Mr. Sensenbrenner.

[No response.]

The CLERK. Mr. Hall.

[No response.]

The CLERK. Mr. Boehlert.

[No response.]

The CLERK. Mr. Traficant.

[No response.]

The CLERK. Mr. Fawell.

[No response.]

The CLERK. Mr. Hayes.

[No response.]

The CLERK. Mrs. Morella.

Ms. MORELLA. No.

The CLERK. Mrs. Morella votes no.

Mr. Tanner.

Mr. TANNER. Aye.

The CLERK. Mr. Tanner votes aye.

Mr. Weldon of Pennsylvania.

Mr. CURT WELDON. No.

The CLERK. Mr. Weldon votes no.

Mr. Geren.

Mr. GEREN. Aye.

The CLERK. Mr. Geren votes aye.
Mr. Rohrabacher.
Mr. ROHRABACHER. No.
The CLERK. Mr. Rohrabacher votes no.
Mr. Roemer.
[No response.]
The CLERK. Mr. Schiff.
Mr. SCHIFF. Here.
The CLERK. Mr. Schiff votes present.
Mr. Cramer.
Mr. CRAMER. Aye.
The CLERK. Mr. Cramer votes aye.
Mr. Barton.
Mr. BARTON. No.
The CLERK. Mr. Barton votes no.
Mr. Barcia.
[No response.]
The CLERK. Mr. Calvert.
Mr. CALVERT. No.
The CLERK. Mr. Calvert votes no.
Mr. McHale.
Mr. MCHALE. Aye.
The CLERK. Mr. McHale votes aye.
Mr. Baker.
Mr. BAKER. No.
The CLERK. Mr. Baker votes no.
Ms. Harman.
Ms. HARMAN. Aye.
The CLERK. Ms. Harman votes aye.
Mr. Bartlett.
Mr. BARTLETT. No.
The CLERK. Mr. Bartlett votes No.
Ms. Johnson.
[No response.]
The CLERK. Mr. Ehlers.
Mr. EHLERS. No.
The CLERK. Mr. Ehlers votes no.
Mr. Minge.
[No response.]
The CLERK. Mr. Wamp.
Mr. WAMP. Present.
The CLERK. Mr. Wamp votes present.
Mr. Olver.
Mr. OLVER. Yes.
The CLERK. Mr. Olver votes aye.
Mr. Weldon of Florida.
Mr. DAVE WELDON. No.
The CLERK. Mr. Weldon votes no.
Mr. Hastings.
[No response.]
The CLERK. Mr. Graham.
Mr. GRAHAM. No.
The CLERK. Mr. Graham votes no.
Ms. Rivers.

Ms. RIVERS. Aye.
The CLERK. Ms. Rivers votes aye.
Mr. Salmon.
Mr. SALMON. No.
The CLERK. Mr. Salmon votes no.
Ms. McCarthy.
Ms. MCCARTHY. Aye.
The CLERK. Ms. McCarthy votes aye.
Mr. Davis.
Mr. DAVIS. No.
The CLERK. Mr. Davis votes no.
Mr. Ward. (No response)
The CLERK. Mr. Stockman.
[No response.]
The CLERK. Ms. Lofgren.
[No response.]
The CLERK. Mr. Gutknecht.
Mr. GUTKNECHT. No.
The CLERK. Mr. Gutknecht votes no.
Mr. Doggett.
Mr. DOGGETT. Aye.
The CLERK. Mr. Doggett votes aye.
Mrs. Seastrand.
Ms. SEASTRAND. No.
The CLERK. Mrs. Seastrand votes no.
Mr. Doyle.
Mr. DOYLE. Aye.
The CLERK. Mr. Doyle votes aye.
Mr. Tiahrt.
Mr. TIAHRT. No.
The CLERK. Mr. Tiahrt votes no.
Ms. Jackson Lee.
Ms. JACKSON LEE. Aye.
The CLERK. Ms. Jackson Lee votes aye.
Mr. Largent.
[No response.]
The CLERK. Mr. Luther.
Mr. LUTHER. Aye.
The CLERK. Mr. Luther votes aye.
Mr. Hilleary.
Mr. HILLEARY. No.
The CLERK. Mr. Hilleary votes no.
Mrs. Cubin.
[No response.]
The CLERK. Mr. Foley.
[No response.]
The CLERK. Mrs. Myrick.
Ms. MYRICK. No.
The CLERK. Mrs. Myrick votes no.
Mr. ROEMER. Mr. Chairman, how am I recorded?
The CLERK. Mr. Roemer, you are not recorded.
Mr. ROEMER. Aye.
The CLERK. Mr. Roemer votes aye.
Mr. SCHIFF. Mr. Chairman.

