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107TH CONGRESS
1ST SESSION

H. R. 2460

To authorize appropriations for environmental research and development, scientific and energy research, development, and demonstration, and commercial application of energy technology programs, projects, and activities of the Department of Energy and of the Office of Air and Radiation of the Environmental Protection Agency, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JULY 11, 2001

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

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A BILL

To authorize appropriations for environmental research and development, scientific and energy research, development, and demonstration, and commercial application of energy technology programs, projects, and activities of the Department of Energy and of the Office of Air and Radiation of the Environmental Protection Agency, 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; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ''Comprehensive Energy Research and Technology Act of 2001''.

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

SEC. 2. FINDINGS.

The Congress finds that—

(1) the Nation's prosperity and way of life are sustained by energy use;

(2) the growing imbalance between domestic energy production and consumption means that the Nation is becoming increasingly reliant on imported energy, which has the potential to undermine the Nation's economy, standard of living, and national security;

(3) energy conservation and energy efficiency help maximize the use of available energy resources, reduce energy shortages, lower the Nation's reliance on energy imports, mitigate the impacts of high energy prices, and help protect the environment and public health;

(4) development of a balanced portfolio of domestic energy supplies will ensure that future generations of Americans will have access to the energy they need;

(5) energy efficiency technologies, renewable and alternative energy technologies, and advanced

energy systems technologies will help diversify the Nation's energy portfolio with few adverse environmental impacts and are vital to delivering clean energy to fuel the Nation's economic growth;

(6) development of reliable, affordable, and environmentally sound energy efficiency technologies, renewable and alternative energy technologies, and advanced energy systems technologies will require maintenance of a vibrant fundamental scientific knowledge base and continued scientific and technological innovations that can be accelerated by Federal funding, whereas commercial deployment of such systems and technologies are the responsibility of the private sector;

(7) Federal funding should focus on those programs, projects, and activities that are long-term, high-risk, noncommercial, and well-managed, and that provide the potential for scientific and technological advances; and

(8) public-private partnerships should be encouraged to leverage scarce taxpayer dollars.

SEC. 3. PURPOSES.

The purposes of this Act are to—

(1) protect and strengthen the Nation's economy, standard of living, and national security by reducing dependence on imported energy;

(2) meet future needs for energy services at the lowest total cost to the Nation, including environmental costs, giving balanced and comprehensive consideration to technologies that improve the efficiency of energy end uses and that enhance energy supply;

(3) reduce the air, water, and other environmental impacts (including emissions of greenhouse gases) of energy production, distribution, transportation, and use through the development of environmentally sustainable energy systems;

(4) consider the comparative environmental impacts of the energy saved or produced by specific programs, projects, or activities;

(5) maintain the technological competitiveness of the United States and stimulate economic growth through the development of advanced energy systems and technologies;

(6) foster international cooperation by developing international markets for domestically produced sustainable energy technologies, and by transferring environmentally sound, advanced energy sys-

tems and technologies to developing countries to promote sustainable development;

(7) provide sufficient funding of programs, projects, and activities that are performance-based and modeled as public-private partnerships, as appropriate; and

(8) enhance the contribution of a given program, project, or activity to fundamental scientific knowledge.

SEC. 4. GOALS.

(a) IN GENERAL.—The Secretary shall perform an assessment that establishes cost and performance-based goals, as appropriate, for 2005, 2010, 2015, and 2020 for each of the programs, projects, and activities authorized by this Act that would enable each such program, project, or activity to meet to the purposes of this Act under section 3. Such assessment shall be based on the latest scientific and technical knowledge, and shall also take into consideration, as appropriate, the comparative environmental impacts (including emissions of greenhouse gases) of the energy saved or produced by specific programs, projects, and activities.

(b) CONSULTATION.—In establishing the cost and performance-based goals under subsection (a), the Secretary shall consult with the private sector, institutions of

higher learning, national laboratories, environmental organizations, professional and technical societies, and any other persons as the Secretary considers appropriate.

(c) SCHEDULE.—The Secretary shall—

(1) not later than 120 days after the date of the enactment of this Act, issue and publish in the Federal Register a set of draft cost and performance-based goals for public comment;

(2) not later than 180 days after the date of the enactment of this Act, after taking into consideration any public comments received, transmit to Congress and publish in the Federal Register the final cost and performance-based goals; and

(3) update all such cost and performance-based goals on a biennial basis.

SEC. 5. DEFINITIONS.

For purposes of this Act, except as otherwise provided—

(1) the term ''Administrator'' means the Administrator of the Environmental Protection Agency;

(2) the term ''appropriate congressional committees'' means—

(A) the Committee on Science and the Committee on Appropriations of the House of Representatives; and

(B) the Committee on Energy and Natural Resources and the Committee on Appropriations of the Senate;

(3) the term ''Department'' means the Department of Energy; and

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

SEC. 6. AUTHORIZATIONS.

Authorizations of appropriations under this Act are for environmental research and development, scientific and energy research, development, and demonstration, and commercial application of energy technology programs, projects, and activities.

SEC. 7. SENSE OF CONGRESS.

It is the sense of the Congress that the balance of funding priorities among the various programs authorized by this Act should remain as provided in this Act, regardless of the total amount of funding made available for this Act.

TITLE I—ENERGY CONSERVATION AND ENERGY EFFICIENCY

Subtitle A—Alternative Fuel Vehicles

SEC. 101. SHORT TITLE.

This subtitle may be cited as the ''Alternative Fuel Vehicle Acceleration Act of 2001''.

SEC. 102. DEFINITIONS.

For the purposes of this subtitle, the following definitions apply:

(1) ALTERNATIVE FUEL VEHICLE.—

(A) IN GENERAL.—Except as provided in subparagraph (B), the term ''alternative fuel vehicle'' means a motor vehicle that is powered—

(i) in whole or in part by electricity, including electricity supplied by a fuel cell;

(ii) by liquefied natural gas;

(iii) by compressed natural gas;

(iv) by liquefied petroleum gas;

(v) by hydrogen; or

(vi) by methanol at no less than 85 percent by volume.

(B) EXCLUSIONS.—The term ''alternative fuel vehicle'' does not include—

(i) any vehicle designed to operate solely on gasoline or diesel derived from fossil fuels, regardless of whether it can also be operated on an alternative fuel; or

(ii) any vehicle that the Secretary determines, by rule, does not yield substantial environmental benefits over a vehicle operating solely on gasoline or diesel derived from fossil fuels.

(2) PILOT PROGRAM.—The term ''pilot program'' means the competitive grant program established under section 103.

SEC. 103. PILOT PROGRAM.

(a) ESTABLISHMENT.—The Secretary shall establish an alternative fuel vehicle energy demonstration and commercial application of energy technology competitive grant pilot program to provide not more than 15 grants to State governments, local governments, or metropolitan transportation authorities to carry out a project or projects for the purposes described in subsection (b).

(b) GRANT PURPOSES.—Grants under this section may be used for the following purposes:

(1) The acquisition of alternative fuel vehicles, including—

(A) passenger vehicles;

(B) buses used for public transportation or transportation to and from schools;

(C) delivery vehicles for goods or services;

(D) ground support vehicles at public airports, including vehicles to carry baggage or push airplanes away from terminal gates; and

(E) motorized two-wheel bicycles, scooters, or other vehicles for use by law enforcement personnel or other State or local government or metropolitan transportation authority employees.

(2) Infrastructure necessary to directly support a project funded by the grant, including fueling and other support equipment.

(3) Operation and maintenance of vehicles, infrastructure, and equipment acquired as part of a project funded by the grant.

(c) APPLICATIONS.—

(1) REQUIREMENTS.—The Secretary shall issue requirements for applying for grants under the pilot program. At a minimum, the Secretary shall require that applications be submitted by the head of a

State or local government or a metropolitan transportation authority, or any combination thereof, and shall include—

(A) at least one project to enable passengers or goods to be transferred directly from one alternative fuel vehicle to another in a linked transportation system;

(B) a description of the projects proposed in the application, including how they meet the requirements of this subtitle;

(C) an estimate of the ridership or degree of use of the projects proposed in the application;

(D) an estimate of the air pollution emissions reduced and fossil fuel displaced as a result of the projects proposed in the application, and a plan to collect and disseminate environmental data, related to the projects to be funded under the grant, over the life of the projects;

(E) a description of how the projects proposed in the application will be sustainable without Federal assistance after the completion of the term of the grant;

(F) a complete description of the costs of each project proposed in the application, includ-

ing acquisition, construction, operation, and maintenance costs over the expected life of the project; and

(G) a description of which costs of the projects proposed in the application will be supported by Federal assistance under this subtitle.

(2) PARTNERS.—An applicant under paragraph (1) may carry out projects under the pilot program in partnership with public and private entities.

(d) SELECTION CRITERIA.—In evaluating applications under the pilot program, the Secretary shall consider each applicant's previous experience involving alternative fuel vehicles and shall give priority consideration to applications that—

(1) are most likely to maximize protection of the environment;

(2) demonstrate the greatest commitment on the part of the applicant to ensure funding for the proposed projects and the greatest likelihood that each project proposed in the application will be maintained or expanded after Federal assistance under this subtitle is completed; and

(3) exceed the minimum requirements of subsection (c)(1)(A).

(e) PILOT PROJECT REQUIREMENTS.—

(1) MAXIMUM AMOUNT.—The Secretary shall not provide more than $20,000,000 in Federal assistance under the pilot program to any applicant.

(2) COST SHARING.—The Secretary shall not provide more than 50 percent of the cost, incurred during the period of the grant, of any project under the pilot program.

(3) MAXIMUM PERIOD OF GRANTS.—The Secretary shall not fund any applicant under the pilot program for more than 5 years.

(4) DEPLOYMENT AND DISTRIBUTION.—The Secretary shall seek to the maximum extent practicable to achieve nationwide deployment of alternative fuel vehicles through the pilot program, and shall ensure a broad geographic distribution of project sites.

(5) TRANSFER OF INFORMATION AND KNOWLEDGE.—The Secretary shall establish mechanisms to ensure that the information and knowledge gained by participants in the pilot program are transferred among the pilot program participants and to other interested parties, including other applicants that submitted applications.

(f) SCHEDULE.—

(1) PUBLICATION.—Not later than 90 days after the date of enactment of this Act, the Secretary shall publish in the Federal Register, Commerce Business Daily, and elsewhere as appropriate, a request for applications to undertake projects under the pilot program. Applications shall be due within 180 days of the publication of the notice.

