

and materials to enable innovations in building technologies. The program shall evaluate government and industry building efficiency concepts, and demonstrate the ability of next generation buildings to support individual and organizational productivity and health as well as flexibility and technological change to improve environmental sustainability.

(b) PARTICIPANTS.—The program established under subsection (a) shall be led by a university having demonstrated experience with the application of intelligent workplaces and advanced building systems in improving the quality of built environments. Such university shall also have the ability to combine the expertise from more than 12 academic fields, including electrical and computer engineering, computer science, architecture, urban design, and environmental and mechanical engineering. Such university shall partner with other universities and entities who have established programs and the capability of advancing innovative building efficiency technologies.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary of Energy to carry out this section \$18,000,000 for fiscal year 2002, to remain available until expended, of which \$6,000,000 shall be provided to the lead university described in subsection (b), and the remainder shall be provided equally to each of the other participants referred to in subsection (b).

SEC. 126. USE OF INTERVAL DATA IN FEDERAL BUILDINGS.

Section 543 of the National Energy Conservation Policy Act (42 U.S.C. 8253) is amended by adding at the end the following new subsection:

“(h) USE OF INTERVAL DATA IN FEDERAL BUILDINGS.—Not later than January 1, 2003, each agency shall utilize, to the maximum extent practicable, for the purposes of efficient use of energy and reduction in the cost of electricity consumed in its Federal buildings, interval consumption data that measure on a real time or daily basis consumption of electricity in its Federal buildings. To meet the requirements of this subsection each agency shall prepare and submit at the earliest opportunity pursuant to section 548(a) to the Secretary, a plan describing how the agency intends to meet such requirements, including how it will designate personnel primarily responsible for achieving such requirements, and otherwise implement this subsection.”.

SEC. 127. REVIEW OF ENERGY SAVINGS PERFORMANCE CONTRACT PROGRAM.

Within 180 days after the date of the enactment of this Act, the Secretary of Energy shall complete a review of the Energy Savings Performance Contract program to identify statutory, regulatory, and administrative obstacles that prevent Federal agencies from fully utilizing the program. In addition, this review shall identify all areas for increasing program flexibility and effectiveness, including audit and measurement verification requirements, accounting for energy use in determining savings, contracting requirements, and energy efficiency services covered. The Secretary shall report these findings to the Committee on Energy and Commerce of the House of Representatives and the Committee on Energy and Natural Resources of the Senate, and shall implement identified administrative and regulatory changes to increase program flexibility and effectiveness to the extent that such changes are consistent with statutory authority.

SEC. 128. CAPITOL COMPLEX.

(a) ENERGY INFRASTRUCTURE.—The Architect of the Capitol, building on the Master Plan Study completed in July 2000, shall commission a study to evaluate the energy infrastructure of the Capitol Complex to determine how the infrastructure could be augmented to become more energy efficient, using unconventional and renewable energy resources, in a way that would enable the Complex to have reliable utility service in the event of power fluctuations, shortages, or outages.

(b) AUTHORIZATION.—There is authorized to be appropriated to the Architect of the Capitol to carry out this section, not more than \$2,000,000 for fiscal years after the enactment of this Act.

Subtitle C—State Programs

SEC. 131. AMENDMENTS TO STATE ENERGY PROGRAMS.

(a) STATE ENERGY CONSERVATION PLANS.—Section 362 of the Energy Policy and Conservation Act (42 U.S.C. 6322) is amended by inserting at the end the following new subsection:

“(g) The Secretary shall, at least once every three years, invite the Governor of each State to review and, if necessary, revise the energy conservation plan of such State submitted under subsection (b) or (e). Such reviews should consider the energy conservation plans of other States within the region, and identify opportunities and actions carried out in pursuit of common energy conservation goals.”.

(b) STATE ENERGY EFFICIENCY GOALS.—Section 364 of the Energy Policy and Conservation Act (42 U.S.C. 6324) is amended by inserting “Each State energy conservation plan with respect to which assistance is made available under this part on or after the date of the enactment of Energy Advancement and Conservation Act of 2001, shall contain a goal, consisting of an improvement of 25 percent or more in the efficiency of use of energy in the State concerned in the calendar year 2010 as compared to the calendar year 1990, and may contain interim goals.” after “contain interim goals.”.

(c) AUTHORIZATION OF APPROPRIATIONS.—Section 365(f) of the Energy Policy and Conservation Act (42 U.S.C. 6325(f)) is amended by striking “for fiscal years 1999 through 2003 such sums as may be necessary” and inserting “\$75,000,000 for fiscal year 2002, \$100,000,000 for fiscal years 2003 and 2004, \$125,000,000 for fiscal year 2005”.