The CHAIRMAN. Mr. Schiff.

Mr. SCHIFF. I would like to change my "present" to "no."

The CLERK. Mr. Schiff votes no.

Mr. WAMP. Mr. Chairman.

The CHAIRMAN. Mr. Wamp.

Mr. WAMP. I change my "present" to a "no."

The CLERK. Mr. Wamp votes no.

Ms. JOHNSON. Mr. Chairman, how am I recorded?

The CLERK. Ms. Johnson, you are not recorded.

Ms. JOHNSON. I vote aye.

The CLERK. Ms. Johnson votes aye.

The CHAIRMAN. Is Mr. Fawell recorded?

The CLERK. Mr. Fawell is not recorded.

Mr. FAWELL. No.

The CLERK. Mr. Fawell votes no.

The CHAIRMAN. The Clerk will report.

The CLERK. Mr. Chairman, I count 15 yeas, 21 nays.

The CHAIRMAN. The amendment is not agreed to.

The next amendment is Amendment No. 18.

Mr. Olver.

Mr. OLVER. Thank you, Mr. Chairman.

What we have just done is what was roughly a $3 billion program. We have limited it to that, and then asked the increase of the hydrogen program, which we are doing here, which is from an expenditure level of somewhere in the single digit numbers but, as I understand it, the proposed budget for next year by the President was something like $7.5 million, and that this year was certainly no more than $10 million; but historically it has been $10 million or under.

We are proposing here to increase in the first year to $25 million, and then in the second year to $30 million, and then to—excuse me. From the second year, it would be $35 million, and then to $40 million, which is a quadrupling of the research program.

I think there probably have been cases where research programs have been ramped up that quickly, a quadrupling of the expenditure on a research program, but I can't come up with any at the moment.

This is—while it is small sums of money, it is a very large increase in the authorization. The Advisory Committee, the Hydrogen Technology Advisory Panel, had proposed the numbers which I have offered in the amendment which is in the packet that is an increase to $21 million, $23 million, and $25 million, which is in itself at least a doubling of the amount to be expended on hydrogen research.

Certainly I think it reflects what kind of research, new research, thrust can be appropriately taken in over time, which seems to me to be quite large and ought to be quite adequate for the kind of change in priority that we are doing here.

What it ends up doing is saving about $40 million in what is now an authorization limit at $250 million below the budget proposed by the President in this area, and which is freezing it for several years in a row, which allows for that $40 million to be used in some of these other places that are otherwise going to be cut from

expectations and cut clearly from the levels that they were at in the previous years.

So I hope the amendment would be adopted.

The CHAIRMAN. The reality of this amendment is that what we have just decided is that we are not going to go any higher in the overall spending in the Department. This is just a question of how much priority you are going to put on hydrogen.

The gentleman does not think we ought to go as high as $25 million. I would remind the Committee that the fossil budget is about a half a billion. Solar is at $400 million. Fusion is at $390 million. Nuclear is at $300 million. Conservation, which does not even get us any kind of new supplies, is at $775 million.

So at $25 million this program is not even in the same league with most of the rest of these programs, and all we are attempting to do is, within that particular framework, trying to get some reprioritization.

The gentleman is fighting the old-order argument that suggests the Department ought to keep diminishing hydrogen and ought not allow this reprioritization to take place.

It seems to me, since we have now capped the overall spending, that we ought to now do what the bill was intended to do. That is, assure that the reprioritization is made real.

Are there—

Mr. OLVER. Mr. Chairman, may I respond to that.

I am certainly not fighting to keep the old order process of keeping hydrogen down. In fact, the authorization that I proposed, which is what the hydrogen technology advisory group, which is a group of industry people, scientists, and people from the Department, together, one-third of each, that had recommended themselves that should go up under this hydrogen legislation. Namely, $21- $23- and $25 million, which in each case is more than a doubling of what is expended now, and in the last case is more than three times what the President proposes for it.

The issue here is not that we are not reprioritizing. We clearly are. We have made that decision in reaching the agreements on the legislation today, amendment by amendment. But whether one can ramp up the research in this area three times, more than double, nearly triple in the third year, and triple what is presently being expended, and do that responsibly, versus—that in itself is a matter that is difficult, I think, and problematical, and the original authorization language suggests that it go up not only three times what the budget proposes for this year, but rather to go up five times what that budget has proposed.

I think that the amounts, given that others have to be cut in the process, would be quite adequate with the amendment.