(2) SELECTION.—Not later than 180 days after the date by which applications for grants are due, the Secretary shall select by competitive, peer review all applications for projects to be awarded a grant under the pilot program.

SEC. 104. REPORTS TO CONGRESS.

(a) INITIAL REPORT.—Not later than 60 days after the date grants are awarded under this subtitle, the Secretary shall transmit to the Committee on Science of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report containing—

(1) an identification of the grant recipients and a description of the projects to be funded;

(2) an identification of other applicants that submitted applications for the pilot program; and

(3) a description of the mechanisms used by the Secretary to ensure that the information and knowl-

edge gained by participants in the pilot program are transferred among the pilot program participants and to other interested parties, including other applicants that submitted applications.

(b) EVALUATION.—Not later than 3 years after the date of enactment of this Act, and annually thereafter until the pilot program ends, the Secretary shall transmit to the Committee on Science of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report containing an evaluation of the effectiveness of the pilot program, including an assessment of the benefits to the environment derived from the projects included in the pilot program as well as an estimate of the potential benefits to the environment to be derived from widespread application of alternative fuel vehicles.

SEC. 105. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary $200,000,000 to carry out this subtitle, to remain available until expended.

Subtitle B—Distributed Energy Resources

SEC. 121. DISTRIBUTED ENERGY RESOURCES RESEARCH, DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION.

(a) IN GENERAL.—The Secretary shall develop and implement a comprehensive and cooperative research, development, demonstration, and commercial application program to ensure the reliability, efficiency, and environmental responsibility of distributed energy resources. Such program shall include advanced energy technologies and systems, advanced grid reliability technologies development, and technology transfer and education.

(b) AREAS.—(1) In carrying out this subtitle, the Secretary shall consider research, development, and demonstration on and commercial application of distributed energy resources, advanced systems development, and advanced electrical grid reliability for each of the following:

(A) Significant advancement in efficiency for distributed energy resources technologies.

(B) Significant advancement in efficiency for thermally activated technologies.

(C) Significant advancement in reduction of environmental impact by deploying pollution prevention enabling technologies

(2) The program should include the following areas:

(A) Integration of the following technologies into distributed energy resources systems:

(i) Renewable energy resources, including bioenergy, geothermal, solar, and wind.

(ii) Fuel cells.

(iii) Combined heat and power systems.

(iv) Microturbines.

(v) Advanced natural gas turbines.

(vi) Advanced internal combustion engine generators.

(vii) Energy storage devices.

(viii) Any other technologies, as appropriate.

(B) Interconnection standards, protocols, and equipment.

(C) Ancillary equipment for dispatch and control.

SEC. 122. PROGRAM PLAN.

Within 120 days after the date of the enactment of this Act, the Secretary, in consultation with other appropriate Federal agencies, shall prepare and transmit to Congress a 5-year program plan to guide activities under this subtitle. In preparing the program plan, the Secretary shall consult with appropriate representatives of the dis-

tributed energy resources industry to select and prioritize appropriate project proposals. The Secretary may also seek the advice of utilities, energy services providers, manufacturers, institutions of higher learning, other appropriate State and local agencies, environmental organizations, professional and technical societies, and any other persons as the Secretary considers appropriate. In order to ensure that technologies are readily adopted by private entities, the Secretary shall create cost-sharing programs with private entities.

SEC. 123. REPORT.

Two years after the date of the enactment of this Act, and at two year intervals thereafter, the Secretary, jointly with other appropriate Federal agencies, shall transmit a report to Congress describing the progress made to achieve the purposes of this subtitle and identifying any additional resources needed to continue the development and commercial application of distributed energy resources.

Subtitle C—Department of Energy Authorization of Appropriations

SEC. 131. AUTHORIZATION OF APPROPRIATIONS.

(a) OPERATION AND MAINTENANCE.—In addition to amounts authorized to be appropriated under section 105 and under subtitle E, there are authorized to be appro-

priated to the Secretary for subtitle B and for Energy Conservation operation and maintenance (including Building Technology, State and Community Sector, Industry Sector, Transportation Sector, Power Technologies, and Policy and Management) $600,000,000 for fiscal year 2002, $700,000,000 for fiscal year 2003, and $800,000,000 for fiscal year 2004, to remain available until expended.

(b) LIMITS ON USE OF FUNDS.—None of the funds authorized to be appropriated in subsection (a) may be used for—

(1) Building Technology, State and Community Sector—

(A) Residential Building Energy Codes;

(B) Commercial Building Energy Codes;

(C) Lighting and Appliance Standards;

(D) Weatherization Assistance Program; or

(E) State Energy Program; or

(2) Federal Energy Management Program.

Subtitle D—Environmental Protection Agency Office of Air and Radiation Authorization of Appropriations

SEC. 141. SHORT TITLE.

This subtitle may be cited as the ''Environmental Protection Agency Office of Air and Radiation Authorization Act of 2001''.

SEC. 142. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Administrator for the Office of Air and Radiation $156,700,000 for fiscal year 2002, $163,000,000 for fiscal year 2003, and $169,400,000 for fiscal year 2004 to remain available until expended, of which—

(1) $28,300,000 for fiscal year 2002, $29,400,000 for fiscal year 2003, and $30,600,000 for fiscal year 2004 shall be for Science; and

(2) $128,400,000 for fiscal year 2002, $133,600,000 for fiscal year 2003, and $138,800,000 for fiscal year 2004 shall be for Climate Change Protection Programs, of which—

(A) $52,700,000 for fiscal year 2002, $54,800,000 for fiscal year 2003, and $57,000,000 for fiscal year 2004 shall be for Buildings;

(B) $32,400,000 for fiscal year 2002, $33,700,000 for fiscal year 2003, and $35,000,000 for fiscal year 2004 shall be for Transportation;

(C) $32,000,000 for fiscal year 2002, $33,300,000 for fiscal year 2003, and $34,600,000 for fiscal year 2004 shall be for Industry;

(D) $1,700,000 for fiscal year 2002, $1,750,000 for fiscal year 2003, and $1,800,000 for fiscal year 2004 shall be for Carbon Removal;

(E) $2,500,000 for fiscal year 2002, $2,600,000 for fiscal year 2003, and $1,800,000 for fiscal year 2004 shall be for State and Local Climate;

(F) $6,300,000 for fiscal year 2002, $6,600,000 for fiscal year 2003, and $6,800,000 for fiscal year 2004 shall be for International Capacity Building; and

(G) $800,000 for fiscal year 2002, $850,000 for fiscal year 2003, and $900,000 for fiscal year 2004 shall be for Technical Cooperation with Industrial and Developing Countries.

SEC. 143. LIMITS ON USE OF FUNDS.

(a) FEDERAL ACQUISITION REGULATION.—

(1) REQUIREMENT.—None of the funds authorized to be appropriated by this subtitle may be used to award, amend, or modify a contract of the Office of Air and Radiation in a manner that deviates from the Federal Acquisition Regulation, unless the Administrator grants, on a case-by-case basis, a waiver to allow for such a deviation. The Administrator may not delegate the authority to grant such a waiver.

(2) CONGRESSIONAL NOTICE.—At least 60 days before a contract award, amendment, or modification for which the Administrator intends to grant such a waiver, the Administrator shall submit to the appropriate congressional committees a report notifying the committees of the waiver and setting forth the reasons for the waiver.

(b) PRODUCTION OR PROVISION OF ARTICLES OR SERVICES.—None of the funds authorized to be appropriated by this subtitle may be used to produce or provide articles or services for the purpose of selling the articles or services to a person outside the Federal Government, unless the Administrator determines that comparable articles or services are not available from a commercial source in the United States.

(c) REQUESTS FOR PROPOSALS.—None of the funds authorized to be appropriated by this subtitle may be used by the Environmental Protection Agency to prepare or initiate Requests for Proposals for a program, project, or activity if the program, project, or activity has not been specifically authorized by Congress.

(d) TRADE ASSOCIATIONS.—None of the funds authorized to be appropriated by this subtitle may be used either directly or indirectly to fund a grant, contract, subcontract, or any other form of financial assistance awarded by the Environmental Protection Agency to a trade association on a noncompetitive basis. As part of the Environmental Protection Agency's annual budget request submission to the Congress, the Administrator shall submit a report to the appropriate congressional committees that identifies—

(1) the estimated amount of funds provided by the Environmental Protection Agency to trade associations, by trade association, for the fiscal year of such budget submission, as well as for the 2 previous fiscal years;

(2) the services either provided or to be provided by each such trade association; and

(3) the sources of funds for services provided by each such trade association.

SEC. 144. COST SHARING.

(a) RESEARCH AND DEVELOPMENT.—The Administrator shall require, for research and development programs, projects, and activities carried out by industry under this subtitle, a commitment from non-Federal sources of at least 20 percent of the cost of such programs, projects, and activities.

(b) DEMONSTRATION AND COMMERCIAL APPLICATION.—The Administrator shall require a commitment from non-Federal sources of at least 50 percent of the cost of any demonstration or commercial application program, project, or activity conducted under this subtitle.

SEC. 145. LIMITATION ON DEMONSTRATION AND COMMERCIAL APPLICATIONS OF ENERGY TECHNOLOGY.

The Administrator shall provide funding for scientific or energy demonstration or commercial application of energy technology programs, projects, or activities of the Office of Air and Radiation only for technologies or processes that can be reasonably expected to yield new, measurable benefits to the cost, efficiency, or performance of the technology or process.

SEC. 146. REPROGRAMMING.

(a) AUTHORITY.—The Administrator may use amounts appropriated under this subtitle for a program,

project, or activity other than the program, project, or activity for which such amounts were appropriated only if—

(1) the Administrator has transmitted to the appropriate congressional committees a report described in subsection (b) and a period of 30 days has elapsed after such committees receive the report;

(2) amounts used for the program, project, or activity do not exceed—

(A) 105 percent of the amount authorized for the program, project, or activity; or

(B) $250,000 more than the amount authorized for the program, project, or activity,

whichever is less; and

(3) the program, project, or activity has been presented to, or requested of, the Congress by the Administrator.

(b) REPORT.—(1) The report referred to in subsection (a) is a report containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of the proposed action.

(2) In the computation of the 30-day period under subsection (a), there shall be excluded any day on which either House of Congress is not in session because of an adjournment of more than 3 days to a day certain.

(c) LIMITATIONS.—(1) In no event may the total amount of funds obligated pursuant to this subtitle exceed the total amount authorized to be appropriated by this subtitle.