SEC. 132. REAUTHORIZATION OF ENERGY CONSERVATION PROGRAM FOR SCHOOLS AND HOSPITALS.

Section 397 of the Energy Policy and Conservation Act (42 U.S.C. 6371f) is amended by striking “2003” and inserting “2010”.

SEC. 133. AMENDMENTS TO WEATHERIZATION ASSISTANCE PROGRAM.

Section 422 of the Energy Conservation and Production Act (42 U.S.C. 6872) is amended by striking “for fiscal years 1999 through 2003 such sums as may be necessary” and inserting “\$273,000,000 for fiscal year 2002, \$325,000,000 for fiscal year 2003, \$400,000,000 for fiscal year 2004, and \$500,000,000 for fiscal year 2005”.

SEC. 134. LIHEAP.

(a) AUTHORIZATION OF APPROPRIATIONS.—Section 2602(b) of the Low-Income Home Energy Assistance Act of 1981 (42 U.S.C. 8621(b)) is amended by striking the first sentence and inserting the following: “There are authorized to be appropriated to carry out the provisions of this title (other than section 2607A), \$3,400,000,000 for each of fiscal years 2001 through 2005.”.

(b) GAO STUDY.—The Comptroller General of the United States shall conduct a study to determine—

(1) the extent to which Low-Income Home Energy Assistance (LIHEAP) and other government energy subsidies paid to consumers discourage energy conservation and energy efficiency investments; and

(2) the extent to which the goals of conservation and assistance for low income households could be simultaneously achieved through cash income supplements that do not specifically target energy, thereby maintaining incentives for wise use of expensive forms of energy, or through other means.

SEC. 135. HIGH PERFORMANCE PUBLIC BUILDINGS.

(a) PROGRAM ESTABLISHMENT AND ADMINISTRATION.—

(1) ESTABLISHMENT.—There is established in the Department of Energy the High Performance Public Buildings Program (in this section referred to as the “Program”).

(2) IN GENERAL.—The Secretary of Energy may, through the Program, make grants—

(A) to assist units of local government in the production, through construction or renovation of buildings and facilities they own and operate, of high performance public buildings and facilities that are healthful, productive, energy efficient, and environmentally sound;

(B) to State energy offices to administer the program of assistance to units of local government pursuant to this section; and

(C) to State energy offices to promote participation by units of local government in the Program.

(3) GRANTS TO ASSIST UNITS OF LOCAL GOVERNMENT.—Grants under paragraph (2)(A) for new public buildings shall be used to achieve energy efficiency performance that reduces energy use at least 30 percent below that of a public building constructed in compliance with standards prescribed in Chapter 8 of the 2000 International Energy Conservation Code, or a similar State code intended to achieve substantially equivalent results. Grants under paragraph (2)(A) for existing public buildings shall be used to achieve energy efficiency performance that reduces energy use below the public building baseline consumption, assuming a 3-year, weather-normalized average for calculating such baseline. Grants under paragraph (2)(A) shall be made to units of local government that have—

(A) demonstrated a need for such grants in order to respond appropriately to increasing population or to make major investments in renovation of public buildings; and

(B) made a commitment to use the grant funds to develop high performance public buildings in accordance with a plan developed and approved pursuant to paragraph (5)(A).

(4) OTHER GRANTS.—

(A) GRANTS FOR ADMINISTRATION.—Grants under paragraph (2)(B) shall be used to evaluate compliance by units of local government with the requirements of this section, and in addition may be used for—

(i) distributing information and materials to clearly define and promote the development of high performance public buildings for both new and existing facilities;

(ii) organizing and conducting programs for local government personnel, architects, engineers, and others to advance the concepts of high performance public buildings;

(iii) obtaining technical services and assistance in planning and designing high performance public buildings; and

(iv) collecting and monitoring data and information pertaining to the high performance public building projects.

(B) GRANTS TO PROMOTE PARTICIPATION.—Grants under paragraph (2)(C) may be used for promotional and marketing activities, including facilitating private and public financing, promoting the use of energy service companies, working with public building users, and communities, and coordinating public benefit programs.

(5) IMPLEMENTATION.—

(A) PLANS.—A grant under paragraph (2)(A) shall be provided only to a unit of local government that, in consultation with its State office of energy, has developed a plan that the State energy office determines to be feasible and appropriate in order to achieve the purposes for which such grants are made.