The CHAIRMAN. Well I thank the gentleman for his further explanation. In my view, he does in fact diminish the prioritization here and I would hope the Committee would not approve the amendment.

Is there further discussion on the amendment.

[No response.]

The CHAIRMAN. If not, the Chairman will put the vote.

Those in favor of the amendment will say aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed will say no.
[Chorus of nays.]
The CHAIRMAN. In the opinion of the Chair the noes have it. The noes have it, and the amendment is not agreed to.
Mr. OLVER. Mr. Chairman, I ask for a roll call vote.
The CHAIRMAN. The Clerk will call the roll.
The CLERK. Mr. Walker.
The CHAIRMAN. No.
The CLERK. Mr. Walker votes no.
Mr. Brown.
Mr. BROWN. Aye.
The CLERK. Mr. Brown votes aye.
Mr. Sensenbrenner.
[No response.]
The CLERK. Mr. Hall.
[No response.]
The CLERK. Mr. Boehlert.
[No response.]
The CLERK. Mr. Traficant.
[No response.]
The CLERK. Mr. Fawell.
Mr. FAWELL. No.
The CLERK. Mr. Fawell votes no.
Mr. Hayes.
[No response.]
The CLERK. Mrs. Morella.
Mrs. MORELLA. No.
The CLERK. Mrs. Morella votes no.
Mr. Tanner.
Mr. TANNER. Aye.
The CLERK. Mr. Tanner votes aye.
Mr. Weldon of Pennsylvania.
Mr. CURT WELDON. No.
The CLERK. Mr. Weldon votes no.
Mr. Geren.
Mr. GEREN. Aye.
The CLERK. Mr. Geren votes aye.
Mr. Rohrabacher.
Mr. ROHRABACHER. No.
The CLERK. Mr. Rohrabacher votes no.
Mr. Roemer.
[No response.]
The CLERK. Mr. Schiff.
Mr. SCHIFF. No.
The CLERK. Mr. Schiff votes no.
Mr. Cramer.
Mr. CRAMER. Aye.
The CLERK. Mr. Cramer votes aye.
Mr. Barton.
[No response.]
The CLERK. Mr. Barcia.
[No response.]
The CLERK. Mr. Calvert.
Mr. CALVERT. No.

The CLERK. Mr. Calvert votes no.
Mr. McHale.
Mr. MCHALE. No.
The CLERK. Mr. McHale votes no.
Mr. Baker.
Mr. BAKER. No.
The CLERK. Mr. Baker votes no.
Mrs. Harman.
Mrs. HARMAN. No.
The CLERK. Ms. Harman votes no.
Mr. Bartlett.
Mr. BARTLETT. No.
The CLERK. Mr. Bartlett votes No.
Ms. Johnson.
Ms. JOHNSON. Aye.
The CLERK. Ms. Johnson votes aye.
Mr. Ehlers.
Mr. EHLERS. No.
The CLERK. Mr. Ehlers votes no.
Mr. Minge.
[No response.]
The CLERK. Mr. Wamp.
Mr. WAMP. No.
The CLERK. Mr. Wamp votes no.
Mr. Olver.
Mr. OLVER. Yes.
The CLERK. Mr. Olver votes aye.
Mr. Weldon of Florida.
Mr. DAVE WELDON. No.
The CLERK. Mr. Weldon votes no.
Mr. Hastings.
[No response.]
The CLERK. Mr. Graham.
Mr. GRAHAM. No.
The CLERK. Mr. Graham votes no.
Ms. Rivers.
Ms. RIVERS. Aye.
The CLERK. Ms. Rivers votes aye.
Mr. Salmon.
Mr. SALMON. No.
The CLERK. Mr. Salmon votes no.
Ms. McCarthy.
Ms. MCCARTHY. Aye.
The CLERK. Ms. McCarthy votes aye.
Mr. Davis.
Mr. DAVIS. No.
The CLERK. Mr. Davis votes no.
Mr. Ward. (No response)
The CLERK. Mr. Stockman.
[No response.]
The CLERK. Ms. Lofgren.
[No response.]
The CLERK. Mr. Gutknecht.
Mr. GUTKNECHT. No.