(2) Funds appropriated pursuant to this subtitle may not be used for an item for which Congress has declined to authorize funds.

SEC. 147. BUDGET REQUEST FORMAT.

The Administrator shall provide to the appropriate congressional committees, to be transmitted at the same time as the Environmental Protection Agency's annual budget request submission, a detailed justification for budget authorization for the programs, projects, and activities for which funds are authorized by this subtitle. Each such document shall include, for the fiscal year for which funding is being requested and for the 2 previous fiscal years—

(1) a description of, and funding requested or allocated for, each such program, project, or activity;

(2) an identification of all recipients of funds to conduct such programs, projects, and activities; and

(3) an estimate of the amounts to be expended by each recipient of funds identified under paragraph (2).

SEC. 148. OTHER PROVISIONS.

(a) ANNUAL OPERATING PLAN AND REPORTS.—The Administrator shall provide simultaneously to the Committee on Science of the House of Representatives—

(1) any annual operating plan or other operational funding document, including any additions or amendments thereto; and

(2) any report relating to the environmental research or development, scientific or energy research, development, or demonstration, or commercial application of energy technology programs, projects, or activities of the Environmental Protection Agency,

provided to any committee of Congress.

(b) NOTICE OF REORGANIZATION.—The Administrator shall provide notice to the appropriate congressional committees not later than 15 days before any reorganization of any environmental research or development, scientific or energy research, development, or demonstration, or commercial application of energy technology program, project, or activity of the Office of Air and Radiation.

TITLE II—RENEWABLE ENERGY

Subtitle A—Hydrogen

SEC. 201. SHORT TITLE.

This subtitle may be cited as the ''Robert S. Walker and George E. Brown, Jr. Hydrogen Energy Act of 2001''.

SEC. 202. PURPOSES.

Section 102(b) of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 is amended to read as follows:

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

''(1) to direct the Secretary to conduct research, development, and demonstration activities leading to the production, storage, transportation, and use of hydrogen for industrial, commercial, residential, transportation, and utility applications;

''(2) to direct the Secretary to develop a program of technology assessment, information dissemination, and education in which Federal, State, and local agencies, members of the energy, transportation, and other industries, and other entities may participate; and

''(3) to develop methods of hydrogen production that minimize adverse environmental impacts, with emphasis on efficient and cost-effective production from renewable energy resources.''.

SEC. 203. DEFINITIONS.

Section 102(c) of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 is amended—

(1) by redesignating paragraphs (1) through (3) as paragraphs (2) through (4), respectively; and

(2) by inserting before paragraph (2), as so redesignated by paragraph (1) of this section, the following new paragraph:

''(1) 'advisory committee' means the advisory committee established under section 108;''.

SEC. 204. REPORTS TO CONGRESS.

Section 103 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 is amended to read as follows:

''SEC. 103. REPORTS TO CONGRESS.

''(a) REQUIREMENT.—Not later than 1 year after the date of the enactment of the Robert S. Walker and George E. Brown, Jr. Hydrogen Energy Act of 2001, and biennially thereafter, the Secretary shall transmit to Congress a detailed report on the status and progress of the programs and activities authorized under this Act.

''(b) CONTENTS.—A report under subsection (a) shall include, in addition to any views and recommendations of the Secretary—

''(1) an assessment of the extent to which the program is meeting the purposes specified in section 102(b);

''(2) a determination of the effectiveness of the technology assessment, information dissemination,

and education program established under section 106;

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

''(4) recommendations of the advisory committee for any improvements needed in the programs and activities authorized by this Act.''.

SEC. 205. HYDROGEN RESEARCH AND DEVELOPMENT.

Section 104 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 is amended to read as follows:

''SEC. 104. HYDROGEN RESEARCH AND DEVELOPMENT.

''(a) ESTABLISHMENT OF PROGRAM.—The Secretary shall conduct a hydrogen research and development 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, commercial, residential, transportation, and utility applications.

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

''(1) give particular attention to developing an understanding and resolution of critical technical issues preventing the introduction of hydrogen as an energy carrier into the marketplace;

''(2) initiate or accelerate existing research and development in critical technical issues that will contribute to the development of more economical hydrogen production, storage, transportation, and use, including critical technical issues with respect to production (giving priority to those production techniques that use renewable energy resources as their primary source of energy for hydrogen production), liquefaction, transmission, distribution, storage, and use (including use of hydrogen in surface transportation); and

''(3) survey private sector and public sector hydrogen research and development activities worldwide, and take steps to ensure that research and development activities under this section do not—

''(A) duplicate any available research and development results; or

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

''(c) EVALUATION OF TECHNOLOGIES.—The Secretary shall evaluate, for the purpose of determining whether to undertake or fund research and development activities under this section, any reasonable new or improved technology that could lead or contribute to the development of economical hydrogen production, storage, transportation, and use.

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

''(e) COMPETITIVE PEER REVIEW.—The Secretary shall carry out or fund research and development activities under this section only on a competitive basis using peer review.

''(f) COST SHARING.—The Secretary shall require, for research and development activities carried out by industry under this section, a commitment from non-Federal sources of at least 20 percent of the cost of the project.''.

SEC. 206. DEMONSTRATIONS.

Section 105 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 is amended—

(1) in subsection (a), by striking ", preferably in self-contained locations,";

(2) in subsection (b), by striking "at self-contained sites"; and

(3) in subsection (c), by inserting "NON-FEDERAL FUNDING REQUIREMENT.—" after "(c)".

SEC. 207. TECHNOLOGY TRANSFER.

Section 106 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 is amended to read as follows:

"SEC. 106. TECHNOLOGY ASSESSMENT, INFORMATION DISSEMINATION, AND EDUCATION PROGRAM.

"(a) PROGRAM.—The Secretary shall, in consultation with the advisory committee, conduct a program designed to accelerate wider application of hydrogen production, storage, transportation, and use technologies, including application in foreign countries to increase the global market for the technologies and foster global economic development without harmful environmental effects.

"(b) INFORMATION.—The Secretary, in carrying out the program authorized by subsection (a), shall—

''(1) undertake an update of the inventory and assessment, required under section 106(b)(1) of this Act as in effect before the date of the enactment of the Robert S. Walker and George E. Brown, Jr. Hydrogen Energy Act of 2001, of hydrogen technologies and their commercial capability to economically produce, store, transport, or use hydrogen in industrial, commercial, residential, transportation, and utility sector; and

''(2) develop, with other Federal agencies as appropriate and industry, an information exchange program to improve technology transfer for hydrogen production, storage, transportation, and use, which may consist of workshops, publications, conferences, and a database for the use by the public and private sectors.''.

SEC. 208. COORDINATION AND CONSULTATION.

Section 107 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 is amended—

(1) by amending paragraph (1) of subsection (a) to read as follows:

''(1) shall establish a central point for the coordination of all hydrogen research, development,

and demonstration activities of the Department; and''; and

(2) by amending subsection (c) to read as follows:

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

SEC. 209. ADVISORY COMMITTEE.

Section 108 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 is amended to read as follows:

''SEC. 108. ADVISORY COMMITTEE.

''(a) ESTABLISHMENT.—The Secretary shall enter into appropriate arrangements with the National Academies of Sciences and Engineering to establish an advisory committee consisting of experts drawn from domestic industry, academia, Governmental laboratories, and financial, environmental, and other organizations, as appropriate, to review and advise on the progress made through the programs and activities authorized under this Act.

''(b) COOPERATION.—The heads of Federal agencies shall cooperate with the advisory committee in carrying out this section and shall furnish to the advisory com-

mittee such information as the advisory committee reasonably deems necessary to carry out this section.

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

''(1) the implementation and conduct of programs and activities authorized under this Act; and

''(2) the economic, technological, and environmental consequences of the deployment of hydrogen production, storage, transportation, and use systems.

''(d) RESPONSIBILITIES OF THE SECRETARY.—The Secretary shall consider, but need not adopt, any recommendations of the advisory committee under subsection (c). The Secretary shall provide an explanation of the reasons that any such recommendations will not be implemented and include such explanation in the report to Congress under section 103(a) of this Act.''.

SEC. 210. AUTHORIZATION OF APPROPRIATIONS.

Section 109 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 is amended to read as follows:

''SEC. 109. AUTHORIZATION OF APPROPRIATIONS.

''(a) RESEARCH AND DEVELOPMENT; ADVISORY COMMITTEE.—There are authorized to be appropriated to the Secretary to carry out sections 104 and 108—

''(1) $40,000,000 for fiscal year 2002;

''(2) $45,000,000 for fiscal year 2003;

''(3) $50,000,000 for fiscal year 2004;

''(4) $55,000,000 for fiscal year 2005; and

''(5) $60,000,000 for fiscal year 2006.

''(b) DEMONSTRATION.—There are authorized to be appropriated to the Secretary to carry out section 105—

''(1) $20,000,000 for fiscal year 2002;

''(2) $25,000,000 for fiscal year 2003;

''(3) $30,000,000 for fiscal year 2004;

''(4) $35,000,000 for fiscal year 2005; and

''(5) $40,000,000 for fiscal year 2006.''.

SEC. 211. REPEAL.

(a) REPEAL.—Title II of the Hydrogen Future Act of 1996 is repealed.

(b) CONFORMING AMENDMENT.—Section 2 of the Hydrogen Future Act of 1996 is amended by striking ''titles II and III'' and inserting ''title III''.

Subtitle B—Bioenergy

SEC. 221. SHORT TITLE.

This subtitle may be cited as the ''Bioenergy Act of 2001''.

SEC. 222. FINDINGS.

Congress finds that bioenergy has potential to help—

(1) meet the Nation's energy needs;

(2) reduce reliance on imported fuels;

(3) promote rural economic development;

(4) provide for productive utilization of agricultural residues and waste materials; and

(5) protect the environment.

SEC. 223. DEFINITION.

For purposes of this subtitle the term ''biofuels'' includes production of industrial chemicals.

SEC. 224. AUTHORIZATION.

The Secretary is authorized to conduct environmental research and development, scientific and energy research, development, and demonstration, and commercial application of energy technology programs, projects, and activities related to bioenergy, including biopower energy systems, biofuels energy systems, and integrated bioenergy research and development (including biofuels).

SEC. 225. AUTHORIZATION OF APPROPRIATIONS.