(B) SUPPLEMENTING GRANT FUNDS.—State energy offices shall encourage qualifying units of local government to supplement their grant funds with funds from other sources in the implementation of their plans.

(b) ALLOCATION OF FUNDS.—

(1) IN GENERAL.—Except as provided in paragraph (3), funds appropriated to carry out this section shall be provided to State energy offices.

(2) PURPOSES.—Except as provided in paragraph (3), funds appropriated to carry out this section shall be allocated as follows:

(A) Seventy percent shall be used to make grants under subsection (a)(2)(A).

(B) Fifteen percent shall be used to make grants under subsection (a)(2)(B).

(C) Fifteen percent shall be used to make grants under subsection (a)(2)(C).

(3) OTHER FUNDS.—The Secretary of Energy may retain not to exceed \$300,000 per year from amounts appropriated under subsection (c) to assist State energy offices in coordinating and implementing the Program. Such funds may be used to develop reference materials to further define the principles and criteria to achieve high performance public buildings.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary of Energy to carry out this section such sums as may be necessary for each of the fiscal years 2002 through 2010.

(d) REPORT TO CONGRESS.—The Secretary of Energy shall conduct a biennial review of State actions implementing this section, and the Secretary shall report to Congress on the results of such reviews. In conducting such reviews, the Secretary shall assess the effectiveness of the calculation procedures used by the States in establishing eligibility of units of local government for funding under this section, and may assess other aspects of the State program to determine whether they have been effectively implemented.

(e) DEFINITIONS.—For purposes of this section:

(1) HIGH PERFORMANCE PUBLIC BUILDING.—The term “high performance public building” means a public building which, in its design, construction, operation, and maintenance, maximizes use of unconventional and renewable energy resources and energy efficiency practices, is cost-effective on a life cycle basis, uses affordable, environmentally preferable, durable materials, enhances indoor environmental quality, protects and conserves water, and optimizes site potential.

(2) RENEWABLE ENERGY.—The term “renewable energy” means energy produced by solar, wind, geothermal, hydroelectric, or biomass power.

(3) UNCONVENTIONAL AND RENEWABLE ENERGY RESOURCES.—The term “unconven-

tional and renewable energy resources” means renewable energy, hydrogen, fuel cells, cogeneration, combined heat and power, heat recovery (including by use of a Stirling heat engine), and distributed generation.

Subtitle D—Energy Efficiency for Consumer Products

SEC. 141. ENERGY STAR PROGRAM.

(a) AMENDMENT.—The Energy Policy and Conservation Act (42 U.S.C. 6201 and following) is amended by inserting the following after section 324:

“SEC. 324A. ENERGY STAR PROGRAM.

“(a) IN GENERAL.—There is established at the Department of Energy and the Environmental Protection Agency a program to identify and promote energy-efficient products and buildings in order to reduce energy consumption, improve energy security, and reduce pollution through labeling of products and buildings that meet the highest energy efficiency standards. Responsibilities under the program shall be divided between the Department of Energy and the Environmental Protection Agency consistent with the terms of agreements between the two agencies. The Administrator and the Secretary shall—

“(1) promote Energy Star compliant technologies as the preferred technologies in the marketplace for achieving energy efficiency and to reduce pollution;

“(2) work to enhance public awareness of the Energy Star label; and

“(3) preserve the integrity of the Energy Star label.

For the purposes of carrying out this section, there is authorized to be appropriated for fiscal years 2002 through 2006 such sums as may be necessary, to remain available until expended.

“(b) STUDY OF CERTAIN PRODUCTS AND BUILDINGS.—Within 180 days after the date of enactment of this section, the Secretary and the Administrator, consistent with the terms of agreements between the two agencies (including existing agreements with respect to which agency shall handle a particular product or building), shall determine whether the Energy Star label should be extended to additional products and buildings, including the following:

“(1) Air cleaners.

“(2) Ceiling fans.

“(3) Light commercial heating and cooling products.

“(4) Reach-in refrigerators and freezers.

“(5) Telephony.

“(6) Vending machines.

“(7) Residential water heaters.

“(8) Refrigerated beverage merchandisers.

“(9) Commercial ice makers.

“(10) School buildings.

“(11) Retail buildings.

“(12) Health care facilities.

“(13) Homes.

“(14) Hotels and other commercial lodging facilities.

“(15) Restaurants and other food service facilities.

“(16) Solar water heaters.

“(17) Building-integrated photovoltaic systems.

“(18) Reflective pigment coatings.

“(19) Windows.

“(20) Boilers.