The CLERK. Mr. Gutknecht votes no.
Mr. Doggett.
Mr. DOGGETT. Aye.
The CLERK. Mr. Doggett votes aye.
Mrs. Seastrand.
Mrs. SEASTRAND. No.
The CLERK. Mrs. Seastrand votes no.
Mr. Doyle.
Mr. DOYLE. Aye.
The CLERK. Mr. Doyle votes aye.
Mr. Tiahrt.
Mr. TIAHRT. No.
The CLERK. Mr. Tiahrt votes no.
Ms. Jackson Lee.
Ms. JACKSON LEE. Aye.
The CLERK. Ms. Jackson Lee votes aye.
Mr. Largent.
[No response.]
The CLERK. Mr. Luther.
Mr. LUTHER. Aye.
The CLERK. Mr. Luther votes aye.
Mr. Hilleary.
Mr. HILLEARY. No.
The CLERK. Mr. Hilleary votes no.
Mrs. Cubin.
[No response.]
The CLERK. Mr. Foley.
Mr. FOLEY. No.
The CLERK. Mr. Foley votes no.
Mrs. Myrick.
Ms. MYRICK. No.
The CLERK. Mrs. Myrick votes no.
The CHAIRMAN. Does anybody else wish to be recorded?
Mr. ROEMER. Mr. Chairman, how am I recorded?
The CLERK. Mr. Roemer, you are not recorded.
Mr. ROEMER. Aye.
The CLERK. Mr. Roemer votes aye.
The CHAIRMAN. The Clerk will report.
The CLERK. Mr. Chairman, I count 13 yeas, 23 nays.
The CHAIRMAN. And the amendment is not agreed to.

The amendment in the package now, Mr. Brown, amendment number 19.

Mr. BROWN. Mr. Chairman, this is the most innocuous of all amendments. It changes the title to reflect what we had done in the bill.

We still apparently have a minor disagreement between you and me as to whether we ought to determine—or to use the word "research or "basic research" and my proposed change in the title would merely use the term "research development and demonstration."

I have made a slight concession. You have made a slight concession, but I would not look favorably upon what I understand you would prefer—and that is, to include the term "basic research" in

the title, because there is no basic research program in hydrogen in the Department of Energy.

They refer to a "research program," but in their itemized accounting where they allocate that to basic research, applied research, and so forth, they have zero for basic research.

Under those circumstances, I think for the title to use the term "basic research" kind of stretches what is going on.

The CHAIRMAN. Well, I thank the gentleman.

I thought our purpose here was to reprioritize what the Department is doing and tell them to do something new. One of the reasons for doing that—and earlier I accepted Mr. Olver's findings based upon the fact that he did put the word "basic" in, and I was just trying to give us a kind of collateral title to reflect what the findings now say based upon Mr. Olver's amendments.

Mr. BROWN. Would the gentleman permit me a biting comment at this point?

The CHAIRMAN. Sure.

[Laughter.]

Mr. BROWN. I think what the gentleman is trying to do is to include what for most conservative Republicans is politically correct language, but which means basic research because that is politically correct. Research, Development, and Demonstration, you have had to make quite a stretch to include that and I appreciate it. But I think this is a retrogressive step to put in a title something that doesn't exist in the Department.

The CHAIRMAN. But we are in fact creating a program for the Department. Why can't we create a basic research program in hydrogen for the Department? That is exactly what we are doing here. We ought to have the title reflect that. We have agreed to put the demonstration in to reflect that, but on the other hand I agree with the gentleman. That is not what the Department is doing now.

We think it is what they ought to do in the future.

Mr. DOGGETT. Will the Ranking Member yield?

The CHAIRMAN. Sure. I'd be happy to yield to the gentleman.

Mr. DOGGETT. Mr. Brown.

Mr. BROWN. I am the Ranking Member. Remember, Mr. Walker, I am the Ranking Member.

[Laughter.]

The CHAIRMAN. But I control the time, so * * *

Mr. BROWN. Oh, okay.

Mr. DOGGETT. Mr. Brown, would you accept a friendly amendment to your amendment to call this "Industrial Policy"?

[Laughter.]

Mr. BROWN. No, actually in the best of spirits, I am not even going to object too much to the proposed change because Mr. Walker has been accommodating, but I think it is a semantic thing. In the interests of Truth in Titling, I think he is wrong, but in terms of practical impact I think it may serve to get the Department to change.

But the Department's view is that practically all the basic research on hydrogen has already been done.

The CHAIRMAN. Well, again, I think the Department certainly has a view of that type. That's the reason why they haven't done any work on it in the last 20 years.

I would be happy to yield to the gentleman from Michigan.

Mr. EHLERS. Thank you, Mr. Chairman.

If indeed the Department of Energy does not have any money for basic research, I think we need far stronger legislation than we have here.

But at the same time, I believe they do do a great deal of basic research and they are not being truthful if they are not referring to it in that way.