(a) BIOPOWER ENERGY SYSTEMS.—There are authorized to be appropriated to the Secretary for Biopower Energy Systems programs, projects, and activities—

(1) $45,700,000 for fiscal year 2002;

(2) $52,500,000 for fiscal year 2003;

(3) $60,300,000 for fiscal year 2004;

(4) $69,300,000 for fiscal year 2005; and

(5) $79,600,000 for fiscal year 2006.

(b) BIOFUELS ENERGY SYSTEMS.—There are authorized to be appropriated to the Secretary for biofuels energy systems programs, projects, and activities—

(1) $53,500,000 for fiscal year 2002;

(2) $61,400,000 for fiscal year 2003;

(3) $70,600,000 for fiscal year 2004;

(4) $81,100,000 for fiscal year 2005; and

(5) $93,200,000 for fiscal year 2006.

(c) INTEGRATED BIOENERGY RESEARCH AND DEVELOPMENT.—There are authorized to be appropriated to the Secretary for integrated bioenergy research and development (including biofuels) programs, projects, and activities, $49,000,000 for each of the fiscal years 2002 through 2006. Activities funded under this subsection shall be coordinated with ongoing related programs of other Federal agencies.

Subtitle C—Department of Energy Authorization of Appropriations

SEC. 241. AUTHORIZATION OF APPROPRIATIONS.

(a) OPERATION AND MAINTENANCE.—There are authorized to be appropriated to the Secretary for Renewable Energy operation and maintenance, including Geothermal Technology Development, Hydropower, Concentrating Solar Power, Photovoltaic Energy Systems, Solar Building Technology Research, Wind Energy Systems, High Tem-

perature Superconducting Research and Development, Energy Storage Systems, Transmission Reliability, International Renewable Energy Program, Renewable Energy Production Incentive Program, Renewable Program Support, National Renewable Energy Laboratory, and Program Direction, and including amounts authorized under the amendment made by section 210 and amounts authorized under section 225, $475,000,000 for fiscal year 2002, $585,000,000 for fiscal year 2003, and $620,000,000 for fiscal year 2004, to remain available until expended.

(b) LIMITS ON USE OF FUNDS.—None of the funds authorized to be appropriated in subsection (a) may be used for—

(1) Departmental Energy Management Program; or

(2) Renewable Indian Energy Resources.

TITLE III—NUCLEAR ENERGY

Subtitle A—University Nuclear Science and Engineering

SEC. 301. SHORT TITLE.

This subtitle may be cited as ''Department of Energy University Nuclear Science and Engineering Act''.

SEC. 302. FINDINGS.

The Congress finds the following:

(1) United States university nuclear science and engineering programs are in a state of serious decline, with nuclear engineering enrollment at a 35-year low. Since 1980, the number of nuclear engineering university programs has declined nearly 40 percent, and over two-thirds of the faculty in these programs are 45 years of age or older. Also, since 1980, the number of university research and training reactors in the United States has declined by over 50 percent. Most of these reactors were built in the late 1950s and 1960s with 30-year to 40-year operating licenses, and many require relicensing in the next several years.

(2) A decline in a competent nuclear workforce, and the lack of adequately trained nuclear scientists and engineers, will affect the ability of the United States to solve future nuclear waste storage issues, operate existing and design future fission reactors in the United States, respond to future nuclear events worldwide, help stem the proliferation of nuclear weapons, and design and operate naval nuclear reactors.

(3) The Department of Energy's Office of Nuclear Energy, Science and Technology, a principal Federal agency for civilian research in nuclear

science and engineering, is well suited to help maintain tomorrow's human resource and training investment in the nuclear sciences and engineering.

SEC. 303. DEPARTMENT OF ENERGY PROGRAM.

(a) ESTABLISHMENT.—The Secretary, through the Office of Nuclear Energy, Science and Technology, shall support a program to maintain the Nation's human resource investment and infrastructure in the nuclear sciences and engineering consistent with the Department's statutory authorities related to civilian nuclear research, development, and demonstration and commercial application of energy technology.

(b) DUTIES OF THE OFFICE OF NUCLEAR ENERGY, SCIENCE AND TECHNOLOGY.—In carrying out the program under this subtitle, the Director of the Office of Nuclear Energy, Science and Technology shall—

(1) develop a robust graduate and undergraduate fellowship program to attract new and talented students;

(2) assist universities in recruiting and retaining new faculty in the nuclear sciences and engineering through a Junior Faculty Research Initiation Grant Program;

(3) maintain a robust investment in the fundamental nuclear sciences and engineering through the Nuclear Engineering Education Research Program;

(4) encourage collaborative nuclear research among industry, national laboratories, and universities through the Nuclear Energy Research Initiative; and

(5) support communication and outreach related to nuclear science and engineering.

(c) MAINTAINING UNIVERSITY RESEARCH AND TRAINING REACTORS AND ASSOCIATED INFRASTRUCTURE.—The Secretary, through the Office of Nuclear Energy, Science and Technology, shall provide for the following university research and training reactor infrastructure maintenance and research activities:

(1) Refueling of university research reactors with low enriched fuels, upgrade of operational instrumentation, and sharing of reactors among universities.

(2) In collaboration with the United States nuclear industry, assistance, where necessary, in relicensing and upgrading university training reactors as part of a student training program.

(3) A university reactor research and training award program that provides for reactor improve-

ments as part of a focused effort that emphasizes research, training, and education.

(d) UNIVERSITY-DOE LABORATORY INTERACTIONS.—The Secretary, through the Office of Nuclear Energy, Science and Technology, shall develop—

(1) a sabbatical fellowship program for university faculty to spend extended periods of time at Department of Energy laboratories in the areas of nuclear science and technology; and

(2) a visiting scientist program in which laboratory staff can spend time in academic nuclear science and engineering departments.

The Secretary may under subsection (b)(1) provide for fellowships for students to spend time at Department of Energy laboratories in the areas of nuclear science and technology under the mentorship of laboratory staff.

(e) OPERATIONS AND MAINTENANCE.—To the extent that the use of a university research reactor is funded under this subtitle, funds authorized under this subtitle may be used to supplement operation of the research reactor during the investigator's proposed effort. The host institution shall provide at least 50 percent of the cost of the reactor's operation.

(f) MERIT REVIEW REQUIRED.—All grants, contracts, cooperative agreements, or other financial assist-

ance awards under this subtitle shall be made only after independent merit review.

SEC. 304. AUTHORIZATION OF APPROPRIATIONS.

(a) TOTAL AUTHORIZATION.—The following sums are authorized to be appropriated to the Secretary, to remain available until expended, for the purposes of carrying out this subtitle:

(1) $30,200,000 for fiscal year 2002.

(2) $41,000,000 for fiscal year 2003.

(3) $47,900,000 for fiscal year 2004.

(4) $55,600,000 for fiscal year 2005.

(5) $64,100,000 for fiscal year 2006.

(b) GRADUATE AND UNDERGRADUATE FELLOWSHIPS.—Of the funds authorized by subsection (a), the following sums are authorized to be appropriated to carry out section 303(b)(1):

(1) $3,000,000 for fiscal year 2002.

(2) $3,100,000 for fiscal year 2003.

(3) $3,200,000 for fiscal year 2004.

(4) $3,200,000 for fiscal year 2005.

(5) $3,200,000 for fiscal year 2006.

(c) JUNIOR FACULTY RESEARCH INITIATION GRANT PROGRAM.—Of the funds authorized by subsection (a), the following sums are authorized to be appropriated to carry out section 303(b)(2):

(1) $5,000,000 for fiscal year 2002.

(2) $7,000,000 for fiscal year 2003.

(3) $8,000,000 for fiscal year 2004.

(4) $9,000,000 for fiscal year 2005.

(5) $10,000,000 for fiscal year 2006.

(d) NUCLEAR ENGINEERING EDUCATION RESEARCH PROGRAM.—Of the funds authorized by subsection (a), the following sums are authorized to be appropriated to carry out section 303(b)(3):

(1) $8,000,000 for fiscal year 2002.

(2) $12,000,000 for fiscal year 2003.

(3) $13,000,000 for fiscal year 2004.

(4) $15,000,000 for fiscal year 2005.

(5) $20,000,000 for fiscal year 2006.

(e) COMMUNICATION AND OUTREACH RELATED TO NUCLEAR SCIENCE AND ENGINEERING.—Of the funds authorized by subsection (a), the following sums are authorized to be appropriated to carry out section 303(b)(5):

(1) $200,000 for fiscal year 2002.

(2) $200,000 for fiscal year 2003.

(3) $300,000 for fiscal year 2004.

(4) $300,000 for fiscal year 2005.

(5) $300,000 for fiscal year 2006.

(f) REFUELING OF UNIVERSITY RESEARCH REACTORS AND INSTRUMENTATION UPGRADES.—Of the funds

authorized by subsection (a), the following sums are authorized to be appropriated to carry out section 303(c)(1):

(1) $6,000,000 for fiscal year 2002.

(2) $6,500,000 for fiscal year 2003.

(3) $7,000,000 for fiscal year 2004.

(4) $7,500,000 for fiscal year 2005.

(5) $8,000,000 for fiscal year 2006.

(g) RELICENSING ASSISTANCE.—Of the funds authorized by subsection (a), the following sums are authorized to be appropriated to carry out section 303(c)(2):

(1) $1,000,000 for fiscal year 2002.

(2) $1,100,000 for fiscal year 2003.

(3) $1,200,000 for fiscal year 2004.

(4) $1,300,000 for fiscal year 2005.

(5) $1,300,000 for fiscal year 2006.

(h) REACTOR RESEARCH AND TRAINING AWARD PROGRAM.—Of the funds authorized by subsection (a), the following sums are authorized to be appropriated to carry out section 303(c)(3):

(1) $6,000,000 for fiscal year 2002.

(2) $10,000,000 for fiscal year 2003.

(3) $14,000,000 for fiscal year 2004.

(4) $18,000,000 for fiscal year 2005.

(5) $20,000,000 for fiscal year 2006.

(i) UNIVERSITY-DOE LABORATORY INTERACTIONS.—Of the funds authorized by subsection (a), the following sums are authorized to be appropriated to carry out section 303(d):

(1) $1,000,000 for fiscal year 2002.

(2) $1,100,000 for fiscal year 2003.

(3) $1,200,000 for fiscal year 2004.

(4) $1,300,000 for fiscal year 2005.

(5) $1,300,000 for fiscal year 2006.

Subtitle B—Spent Nuclear Fuel and Fuel Cycle Research, Development, and Demonstration

SEC. 321. OFFICE OF SPENT NUCLEAR FUEL RESEARCH.