“(21) Devices to extend the life of motor vehicle oil.

“(c) COOL ROOFING.—In determining whether the Energy Star label should be extended to roofing products, the Secretary and the Administrator shall work with the roofing

products industry to determine the appropriate solar reflective index of roofing products.”

(b) TABLE OF CONTENTS AMENDMENT.—The table of contents of the Energy Policy and Conservation Act is amended by inserting after the item relating to section 324 the following new item:

“Sec. 324A. Energy Star program.”

SEC. 142. LABELING OF ENERGY EFFICIENT APPLIANCES.

(a) STUDY.—Section 324(e) of the Energy Policy and Conservation Act (42 U.S.C. 6294(e)) is amended as follows:

(1) By inserting “(1)” before “The Secretary, in consultation”.

(2) By redesignating paragraphs (1) and (2) as subparagraphs (A) and (B), respectively.

(3) By adding the following new paragraph at the end:

“(2) The Secretary shall make recommendations to the Commission within 180 days of the date of enactment of this paragraph regarding labeling of consumer products that are not covered products in accordance with this section, where such labeling is likely to assist consumers in making purchasing decisions and is technologically and economically feasible.”

(b) NONCOVERED PRODUCTS.—Section 324(a)(2) of the Energy Policy and Conservation Act (42 U.S.C. 6294(a)(2)) is amended by adding the following at the end:

“(F) Not later than one year after the date of enactment of this subparagraph, the Commission shall initiate a rulemaking to prescribe labeling rules under this section applicable to consumer products that are not covered products if it determines that labeling of such products is likely to assist consumers in making purchasing decisions and is technologically and economically feasible.

“(G) Not later than three months after the date of enactment of this subparagraph, the Commission shall initiate a rulemaking to consider the effectiveness of the current consumer products labeling program in assisting consumers in making purchasing decisions and improving energy efficiency and to consider changes to the label that would improve the effectiveness of the label. Such rulemaking shall be completed within 15 months of the date of enactment of this subparagraph.”

SEC. 143. APPLIANCE STANDARDS.

(a) STANDARDS FOR HOUSEHOLD APPLIANCES IN STANDBY MODE.—(1) Section 325 of the Energy Policy and Conservation Act (42 U.S.C. 6295) is amended by adding at the end the following:

“(u) STANDBY MODE ELECTRIC ENERGY CONSUMPTION BY HOUSEHOLD APPLIANCES.—(1) In this subsection:

“(A) The term ‘household appliance’ means any device that uses household electric current, operates in a standby mode, and is identified by the Secretary as a major consumer of electricity in standby mode, except digital televisions, digital set top boxes, digital video recorders, any product recognized under the Energy Star program, any product that was on the date of enactment of this Act subject to an energy conservation standard under this section, and any product regarding which the Secretary finds that the expected additional cost to the consumer of purchasing such product as a result of complying with a standard established under this section is not economically justified within the meaning of subsection (o).

“(B) The term ‘standby mode’ means a mode in which a household appliance consumes the least amount of electric energy that the household appliance is capable of

consuming without being completely switched off (provided that, the amount of electric energy consumed in such mode is substantially less than the amount the household appliance would consume in its normal operational mode).

“(C) The term ‘major consumer of electricity in standby mode’ means a product for which a standard prescribed under this section would result in substantial energy savings as compared to energy savings achieved or expected to be achieved by standards established by the Secretary under subsections (o) and (p) of this section for products that were, at the time of enactment of this subsection, covered products under this section.

“(2)(A) Except as provided in subparagraph (B), a household appliance that is manufactured in, or imported for sale in, the United States on or after the date that is 2 years after the date of enactment of this subsection shall not consume in standby mode more than 1 watt.

“(B) In the case of analog televisions, the Secretary shall prescribe, on or after the date that is 2 years after the date of enactment of this subsection, in accordance with subsections (o) and (p) of section 325, an energy conservation standard that is technologically feasible and economically justified under section 325(o)(2)(A) (in lieu of the 1 watt standard under subparagraph (A)).

“(3)(A) A manufacturer or importer of a household appliance may submit to the Secretary an application for an exemption of the household appliance from the standard under paragraph (2).

“(B) The Secretary shall grant an exemption for a household appliance for which an application is made under subparagraph (A) if the applicant provides evidence showing that, and the Secretary determines that—

“(i) it is not technically feasible to modify the household appliance to enable the household appliance to meet the standard;

“(ii) the standard is incompatible with an energy efficiency standard applicable to the household appliance under another subsection; or

“(iii) the cost of electricity that a typical consumer would save in operating the household appliance meeting the standard would not equal the increase in the price of the household appliance that would be attributable to the modifications that would be necessary to enable the household appliance to meet the standard by the earlier of—

“(I) the date that is 7 years after the date of purchase of the household appliance; or

“(II) the end of the useful life of the household appliance.