Thank you.

The CHAIRMAN. I thank the gentleman.

Mr. BROWN. Does the gentleman want to amend my amendment?

The CHAIRMAN. My preference would be to add the word "basic" in front of the word "research" in your amendment, and then it would also include "Demonstration" and I think that that point would reflect the nature of the bill.

The gentleman asks unanimous consent that the amendment be modified.

Mr. BROWN. Which gentleman.

The CHAIRMAN. The gentleman from Pennsylvania.

Mr. BROWN. The gentleman from Pennsylvania asks unanimous consent?

The CHAIRMAN. That the amendment be modified.

Is there objection?

[No response.]

The CHAIRMAN. Without objection, the amendment is modified to include the word "basic."

Is there further discussion on the amendment?

[No response.]

The CHAIRMAN. The Chair will put the question.

Those in favor of the amendment will say aye?

[Chorus of ayes.]

The CHAIRMAN. Those opposed will say no.

[No response.]

The CHAIRMAN. The amendment is agreed to.

Ms. MCCARTHY. Mr. Chairman.

The CHAIRMAN. That completes the amendment package.

Ms. McCarthy.

Ms. MCCARTHY. Would it be in order to suggest some language for the report based on our conversation with regard to defining entrepreneurs and small businesses, as we discussed?

I did not want to offer an amendment without it being thoroughly prepared, but I wondered if it would be in order to suggest the language for the report?

The CHAIRMAN. Well we will be happy to work with the gentlelady on report language, and so on. I know the topic that she has, and I think that the Committee has agreed at this point that some report language in that regard would be useful.

Ms. MCCARTHY. Thank you, Mr. Chairman.

Mr. BROWN. Mr. Chairman.

The CHAIRMAN. The gentleman from California.

Mr. BROWN. May I make the broader request that the Committee have three days within which all Members may file separate, dissenting, or additional views for inclusion in the report?

The CHAIRMAN. Without objection.

Mr. BROWN. Mr. Chairman, I move the Committee report the Bill H.R. 655 to the House as Amended with a recommendation that it pass, and furthermore I move to instruct the staff to prepare the legislative report and make technical and conforming changes.

The CHAIRMAN. The Committee has heard the motion.

Those in favor will say aye.

[Chorus of ayes.]

The CHAIRMAN. Those opposed, no.

[No response.]

The CHAIRMAN. The motion is agreed to. And without objection, the motion to reconsider is laid upon the table.

Mr. BROWN. That's the way to do it.

The CHAIRMAN. The Chair will declare the Committee adjourned.

[Whereupon, at 3:50 p.m., the Committee was adjourned, subject to the Call of the Chair.]

APPENDIX

February 13, 1995

EXTENSION OF REMARKS SUBMITTED TO THE HOUSE COMMITTEE ON SCIENCE

BY CONGRESSMAN ZACH WAMP

Mr. Chairman. I believe H.R. 655, the Hydrogen Future Act of 1995, guides this country in the right direction in the search for new and better energy sources. Hydrogen is a clean energy source that holds great promise in our effort to reduce this country's dependency on foreign oil.

Although I fully support the goal of this bill, I remain concerned over its funding mechanism. As passed, the bill is funded by freezing the Department of Energy's Energy Supply R&D account at the FY 95 level. Moreover, the FY 95 Energy Supply R&D account provided over $300 million in funds for the Oak Ridge facilities in such areas as Nuclear Safety Policy, Biological and Environmental Research, and Basic Energy Sciences.

While I fully support the need for Congress to restore accountability and fiscal responsibility to government spending, it is important that we not overlook the need for government to maintain a strong commitment to the field of basic science. During my time here in Congress I want to make sure we do not neglect such critical areas.

Thank you, Mr. Chairman.