(a) DEFINITION.—In this section the term ''Associate Director'' means the Associate Director of the Office of Spent Nuclear Fuel Research established by subsection (b).

(b) ESTABLISHMENT.—There is established an Office of Spent Nuclear Fuel Research within the Office of Nuclear Energy, Science and Technology of the Department.

(c) HEAD OF OFFICE.—The Office of Spent Nuclear Fuel Research shall be headed by the Associate Director, who shall be a member of the Senior Executive Service appointed by the Director of the Office of Nuclear Energy,

Science and Technology, and compensated at a rate determined by applicable law.

(d) DUTIES OF THE ASSOCIATE DIRECTOR.—

(1) PARTICIPATION.—The Associate Director shall coordinate the participation of national laboratories, other Department facilities, universities, the commercial nuclear industry, and other organizations in the research, development, and demonstration of technologies for the treatment, recycling, and disposal of spent nuclear fuel and high-level radioactive waste.

(2) ACTIVITIES.—The Associate Director shall—

(A) develop a research plan to provide recommendations to the Secretary by 2015;

(B) identify promising technologies for the treatment, recycling, and disposal of spent nuclear fuel and high-level radioactive waste;

(C) conduct research, development, and demonstration activities for promising technologies;

(D) ensure that all activities include as key objectives minimization of proliferation concerns and risk to health of the general public and site

workers, as well as development of cost-effective technologies;

(E) require research on both reactor-based and accelerator-based transmutation systems;

(F) require research on advanced processing and separations;

(G) include participation of international collaborators in research efforts, and provide funding to a collaborator that brings unique capabilities not available in the United States if the country in which the collaborator is located is unable to provide support; and

(H) ensure that research efforts are coordinated with research on advanced fuel cycles and reactors conducted by the Office of Nuclear Energy, Science and Technology.

(e) GRANT AND CONTRACT AUTHORITY.—The Secretary may make grants, or enter into contracts, for the purposes of the activities described in subsection (d)(2).

(f) REPORT.—The Secretary shall report on the activities and expenditures of the Office, describing the progress being made in the activities described in subsection (d)(2), as part of the Department's annual budget submission.

SEC. 322. ADVANCED FUEL RECYCLING TECHNOLOGY RESEARCH AND DEVELOPMENT PROGRAM.

(a) IN GENERAL.—The Secretary, through the Director of the Office of Nuclear Energy, Science and Technology, shall conduct an advanced fuel recycling technology research and development program to further the availability of proliferation-resistant fuel recycling technologies as an alternative to aqueous reprocessing in support of evaluation of alternative national strategies for spent nuclear fuel and the Generation IV advanced reactor concepts, subject to annual review by the Secretary's Nuclear Energy Research Advisory Committee or other independent entity, as appropriate.

(b) REPORTS.—The Secretary shall report on the activities of the advanced fuel recycling technology research and development program, as part of the Department's annual budget submission.

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

(1) $10,000,000 for fiscal year 2002; and

(2) such sums as are necessary for fiscal year 2003 and fiscal year 2004.

Subtitle C—Department of Energy Authorization of Appropriations

SEC. 341. NUCLEAR ENERGY RESEARCH INITIATIVE.

(a) PROGRAM.—The Secretary, through the Office of Nuclear Energy, Science and Technology, shall conduct a Nuclear Energy Research Initiative for grants to be competitively awarded and subject to peer review for research relating to nuclear energy.

(b) OBJECTIVES.—The program shall be directed toward accomplishing the objectives of—

(1) developing advanced concepts and scientific breakthroughs in nuclear fission and reactor technology to address and overcome the principal technical and scientific obstacles to the expanded use of nuclear energy in the United States;

(2) advancing the state of nuclear technology to maintain a competitive position in foreign markets and a future domestic market;

(3) promoting and maintaining a United States nuclear science and engineering infrastructure to meet future technical challenges;

(4) providing an effective means to collaborate on a cost-shared basis with international agencies and research organizations to address and influence nuclear technology development worldwide; and

(5) promoting United States leadership and partnerships in bilateral and multilateral nuclear energy research.

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

(1) $60,000,000 for fiscal year 2002; and

(2) such sums as are necessary for fiscal year 2003 and fiscal year 2004.

SEC. 342. NUCLEAR ENERGY PLANT OPTIMIZATION PROGRAM.

(a) PROGRAM.—The Secretary, through the Office of Nuclear Energy, Science and Technology, shall conduct a Nuclear Energy Plant Optimization research and development program jointly with industry and cost-shared by industry by least 50 percent and subject to annual review by the Secretary's Nuclear Energy Research Advisory Committee or other independent entity, as appropriate.

(b) OBJECTIVES.—The program shall be directed toward accomplishing the objectives of—

(1) managing long-term effects of component aging; and

(2) improving the efficiency and productivity of existing nuclear power stations.

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

(1) $15,000,000 for fiscal year 2002; and

(2) such sums as are necessary for fiscal years 2003 through 2006.

SEC. 343. NUCLEAR ENERGY TECHNOLOGIES.

(a) IN GENERAL.—The Secretary, through the Office of Nuclear Energy, Science and Technology, shall conduct a study of Generation IV nuclear energy systems, including development of a technology roadmap and performance of research and development necessary to make an informed technical decision regarding the most promising candidates for commercial application.

(b) REACTOR CHARACTERISTICS.—To the extent practicable, in conducting the study under subsection (a), the Secretary shall study nuclear energy systems that offer the highest probability of achieving the goals for Generation IV nuclear energy systems, including—

(1) economics competitive with any other generators;

(2) enhanced safety features, including passive safety features;

(3) substantially reduced production of high-level waste, as compared with the quantity of waste

produced by reactors in operation on the date of enactment of this Act;

(4) highly proliferation-resistant fuel and waste;

(5) sustainable energy generation including optimized fuel utilization; and

(6) substantially improved thermal efficiency, as compared with the thermal efficiency of reactors in operation on the date of enactment of this Act.

(c) CONSULTATION.—In conducting the study under subsection (a), the Secretary shall consult with appropriate representatives of industry, institutions of higher education, Federal agencies, and international, professional, and technical organizations.

(d) REPORT.—

(1) IN GENERAL.—Not later than December 31, 2002, the Secretary shall transmit to the appropriate congressional committees a report describing the activities of the Secretary under this section, and plans for research and development leading to a public/private cooperative demonstration of one or more Generation IV nuclear energy systems.

(2) CONTENTS.—The report shall contain—

(A) an assessment of all available technologies;

(B) a summary of actions needed for the most promising candidates to be considered as viable commercial options within the five to ten years after the date of the report, with consideration of regulatory, economic, and technical issues;

(C) a recommendation of not more than three promising Generation IV nuclear energy system concepts for further development;

(D) an evaluation of opportunities for public/private partnerships;

(E) a recommendation for structure of a public/private partnership to share in development and construction costs;

(F) a plan leading to the selection and conceptual design, by September 30, 2004, of at least one Generation IV nuclear energy system concept recommended under subparagraph (C) for demonstration through a public/private partnership;

(G) an evaluation of opportunities for siting demonstration facilities on Department of Energy land; and

(H) a recommendation for appropriate involvement of other Federal agencies.

(e) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out this section and to carry out the recommendations in the report transmitted under subsection (d)—

(1) $50,000,000 for fiscal year 2002; and

(2) such sums as are necessary for fiscal year 2003 and fiscal year 2004.

SEC. 344. AUTHORIZATION OF APPROPRIATIONS.

(a) OPERATION AND MAINTENANCE.—There are authorized to be appropriated to the Secretary to carry out activities authorized under this title for nuclear energy operation and maintenance, including amounts authorized under sections 304(a), 322(c), 341(c), 342(c), and 343(e), and including Advanced Radioisotope Power Systems, Test Reactor Landlord, and Program Direction, $221,000,000 for fiscal year 2002, $230,000,000 for fiscal year 2003, and $240,000,000 for fiscal year 2004, to remain available until expended.

(b) CONSTRUCTION.—There are authorized to be appropriated to the Secretary—

(1) $950,000 for fiscal year 2002, $2,200,000 for fiscal year 2003, $1,246,000 for fiscal year 2004, and $1,699,000 for fiscal year 2005 for completion of construction of Project 99-E-200, Test Reactor Area Electric Utility Upgrade, Idaho Na-

tional Engineering and Environmental Laboratory; and

(2) $500,000 for fiscal year 2002, $500,000 for fiscal year 2003, $500,000 for fiscal year 2004, and $500,000 for fiscal year 2005, for completion of construction of Project 95-E-201, Test Reactor Area Fire and Life Safety Improvements, Idaho National Engineering and Environmental Laboratory.

(c) LIMITS ON USE OF FUNDS.—None of the funds authorized to be appropriated in subsection (a) may be used for Nuclear Energy Isotope Support and Production, Argonne National Laboratory-West Operations, Fast Flux Test Facility, or Nuclear Facilities Management.

TITLE IV—FOSSIL ENERGY

Subtitle A—Clean Coal

SEC. 401. SHORT TITLE.

This subtitle may be cited as the ''National Electricity and Environmental Technology Research and Development Act''.

SEC. 402. FINDINGS.

Congress finds that—

(1) reliable, affordable, increasingly clean electricity will continue to power the growing United States economy;

(2) an increasing use of electrotechnologies, the desire for continuous environmental improvement, a more competitive electricity market, and concerns about rising energy prices add importance to the need for reliable, affordable, increasingly clean electricity;

(3) coal, which, as of the date of enactment of this Act, accounts for more than ½ of all electricity generated in the United States, is the most abundant fossil energy resource of the United States;

(4) coal comprises more than 85 percent of all fossil resources in the United States and exists in quantities sufficient to supply the United States for 250 years at current usage rates;

(5) investments in electricity generating facility emissions control technology over the past 30 years have reduced the aggregate emissions of pollutants from coal-based generating facilities by 21 percent, even as coal use for electricity generation has nearly tripled; and

(6) continued environmental improvement in coal-based generation through continued research, development, and demonstration toward an ultimate goal of near-zero emissions is important and desirable.

SEC. 403. DEFINITION.

In this subtitle, the term ''cost and performance-based goals'' means the cost and performance-based goals established under section 4.

SEC. 404. CLEAN COAL POWER INITIATIVE.

(a) IN GENERAL.—The Secretary shall carry out a program of research on and development, demonstration, and commercial application of clean coal technologies under—

(1) this subtitle;

(2) the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5901 et seq.);

(3) the Energy Reorganization Act of 1974 (42 U.S.C. 5801 et seq.); and

(4) title XIII of the Energy Policy Act of 1992 (42 U.S.C. 13331 et seq.).