104th Congress
Committee on Science

Date: 2/10/95

Time: Open _____ Adjourn _____

********************ROLL CALL******************

Subject: Amendment by Mr. Brown

Rm.	Phone	Name	Present	Absent	Yes	Nay	Not Voting
2369	52411	Mr. Walker, PA				✓	
2300	56161	Mr. Brown, CA			✓		
2352	55101	Mr. Sensenbrenner, WI					
2236	56673	Mr. Hall, TX					
2246	53665	Mr. Boehlert, NY					
2446	53261	Mr. Traficant, OH				✓	
2159	53515	Mr. Fawell, IL				✓	
2432	52831	Mr. Hayes, LA				✓	
106	53341	Mrs. Morella, MD			✓	✓	
1127	54934	Mr. Tanner, TN			✓	✓	
2452	52011	Mr. Curt Weldon, PA			✓	✓	
2448	55071	Mr. Green, TX			✓	✓	
2338	52415	Mr. Rohrabacher, CA			✓	✓	
407	55915	Mr. Roemer, IN			✓	✓	
2404	56316	Mr. Schiff, NM				✓	
236	54801	Mr. Cramer, AL			✓	✓	
2264	52002	Mr. Barton, TX				✓	
1410	58171	Mr. Barcia, MI				✓	
1034	51986	Mr. Calvert, CA			✓	✓	
217	56411	Mr. McHale, PA			✓		
1724	51880	Mr. Baker, CA			✓	✓	
325	58220	Mr. Harman, CA			✓	✓	
322	52721	Mr. Bartlett, MD			✓	✓	
1123	58885	Ms. Johnson, TX			✓	✓	
1717	53831	Mr. Ehlers, MI				✓	
1415	52331	Mr. Minge, MN				✓	
423	53271	Mr. Wamp, TN			✓	✓	
1027	55335	Mr. Olver, MA			✓	✓	
216	53671	Mr. Dave Weldon, FL				✓	
1039	51313	Mr. Hastings, FL				✓	
1429	55301	Mr. Graham, SC			✓	✓	
1116	56261	Ms. Rivers, MI			✓	✓	
115	52635	Mr. Salmon, AZ			✓	✓	
1232	54535	Ms. McCarthy, MO			✓	✓	
415	51492	Mr. Davis, VA				✓	
1032	55401	Mr. Ward, KY					
417	56565	Mr. Stockman, TX					
118	55072	Ms. Lofgren, CA				✓	
425	52472	Mr. Gutknecht, MN				✓	
126	54865	Mr. Doggett, TX			✓		
1216	53601	Mrs. Seastrand, CA				✓	
1218	52135	Mr. Doyle, PA			✓	✓	
1319	56216	Mr. Tiahrt, KS			✓	✓	
1520	53816	Ms. Jackson Lee, TX			✓		
410	52211	Mr. Largent, OK			✓		
1419	52271	Mr. Luther, MN			✓		
114	56851	Mr. Hilleary, TN				✓	
1114	52311	Mrs. Cubin, WY					
506	55792	Mr. Foley, FL				✓	
509	51976	Mrs. Myrick, NC				✓	
		Total			15	21	

Attest: Jan J. Pierce (Chief Clerk)

104th Congress
Committee on Science

Date: 6/14/95

Time: Open _____ Adjourn _____

******************ROLL CALL******************

Subject: AMENDMENT OFFERED BY MR. OLVER

Rm.	Phone	Name	Present	Absent	Yes	Nay	Not Voting
2369	52411	Mr. Walker, PA				✓	
2300	56161	Mr. Brown, CA			✓		
2332	55101	Mr. Sensenbrenner, WI					
2236	56875	Mr. Hall, TX					
2246	55665	Mr. Boehlert, NY					
2446	55261	Mr. Tauzin, OH				✓	
2159	55515	Mr. Fowell, IL				✓	
2432	52031	Mr. Hayes, LA				✓	
106	55541	Mrs. Morella, MD			✓	✓	
1127	54714	Mr. Tanner, TN			✓	✓	
2452	52011	Mr. Curt Weldon, PA				✓	
2448	55071	Mr. Green, TX			✓	✓	
2338	52415	Mr. Rohrabacher, CA				✓	
407	55915	Mr. Roemer, IN			✓	✓	
2404	56316	Mr. Schiff, NM			✓	✓	
236	54801	Mr. Cramer, AL			✓		
2264	52002	Mr. Barton, TX					
1410	58171	Mr. Bartlett, MD				✓	
1034	51986	Mr. Calvert, CA				✓	
217	56411	Mr. McHale, PA				✓	
1724	51880	Mr. Baker, CA				✓	
325	58220	Ms. Harman, CA				✓	
322	52721	Mr. Bartlett, MD				✓	
1123	58885	Ms. Johnson, TX			✓	✓	
1717	53831	Mr. Ehlers, MI				✓	
1415	52331	Mr. Minge, MN				✓	
423	53271	Mr. Wamp, TN			✓	✓	
1027	55335	Mr. Olver, MA			✓	✓	
216	53671	Mr. Dave Weldon, FL				✓	
1039	51313	Mr. Hastings, FL				✓	
1429	55301	Mr. Graham, SC			✓	✓	
1116	58261	Ms. Rivers, MI			✓	✓	
115	52635	Mr. Salmon, AZ			✓	✓	
1232	54535	Ms. McCarthy, MO			✓	✓	
415	51492	Mr. Davis, VA				✓	
1032	55401	Mr. Ward, KY					
417	58565	Mr. Stockman, TX					
118	53072	Ms. Lofgren, CA				✓	
425	52472	Mr. Gutknecht, MN				✓	
126	54865	Mr. Doggett, TX			✓	✓	
1216	53401	Mrs. Seastrand, CA				✓	
1218	52135	Mr. Doyle, PA			✓	✓	
1319	58216	Mr. Tiahrt, KS				✓	
1520	53816	Ms. Jackson Lee, TX			✓		
410	52211	Mr. Largent, OK			✓		
1419	52271	Mr. Luther, MN				✓	
114	54831	Mr. Hilleary, TN				✓	
1114	52511	Mrs. Cubin, WY				✓	
506	55792	Mr. Foley, FL				✓	
509	51976	Mr. Myrick, NC				✓	
		Total			13	23	