(b) CONDITIONS.—The research, development, demonstration, and commercial application program described in subsection (a) shall be designed to achieve the cost and performance-based goals.

SEC. 405. AUTHORIZATION OF APPROPRIATIONS.

(a) CLEAN COAL POWER INITIATIVE.—Except as provided in section 406, there are authorized to be appropriated to the Secretary to carry out the Clean Coal Power Initiative under section 404 $200,000,000 for each of the

fiscal years 2002 through 2011, to remain available until expended.

(b) OTHER COAL AND RELATED TECHNOLOGIES PROGRAMS.—Except as provided in section 406, there are authorized to be appropriated to the Secretary $172,000,000 for fiscal year 2002, $179,000,000 for fiscal year 2003, and $186,000,000 for fiscal year 2004, to remain available until expended, for other coal and related technologies programs, which shall include—

(1) Innovations for Existing Plants;

(2) Integrated Gasification Combined Cycle;

(3) Pressurized Fluidized Bed Systems;

(4) Turbines;

(5) Sequestration Research and Development;

(6) Transportation Fuels and Chemicals;

(7) Solid Fuels and Feedstocks;

(8) Advanced Fuels Research; and

(9) Advanced Research.

SEC. 406. LIMIT ON USE OF FUNDS.

Notwithstanding section 405, no funds may be used to carry out the activities authorized by this subtitle until 30 days after the Secretary transmits a report to the appropriate congressional committees that includes a detailed 10-year plan on implementation, Federal and non-Federal funding profiles, and provisions for recoupment

of Federal funding, and that addresses in detail how the Department intends to avoid management problems encountered in the administration of the Clean Coal Technology Program.

Subtitle B—Oil and Gas

SEC. 421. PETROLEUM-OIL TECHNOLOGY.

The Secretary shall conduct a program of research, development, demonstration, and commercial application on petroleum-oil technology. The program shall address—

(1) Exploration and Production Supporting Research;

(2) Oil Technology Reservoir Management/Extension; and

(3) Effective Environmental Protection.

SEC. 422. GAS.

The Secretary shall conduct a program of research, development, demonstration, and commercial application on natural gas technologies. The program shall address—

(1) Exploration and Production;

(2) Infrastructure; and

(3) Effective Environmental Protection.

SEC. 423. UNCONVENTIONAL AND ULTRA-DEEPWATER NATURAL GAS AND PETROLEUM.

The Secretary shall conduct a program of research, development, and demonstration of unconventional and

ultra-deepwater natural gas and petroleum exploration and production technologies.

Subtitle C—Fuel Cells

SEC. 444. FUEL CELLS.

The Secretary shall conduct a program of research, development, demonstration, and commercial application on fuel cells. The program shall address—

(1) Advanced Research;

(2) Systems Development;

(3) Vision 21-Hybrids; and

(4) Innovative Concepts.

Subtitle D—Authorization of Appropriations

SEC. 461. AUTHORIZATION OF APPROPRIATIONS.

(a) OPERATION AND MAINTENANCE.—There are authorized to be appropriated to the Secretary for operation and maintenance for subtitles B and C, and for Fossil Energy Research and Development Headquarters Program Direction, Field Program Direction, Plant and Capital Equipment, Cooperative Research and Development, Import/Export Authorization, and Advanced Metallurgical Processes $238,000,000 for fiscal year 2002, $247,000,000 for fiscal year 2003, and $257,000,000 for fiscal year 2004, to remain available until expended.

(b) LIMITS ON USE OF FUNDS.—None of the funds authorized to be appropriated in subsection (a) may be used for—

(1) Gas Hydrates.

(2) Fossil Energy Environmental Restoration; or

(3) research, development, demonstration, and commercial application on coal and related technologies, including activities under subtitle A.

TITLE V—SCIENCE

Subtitle A—Fusion Energy Sciences

SEC. 501. SHORT TITLE.

This subtitle may be cited as the ''Fusion Energy Sciences Act of 2001''.

SEC. 502. FINDINGS.

The Congress finds that—

(1) economic prosperity is closely linked to an affordable and ample energy supply;

(2) environmental quality is closely linked to energy production and use;

(3) population, worldwide economic development, energy consumption, and stress on the environment are all expected to increase substantially in the coming decades;

(4) the few energy options with the potential to meet economic and environmental needs for the long-term future should be pursued as part of a balanced national energy plan;

(5) fusion energy is an attractive long-term energy source because of the virtually inexhaustible supply of fuel, and the promise of minimal adverse environmental impact and inherent safety;

(6) the National Research Council, the President's Committee of Advisers on Science and Technology, and the Secretary of Energy Advisory Board have each recently reviewed the Fusion Energy Sciences Program and each strongly supports the fundamental science and creative innovation of the program, and has confirmed that progress toward the goal of producing practical fusion energy has been excellent, although much scientific and engineering work remains to be done;

(7) each of these reviews stressed the need for a magnetic fusion burning plasma experiment to address key scientific issues and as a necessary step in the development of fusion energy;

(8) the National Research Council has also called for a broadening of the Fusion Energy Sciences Program research base as a means to more

fully integrate the fusion science community into the broader scientific community; and

(9) the Fusion Energy Sciences Program budget is inadequate to support the necessary science and innovation for the present generation of experiments, and cannot accommodate the cost of a burning plasma experiment constructed by the United States, or even the cost of key participation by the United States in an international effort.

SEC. 503. PLAN FOR FUSION EXPERIMENT.

(a) PLAN FOR UNITED STATES FUSION EXPERIMENT.—The Secretary, on the basis of full consultation with the Fusion Energy Sciences Advisory Committee and the Secretary of Energy Advisory Board, as appropriate, shall develop a plan for United States construction of a magnetic fusion burning plasma experiment for the purpose of accelerating scientific understanding of fusion plasmas. The Secretary shall request a review of the plan by the National Academy of Sciences, and shall transmit the plan and the review to the Congress by July 1, 2004.

(b) REQUIREMENTS OF PLAN.—The plan described in subsection (a) shall—

(1) address key burning plasma physics issues; and

(2) include specific information on the scientific capabilities of the proposed experiment, the relevance of these capabilities to the goal of practical fusion energy, and the overall design of the experiment including its estimated cost and potential construction sites.

(c) UNITED STATES PARTICIPATION IN AN INTERNATIONAL EXPERIMENT.—In addition to the plan described in subsection (a), the Secretary, on the basis of full consultation with the Fusion Energy Sciences Advisory Committee and the Secretary of Energy Advisory Board, as appropriate, may also develop a plan for United States participation in an international burning plasma experiment for the same purpose, whose construction is found by the Secretary to be highly likely and where United States participation is cost effective relative to the cost and scientific benefits of a domestic experiment described in subsection (a). If the Secretary elects to develop a plan under this subsection, he shall include the information described in subsection (b), and an estimate of the cost of United States participation in such an international experiment. The Secretary shall request a review by the National Academies of Sciences and Engineering of a plan developed under this subsection, and shall trans-

mit the plan and the review to the Congress not later than July 1, 2004.

(d) AUTHORIZATION OF RESEARCH AND DEVELOPMENT.—The Secretary, through the Fusion Energy Sciences Program, may conduct any research and development necessary to fully develop the plans described in this section.

SEC. 504. PLAN FOR FUSION ENERGY SCIENCES PROGRAM.

Not later than 6 months after the date of the enactment of this Act, the Secretary, in full consultation with FESAC, shall develop and transmit to the Congress a plan for the purpose of ensuring a strong scientific base for the Fusion Energy Sciences Program and to enable the experiments described in section 503. Such plan shall include as its objectives—

(1) to ensure that existing fusion research facilities and equipment are more fully utilized with appropriate measurements and control tools;

(2) to ensure a strengthened fusion science theory and computational base;

(3) to ensure that the selection of and funding for new magnetic and inertial fusion research facilities is based on scientific innovation and cost effectiveness;

(4) to improve the communication of scientific results and methods between the fusion science community and the wider scientific community;

(5) to ensure that adequate support is provided to optimize the design of the magnetic fusion burning plasma experiments referred to in section 503;

(6) to ensure that inertial confinement fusion facilities are utilized to the extent practicable for the purpose of inertial fusion energy research and development;

(7) to develop a roadmap for a fusion-based energy source that shows the important scientific questions, the evolution of confinement configurations, the relation between these two features, and their relation to the fusion energy goal;

(8) to establish several new centers of excellence, selected through a competitive peer-review process and devoted to exploring the frontiers of fusion science;

(9) to ensure that the National Science Foundation, and other agencies, as appropriate, play a role in extending the reach of fusion science and in sponsoring general plasma science; and

(10) to ensure that there be continuing broad assessments of the outlook for fusion energy and periodic external reviews of fusion energy sciences.

SEC. 505. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary for the development and review, but not for implementation, of the plans described in this subtitle and for activities of the Fusion Energy Sciences Program $320,000,000 for fiscal year 2002 and $335,000,000 for fiscal year 2003, of which up to $15,000,000 for each of fiscal year 2002 and fiscal year 2003 may be used to establish several new centers of excellence, selected through a competitive peer-review process and devoted to exploring the frontiers of fusion science.

Subtitle B—Spallation Neutron Source

SEC. 521. DEFINITION.

For the purposes of this subtitle, the term ''Spallation Neutron Source'' means Department Project 99–E–334, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

SEC. 522. AUTHORIZATION OF APPROPRIATIONS.

(a) AUTHORIZATION OF CONSTRUCTION FUNDING.—There are authorized to be appropriated to the Secretary for construction of the Spallation Neutron Source—

(1) $276,300,000 for fiscal year 2002;

(2) $210,571,000 for fiscal year 2003;

(3) $124,600,000 for fiscal year 2004;

(4) $79,800,000 for fiscal year 2005; and

(5) $41,100,000 for fiscal year 2006 for completion of construction.

(b) AUTHORIZATION OF OTHER PROJECT FUNDING.—There are authorized to be appropriated to the Secretary for other project costs (including research and development necessary to complete the project, preoperations costs, and capital equipment not related to construction) of the Spallation Neutron Source $15,353,000 for fiscal year 2002 and $103,279,000 for the period encompassing fiscal years 2003 through 2006, to remain available until expended through September 30, 2006.

SEC. 523. REPORT.