Attest: Sam D. Pope (Chief Clerk)

XVII. Reports to Congress

SEC 8. REPORTS TO CONGRESS.

Within 18 months after the date of the enactment of this Act, and annually thereafter, the Secretary shall transmit to the Congress a detailed report on the status and progress of the Department's hydrogen research and development program. Such report shall include an analysis of the effectiveness of such program, to be prepared and submitted by the Hydrogen Technical Advisory Panel established under section 108 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990. Such Panel shall also make recommendations for improvements to such program if needed, including recommendations for additional legislation.

ADDITIONAL VIEWS

SUMMARY

There is strong bipartisan support for hydrogen research, development, and demonstration on the Committee on Science, but there are significant differences of opinion regarding specific provisions of the Hydrogen Future Act. We do not agree with provisions in the bill which provide for a steep increase in funding, which limit other Energy Supply R&D activities of the Department, and which constrain the types of R&D that the government may support in moving toward a hydrogen future. We unsuccessfully attempted to correct these problems during the committee markup and will no doubt try again when the bill reaches the Floor. We also are puzzled why the Majority values hydrogen research higher than all other Federally supported research and development as evidenced by the decision to move no other authorization bills in advance of the budget resolution and appropriations reductions in research programs.

GENERAL PHILOSOPHY OF THE BILL

The course that H.R. 655 has followed since its introduction reflects some of the confusion created when static political ideology interacts with the dynamic world of research and development.

The bill as introduced on January 24, 1995 was a detailed blueprint that mandated funding for about 15 specific hydrogen demonstration projects, including projects designed to demonstrate economic feasibility. The focus of the program was clearly on the applied portion of the R&D spectrum, and the proposed central government planning and funding was fare more interventionist than the industry-led partnerships that the Republican Majority currently finds so objectionable in the Department of Commerce and the Department of Defense. The major difference between H.R. 655 and the organic legislation establishing those Commerce and Defense programs was that H.R. 655 provided a specific list of sanctioned demonstration projects in sharp contrast to the role that industry plays in choosing the most promising areas for Department of Commerce Advanced Technology Program solicitations. In effect, H.R. 655 was Congress picking technological winners and losers.

The criticism of this approach was predictable. And, perhaps in response, the Chairman's markup substitute dropped reference to specific demonstration projects in order to emphasize "research and development on basic scientific fundamentals [related] to hydrogen". Unfortunately, "basic scientific fundamentals" was never defined, perhaps because it is undefinable.

In the product that has emerged from Committee, the scope of the program encompasses "basic research, development, and demonstration" of hydrogen. We interpret this language in a way which

would not exclude *applied* research. In fact, we interpret the bill as reported to authorize a very broad, competitively awarded hydrogen RD&D program which relies heavily on government-industry partnerships and cost-sharing. It very much reminds us, and appropriately so, of the highly successful Advanced Technology Program in the Department of Commerce and the Technology Reinvestment Program in the Department of Defense.

In short, despite these lurches in policy direction, we have managed to report a practical bill that should provide significant impetus to the hydrogen program at the Department of Energy. As much as the Republican Majority may use semantic devices to conform the program to preconceived notions concerning what constitutes politically correct research, the reality is that the program as reported looks very much like a page out of President Clinton's technology policy book.