The Secretary shall report on the Spallation Neutron Source as part of the Department's annual budget submission, including a description of the achievement of milestones, a comparison of actual costs to estimated costs, and any changes in estimated project costs or schedule.

SEC. 524. LIMITATIONS.

The total amount obligated by the Department, including prior year appropriations, for the Spallation Neutron Source may not exceed—

(1) $1,192,700,000 for costs of construction;

(2) $219,000,000 for other project costs; and

(3) $1,411,700,000 for total project cost.

Subtitle C—Facilities, Infrastructure, and User Facilities

SEC. 541. DEFINITION.

For purposes of this subtitle—

(1) the term ''nonmilitary energy laboratory'' means—

(A) Ames Laboratory;

(B) Argonne National Laboratory;

(C) Brookhaven National Laboratory;

(D) Fermi National Accelerator Laboratory;

(E) Lawrence Berkeley National Laboratory;

(F) Oak Ridge National Laboratory;

(G) Pacific Northwest National Laboratory;

(H) Princeton Plasma Physics Laboratory;

(I) Stanford Linear Accelerator Center;

(J) Thomas Jefferson National Accelerator Facility; or

(K) any other facility of the Department that the Secretary, in consultation with the Di-

rector, Office of Science and the appropriate congressional committees, determines to be consistent with the mission of the Office of Science; and

(2) the term ''user facility'' means—

(A) an Office of Science facility at a nonmilitary energy laboratory that provides special scientific and research capabilities, including technical expertise and support as appropriate, to serve the research needs of the Nation's universities, industry, private laboratories, Federal laboratories, and others, including research institutions or individuals from other nations where reciprocal accommodations are provided to United States research institutions and individuals or where the Secretary considers such accommodation to be in the national interest; and

(B) any other Office of Science funded facility designated by the Secretary as a user facility.

SEC. 542. FACILITY AND INFRASTRUCTURE SUPPORT FOR NONMILITARY ENERGY LABORATORIES.

(a) FACILITY POLICY.—The Secretary shall develop and implement a least-cost nonmilitary energy laboratory facility and infrastructure strategy for—

(1) maintaining existing facilities and infrastructure, as needed;

(2) closing unneeded facilities;

(3) making facility modifications; and

(4) building new facilities.

(b) PLAN.—The Secretary shall prepare a comprehensive 10-year plan for conducting future facility maintenance, making repairs, modifications, and new additions, and constructing new facilities at each nonmilitary energy laboratory. Such plan shall provide for facilities work in accordance with the following priorities:

(1) Providing for the safety and health of employees, visitors, and the general public with regard to correcting existing structural, mechanical, electrical, and environmental deficiencies.

(2) Providing for the repair and rehabilitation of existing facilities to keep them in use and prevent deterioration, if feasible.

(3) Providing engineering design and construction services for those facilities that require modi-

fication or additions in order to meet the needs of new or expanded programs.

(c) REPORT.—

(1) TRANSMITTAL.—Within 1 year after the date of the enactment of this Act, the Secretary shall prepare and transmit to the appropriate congressional committees a report containing the plan prepared under subsection (b).

(2) CONTENTS.—For each nonmilitary energy laboratory, such report shall contain—

(A) the current priority list of proposed facilities and infrastructure projects, including cost and schedule requirements;

(B) a current ten-year plan that demonstrates the reconfiguration of its facilities and infrastructure to meet its missions and to address its long-term operational costs and return on investment;

(C) the total current budget for all facilities and infrastructure funding; and

(D) the current status of each facilities and infrastructure project compared to the original baseline cost, schedule, and scope.

(3) ADDITIONAL ELEMENTS.—The report shall also—

(A) include a plan for new facilities and facility modifications at each nonmilitary energy laboratory that will be required to meet the Department's changing missions of the twenty-first century, including schedules and estimates for implementation, and including a section outlining long-term funding requirements consistent with anticipated budgets and annual authorization of appropriations;

(B) address the coordination of modernization and consolidation of facilities among the nonmilitary energy laboratories in order to meet changing mission requirements; and

(C) provide for annual reports to the appropriate congressional committees on accomplishments, conformance to schedules, commitments, and expenditures.

SEC. 543. USER FACILITIES.

(a) NOTICE REQUIREMENT.—When the Department makes a user facility available to universities and other potential users, or seeks input from universities and other potential users regarding significant characteristics or equipment in a user facility or a proposed user facility, the Department shall ensure broad public notice of such

availability or such need for input to universities and other potential users.

(b) COMPETITION REQUIREMENT.—When the Department considers the participation of a university or other potential user in the establishment or operation of a user facility, the Department shall employ full and open competition in selecting such a participant.

(c) PROHIBITION.—The Department may not redesignate a user facility, as defined by section 541(b) as something other than a user facility for avoid the requirements of subsections (a) and (b).

Subtitle D—Advisory Panel on Office of Science

SEC. 561. ESTABLISHMENT.

The Director of the Office of Science and Technology Policy, in consultation with the Secretary, shall establish an Advisory Panel on the Office of Science comprised of knowledgeable individuals to—

(1) address concerns about the current status and the future of scientific research supported by the Office;

(2) examine alternatives to the current organizational structure of the Office within the Department, taking into consideration existing structures

for the support of scientific research in other Federal agencies and the private sector; and

(3) suggest actions to strengthen the scientific research supported by the Office that might be taken jointly by the Department and Congress.

SEC. 562. REPORT.

Within 180 days after the date of the enactment of this Act, the Advisory Panel shall transmit its findings and recommendations in a report to the Director of the Office of Science and Technology Policy and the Secretary. The Director and the Secretary shall jointly—

(1) consider each of the Panel's findings and recommendations, and comment on each as they consider appropriate; and

(2) transmit the Panel's report and the comments of the Director and the Secretary on the report to the appropriate congressional committees within 270 days after the date of the enactment of this Act.

Subtitle E—Department of Energy Authorization of Appropriations

SEC. 581. AUTHORIZATION OF APPROPRIATIONS.

(a) OPERATION AND MAINTENANCE.—Including the amounts authorized to be appropriated for fiscal year 2002 under section 505 for Fusion Energy Sciences and

under section 522(b) for the Spallation Neutron Source, there are authorized to be appropriated to the Secretary for the Office of Science (also including High Energy Physics, Nuclear Physics, Biological and Environmental Research, Basic Energy Sciences (except for the Spallation Neutron Source), Advanced Scientific Computing Research, Energy Research Analysis, Multiprogram Energy Laboratories-Facilities Support, Facilities and Infrastructure, Safeguards and Security, and Program Direction) operation and maintenance $3,296,076,000 for fiscal year 2002, to remain available until expended.

(b) CONSTRUCTION.—In addition to the amounts authorized to be appropriated under section 522(a) for construction of the Spallation Neutron Source, there are authorized to be appropriated to the Secretary for Science—

(1) $11,400,000 for fiscal year 2002 for completion of construction of Project 98-G-304, Neutrinos at the Main Injector, Fermi National Accelerator Laboratory Project;

(2) $10,000,000 for fiscal year 2002 and $1,405,000 for fiscal year 2003 for completion of construction of Project 01-E-300, Laboratory for Comparative and Functional Genomics, Oak Ridge National Laboratory;

(3) $4,000,000 for fiscal year 2002, $8,000,000 for fiscal year 2003, and $2,000,000 for fiscal year 2004 for completion of construction of Project 02-SC-002, Project Engineering Design (PED), Various Locations;

(4) $3,183,000 for fiscal year 2002 for completion of construction of Project 02-SC-002, Multiprogram Energy Laboratories Infrastructure Project Engineering Design (PED), Various Locations; and

(5) $18,133,000 for fiscal year 2002 and $13,029,000 for fiscal year 2003 for completion of construction of Project MEL-001, Multiprogram Energy Laboratories, Infrastructure, Various Locations.

(c) LIMITS ON USE OF FUNDS.—None of the funds authorized to be appropriated in subsection (b) may be used for construction at any national security laboratory as defined in section 3281(1) of the National Defense Authorization Act for Fiscal Year 2000 (50 U.S.C. 2471(1)) or at any nuclear weapons production facility as defined in section 3281(2) of the National Defense Authorization Act for Fiscal Year 2000 (50 U.S.C. 2471(2)).

TITLE VI—MISCELLANEOUS

Subtitle A—General Provisions for the Department of Energy

SEC. 601. RESEARCH, DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION OF ENERGY TECHNOLOGY PROGRAMS, PROJECTS, AND ACTIVITIES.

(a) AUTHORIZED ACTIVITIES.—Except as otherwise provided in this Act, research, development, demonstration, and commercial application programs, projects, and activities for which appropriations are authorized under this Act may be carried out under the procedures of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5901 et seq.), the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.), or any other Act under which the Secretary is authorized to carry out such programs, projects, and activities, but only to the extent the Secretary is authorized to carry out such activities under each such Act.

(b) AUTHORIZED AGREEMENTS.—Except as otherwise provided in this Act, in carrying out research, development, demonstration, and commercial application programs, projects, and activities for which appropriations are authorized under this Act, the Secretary may use, to the extent authorized under applicable provisions of law,

contracts, cooperative agreements, cooperative research and development agreements under the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.), grants, joint ventures, and any other form of agreement available to the Secretary.

(c) DEFINITION.—For purposes of this section, the term ''joint venture'' has the meaning given that term under section 2 of the National Cooperative Research and Production Act of 1993 (15 U.S.C. 4301), except that such term may apply under this section to research, development, demonstration, and commercial application of energy technology joint ventures.

(d) PROTECTION OF INFORMATION.—Section 12(c)(7) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a(c)(7)), relating to the protection of information, shall apply to research, development, demonstration, and commercial application of energy technology programs, projects, and activities for which appropriations are authorized under this Act.

(e) GUIDELINES AND PROCEDURES.—The Secretary shall provide guidelines and procedures for the transition, where appropriate, of energy technologies from research through development and demonstration to commercial application of energy technology. Nothing in this section shall preclude the Secretary from—

(1) entering into a contract, cooperative agreement, cooperative research and development agreement under the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.), grant, joint venture, or any other form of agreement available to the Secretary under this section that relates to research, development, demonstration, and commercial application of energy technology; or

(2) extending a contract, cooperative agreement, cooperative research and development agreement under the Stevenson-Wydler Technology Innovation Act of 1980, grant, joint venture, or any other form of agreement available to the Secretary that relates to research, development, and demonstration to cover commercial application of energy technology.

(f) APPLICATION OF SECTION.—This section shall not apply to any contract, cooperative agreement, cooperative research and development agreement under the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.), grant, joint venture, or any other form of agreement available to the Secretary that is in effect as of the date of enactment of this Act.

SEC. 602. LIMITS ON USE OF FUNDS.

(a) FEDERAL ACQUISITION REGULATION.—

(1) REQUIREMENT.—None of the funds authorized to be appropriated to the Secretary by this Act may be used to award, amend, or modify a contract of the Department in a manner that deviates from the Federal Acquisition Regulation, unless the Secretary grants, on a case-by-case basis, a waiver to allow for such a deviation. The Secretary may not delegate the authority to grant such a waiver.

(2) CONGRESSIONAL NOTICE.—At least 60 days before a contract award, amendment, or modification for which the Secretary intends to grant such a waiver, the Secretary shall submit to the appropriate congressional committees a report notifying the committees of the waiver and setting forth the reasons for the waiver.

(b) MANAGEMENT AND OPERATING CONTRACTS.—

(1) COMPETITIVE PROCEDURE REQUIREMENT.—None of the funds authorized to be appropriated to the Secretary by this Act may be used to award a management and operating contract for a federally owned or operated nonmilitary energy laboratory of the Department unless such contract is awarded using competitive procedures or the Secretary grants, on a case-by-case basis, a waiver to

allow for such a deviation. The Secretary may not delegate the authority to grant such a waiver.

(2) CONGRESSIONAL NOTICE.—At least 60 days before a contract award, amendment, or modification for which the Secretary intends to grant such a waiver, the Secretary shall submit to the appropriate congressional committees a report notifying the committees of the waiver and setting forth the reasons for the waiver.

(c) PRODUCTION OR PROVISION OF ARTICLES OR SERVICES.—None of the funds authorized to be appropriated to the Secretary by this Act may be used to produce or provide articles or services for the purpose of selling the articles or services to a person outside the Federal Government, unless the Secretary determines that comparable articles or services are not available from a commercial source in the United States.

(d) REQUESTS FOR PROPOSALS.—None of the funds authorized to be appropriated to the Secretary by this Act may be used by the Department to prepare or initiate Requests for Proposals for a program, project, or activity if the program, project, or activity has not been specifically authorized by Congress.

(e) TRADE ASSOCIATIONS.—None of the funds authorized to be appropriated to the Secretary by this Act

may be used either directly or indirectly to fund a grant, contract, subcontract, or any other form of financial assistance awarded by the Department to a trade association on a noncompetitive basis. As part of the Department's annual budget request submission to the Congress, the Secretary shall submit a report to the appropriate congressional committees that identifies—

(1) the estimated amount of funds provided by the Department to trade associations, by trade association, for the fiscal year of such budget submission, as well as for the 2 previous fiscal years;

(2) the services either provided or to be provided by each such trade association; and

(3) the sources of funds for services provided by each such trade association.

SEC. 603. COST SHARING.

(a) RESEARCH AND DEVELOPMENT.—Except as otherwise provided in this Act, the Secretary shall require, for research and development programs, projects, and activities carried out by industry under this Act, a commitment from non-Federal sources of at least 20 percent of the cost of such programs, projects, and activities.

(b) DEMONSTRATION AND COMMERCIAL APPLICATION.—Except as otherwise provided in this Act, the Secretary shall require a commitment from non-Federal

sources of at least 50 percent of the cost of any demonstration or commercial application program, project, or activity conducted under this Act.

SEC. 604. LIMITATION ON DEMONSTRATION AND COMMERCIAL APPLICATION OF ENERGY TECHNOLOGY.

Except as otherwise provided in this Act, the Secretary shall provide funding for scientific or energy demonstration and commercial application of energy technology programs, projects, or activities only for technologies or processes that can be reasonably expected to yield new, measurable benefits to the cost, efficiency, or performance of the technology or process.

SEC. 605. REPROGRAMMING.

(a) AUTHORITY.—The Secretary may use amounts appropriated under this Act for a program, project, or activity other than the program, project, or activity for which such amounts were appropriated only if—

(1) the Secretary has transmitted to the appropriate congressional committees a report described in subsection (b) and a period of 30 days has elapsed after such committees receive the report;

(2) amounts used for the program, project, or activity do not exceed—

(A) 105 percent of the amount authorized for the program, project, or activity; or

(B) $250,000 more than the amount authorized for the program, project, or activity,

whichever is less; and

(3) the program, project, or activity has been presented to, or requested of, the Congress by the Secretary.

(b) REPORT.—(1) The report referred to in subsection (a) is a report containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of the proposed action.

(2) In the computation of the 30-day period under subsection (a), there shall be excluded any day on which either House of Congress is not in session because of an adjournment of more than 3 days to a day certain.

(c) LIMITATIONS.—(1) In no event may the total amount of funds obligated by the Secretary pursuant to this Act exceed the total amount authorized to be appropriated to the Secretary by this Act.

(2) Funds appropriated to the Secretary pursuant to this Act may not be used for an item for which Congress has declined to authorize funds.

Subtitle B—Other Miscellaneous Provisions

SEC. 611. NOTICE OF REORGANIZATION.

The Secretary shall provide notice to the appropriate congressional committees not later than 15 days before any reorganization of any environmental research or development, scientific or energy research, development, or demonstration, or commercial application of energy technology program, project, or activity of the Department.

SEC. 612. LIMITS ON GENERAL PLANT PROJECTS.

If, at any time during the construction of a civilian environmental research and development, scientific or energy research, development, or demonstration, or commercial application of energy technology project of the Department for which no specific funding level is provided by law, the estimated cost (including any revision thereof) of the project exceeds $2,000,000, the Secretary may not continue such construction unless the Secretary has furnished a complete report to the appropriate congressional committees explaining the project and the reasons for the estimate or revision.

SEC. 613. LIMITS ON CONSTRUCTION PROJECTS.

(a) LIMITATION.—Except as provided in subsection (b), construction on a civilian environmental research and development, scientific or energy research, development, or

demonstration, or commercial application of energy technology project of the Department for which funding has been specifically provided by law may not be started, and additional obligations may not be incurred in connection with the project above the authorized funding amount, whenever the current estimated cost of the construction project exceeds by more than 10 percent the higher of—

(1) the amount authorized for the project, if the entire project has been funded by the Congress; or

(2) the amount of the total estimated cost for the project as shown in the most recent budget justification data submitted to Congress.

(b) NOTICE.—An action described in subsection (a) may be taken if—

(1) the Secretary has submitted to the appropriate congressional committees a report on the proposed actions and the circumstances making such actions necessary; and

(2) a period of 30 days has elapsed after the date on which the report is received by the committees.

(c) EXCLUSION.—In the computation of the 30-day period described in subsection (b)(2), there shall be excluded any day on which either House of Congress is not

in session because of an adjournment of more than 3 days to a day certain.

(d) EXCEPTION.—Subsections (a) and (b) shall not apply to any construction project that has a current estimated cost of less than $2,000,000.

SEC. 614. AUTHORITY FOR CONCEPTUAL AND CONSTRUCTION DESIGN.

(a) REQUIREMENT FOR CONCEPTUAL DESIGN.—(1) Subject to paragraph (2) and except as provided in paragraph (3), before submitting to Congress a request for funds for a construction project that is in support of a civilian environmental research and development, scientific or energy research, development, or demonstration, or commercial application of energy technology program, project, or activity of the Department, the Secretary shall complete a conceptual design for that project.

(2) If the estimated cost of completing a conceptual design for a construction project exceeds $750,000, the Secretary shall submit to Congress a request for funds for the conceptual design before submitting a request for funds for the construction project.

(3) The requirement in paragraph (1) does not apply to a request for funds for a construction project, the total estimated cost of which is less than $2,000,000.

(b) AUTHORITY FOR CONSTRUCTION DESIGN.—(1) The Secretary may carry out construction design (including architectural and engineering services) in connection with any proposed construction project that is in support of a civilian environmental research and development, scientific or energy research, development, and demonstration, or commercial application of energy technology program, project, or activity of the Department if the total estimated cost for such design does not exceed $250,000.

(2) If the total estimated cost for construction design in connection with any construction project described in paragraph (1) exceeds $250,000, funds for such design must be specifically authorized by law.

SEC. 615. NATIONAL ENERGY POLICY DEVELOPMENT GROUP MANDATED REPORTS.

(a) THE SECRETARY'S REVIEW OF ENERGY EFFICIENCY RENEWABLE ENERGY, AND ALTERNATIVE ENERGY RESEARCH AND DEVELOPMENT.—Upon completion of the Secretary's review of current funding and historic performance of the Department's energy efficiency, renewable energy, and alternative energy research and development programs in response to the recommendations of the May 16, 2001, Report of the National Energy Policy Development Group, the Secretary shall transmit a report

containing the results of such review to the appropriate congressional committees.

(b) REVIEW AND RECOMMENDATIONS ON USING THE NATION'S ENERGY RESOURCES MORE EFFICIENTLY.—Upon completion of the Office of Science and Technology Policy and the President's Council of Advisors on Science and Technology reviewing and making recommendations on using the Nation's energy resources more efficiently, in response to the recommendation of the May 16, 2001, Report of the National Energy Policy Development Group, the Director of the Office of Science and Technology Policy shall transmit a report containing the results of such review and recommendations to the appropriate congressional committees.

SEC. 616. INDEPENDENT REVIEWS AND ASSESSMENTS.

(a) PERIODIC REVIEWS AND ASSESSMENTS.—The Secretary shall enter into appropriate arrangements with the National Academies of Sciences and Engineering to ensure that there be periodic reviews and assessments of the programs, projects, and activities authorized by this Act, as well as the goals for such programs, projects, and activities as established under section 4. Such reviews and assessments shall be conducted at least biennially, and the Secretary shall transmit to the appropriate congressional

committees reports containing the results of such reviews and assessments.

(b) INDEPENDENT ASSESSMENT OF ACCOMPLISHMENTS.—Not later than 180 days after the date of the enactment of this Act, the Administrator and the Secretary shall jointly prepare and transmit to the appropriate congressional committees a report on the Environmental Protection Agency Office of Air and Radiation programs authorized under this Act, all programs of the Office of Energy Efficiency and Renewable Energy, and any programs of other appropriate offices of the Department that may duplicate the programs of those 2 offices, that delineates the similarities and differences between the programs. Such report shall also provide for an independent, peer-reviewed assessment of the performance goals of these programs, the progress being made in meeting those goals, and the accomplishments of these programs.

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