SPECIFIC PROVISIONS IN THE BILL

In terms of specific changes that were made during the markup, we appreciate the Committee's willingness to accept our amendments to (1) affirm the Department's ability to support hydrogen demonstration projects, (2) conform the bill to General Agreement on Tariffs and Trade, (3) avoid duplication of effort and of private sector capabilities, and (4) put in place a cost-sharing formula that is more favorable to the government and the taxpayer. We are also pleased to see removed from the bill three erroneous assertions: (1) that hydrogen is potentially a major energy source; (2) that we are now ready to conduct hydrogen energy demonstrations across a wide spectrum of end uses; and (3) that industry will have already demonstrated the technical feasibility of these technologies by the year 2000. We believe that if hydrogen were so promising and so near-term, a flood of private sector investment would already be ushering in the hydrogen future without the government lifting a finger.

Again, as introduced, the bill contained the paradoxical and contradictory views that hydrogen development is near-term but basic research questions must still be addressed to develop a hydrogen economy. The emphasis on basic research, which remains in the bill as reported, ignores not only the testimony of the expert witness panel, but also the fact that the basic chemistry of hydrogen has been well understood since before the Revolutionary War, and that a plethora of hydrogen applications have been pursued throughout the 20th Century.

Although the development of hydrogen technologies does not depend on basic research, it does require significant investment in applied research, development, and demonstration activities. Hydrogen is not just around the corner as a major fuel. While hydrogen is a common element, it is generally found in combination with other elements and substantial amounts of energy must be expended to make hydrogen into fuel. Hydrogen fuel, for some time to come, will be made from natural gas or coal with a substantial loss of energy. It will make sense as a fuel only in those applications where environmental or performance characteristics will cause customers to pay a premium and to overlook the difficulties we now experience in storing and transporting hydrogen.

Hydrogen is much more likely to become a major fuel if it can be made using renewable energy or other sources, but even then its popularity is uncertain. To be competitive, hydrogen must prove to be more useful, convenient, or cheaper than other fuels then on the market, including other fuels derived from renewable energy or other sources, and must not involve prohibitive new infrastructure costs. Last September, in response to a question for the record by Representative Lloyd, the Department of Energy predicted that it would take five to seven years for a near-term hydrogen demonstration to be completed in the transportation sector, 15 to 20 years for an industrial demonstration, and as long as 25 to 30 years for a demonstration in the utility sector. Demonstrations outside the transportation sector are therefore probably premature and should be given a lower priority.

We would feel more comfortable with the Hydrogen Future Act if the program were receiving more direction from those companies which want to be part of a U.S.-based hydrogen industry. We would like to see priority attention given to the transportation demonstrations our industry witnesses have requested; to innovative, renewable energy-based methods of producing hydrogen; and to solving those problems U.S. industry identifies as likely roadblocks to the production, storage, transport, and use of hydrogen fuels.

In addition, at a time of massive spending cuts throughout the government, we frankly are uncomfortable authorizing more funding for the hydrogen program than either the Hydrogen Technology Advisory Panel or the President has requested. The Advisory Panel request levels are $21 million in FY 1996, $23 million in FY 1997, and $25 million in FY 1998. Without further direction from the Panel and more information from DOE, it is unclear at present whether the Department will effectively spend the additional $30 million authorized in the bill.

Finally, we are bothered by the bill's arbitrary spending cap which has the potential for hurting DOE's Energy Supply Research and Development efforts across a wide spectrum of energy technologies. These programs have long-term payoffs that will most likely overwhelm the initial Federal investment and are important to the long-term health of the Nation. Even if a cap of some sort made sense, we have no way of knowing the true impact of this provision. At the time that the bill was reported, the Committee had held no hearings during this Congress on the relative merits of these programs and had no legislative record for justifying such a cap, nor could anyone tell us what the dollar figures on the cap would actually be. The Congress should avoid rushing into arbitrary decisions; they invariably come back to haunt us in ways we never expect.

In closing, we would like to indicate our appreciation for the level of bipartisan cooperation which has brought us this far on the Hydrogen Future Act. We hope that our additional amendments will be considered with an open mind, and that we will be able to leave the floor of the House of Representatives with an improved bill that we all can support.

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ADDITIONAL VIEWS BY HON. JOHN S. TANNER

In general, I support the Democratic additional views on the Hydrogen Future Act. I think one point requires further clarification. In some instances, spending caps are needed to spur agencies to prioritize amongst programs.

However, the approach in the Hydrogen Future Act blindly prioritizes the Department of Energy's energy supply research portfolio without any attempt to assess the benefits and costs of pursuing hydrogen research among the entire range of research options. Thus, currently supported energy programs that have undergone this prioritization will be abruptly curtailed to pay for an expanded hydrogen research program. Meaningful, constructive research at various laboratories around the nation will pay the price without regard to merit or value. This is not good public policy.

JOHN TANNER.

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