“(C) If the Secretary determines that it is not technically feasible to modify a household appliance to meet the standard under paragraph (2), the Secretary shall establish a different standard for the household appliance in accordance with the criteria under subsection (1).

“(4)(A) Not later than 1 year after the date of enactment of this subsection, the Secretary shall establish a test procedure for determining the amount of consumption of power by a household appliance operating in standby mode.

“(B) In establishing the test procedure, the Secretary shall consider—

“(i) international test procedures under development;

“(ii) test procedures used in connection with the Energy Star program; and

“(iii) test procedures used for measuring power consumption in standby mode in other countries.

“(5) FURTHER REDUCTION OF STANDBY POWER CONSUMPTION.—The Secretary shall provide

technical assistance to manufacturers in achieving further reductions in standby mode electric energy consumption by household appliances.

“(v) STANDBY MODE ELECTRIC ENERGY CONSUMPTION BY DIGITAL TELEVISIONS, DIGITAL SET TOP BOXES, AND DIGITAL VIDEO RECORDERS.—The Secretary shall initiate on January 1, 2007 a rulemaking to prescribe, in accordance with subsections (o) and (p), an energy conservation standard of standby mode electric energy consumption by digital television sets, digital set top boxes, and digital video recorders. The Secretary shall issue a final rule prescribing such standards not later than 18 months thereafter. In determining whether a standard under this section is technologically feasible and economically justified under section 325(o)(2)(A), the Secretary shall consider the potential effects on market penetration by digital products covered under this section, and shall consider any recommendations by the FCC regarding such effects.”

(2) Section 325(o)(3) of the Energy Policy and Conservation Act (42 U.S.C. 6295(n)(1)) is amended by inserting at the end of the paragraph the following: “Notwithstanding any provision of this part, the Secretary shall not amend a standard established under subsection (u) or (v) of this section.”

(b) STANDARDS FOR NONCOVERED PRODUCTS.—Section 325(m) of the Energy Policy and Conservation Act (42 U.S.C. 6295(m)) is amended as follows:

(1) Inserting “(1)” before “After”.

(2) Inserting the following at the end:

“(2) ‘Not later than one year after the date of enactment of the Energy Advancement and Conservation Act of 2001, the Secretary shall conduct a rulemaking to determine whether consumer products not classified as a covered product under section 322(a)(1) through (18) meet the criteria of section 322(b)(1) and is a major consumer of electricity. If the Secretary finds that a consumer product not classified as a covered product meets the criteria of section 322(b)(1), he shall prescribe, in accordance with subsections (o) and (p), an energy conservation standard for such consumer product, if such standard is reasonably probable to be technologically feasible and economically justified within the meaning of subsection (o)(2)(A). As used in this paragraph, the term ‘major consumer of electricity’ means a product for which a standard prescribed under this section would result in substantial aggregate energy savings as compared to energy savings achieved or expected to be achieved by standards established by the Secretary under paragraphs (o) and (p) of this section for products that were, at the time of enactment of this paragraph, covered products under this section.”

(c) CONSUMER EDUCATION ON ENERGY EFFICIENCY BENEFITS OF AIR CONDITIONING, HEATING AND VENTILATION MAINTENANCE.—Section 337 of the Energy Policy and Conservation Act (42 U.S.C. 6307) is amended by adding the following new subsection after subsection (b):

“(c) HVAC MAINTENANCE.—For the purpose of ensuring that installed air conditioning and heating systems operate at their maximum rated efficiency levels, the Secretary shall, within 180 days of the date of enactment of this subsection, develop and implement a public education campaign to educate homeowners and small business owners concerning the energy savings resulting from regularly scheduled maintenance of air conditioning, heating, and ventilating systems. In developing and implementing this cam-

paign, the Secretary shall consider support by the Department of public education programs sponsored by trade and professional and energy efficiency organizations. The public service information shall provide sufficient information to allow consumers to make informed choices from among professional, licensed (where State or local licensing is required) contractors. There are authorized to be appropriated to carry out this subsection \$5,000,000 for fiscal years 2002 and 2003 in addition to amounts otherwise appropriated in this part.”

(d) EFFICIENCY STANDARDS FOR FURNACE FANS, CEILING FANS, AND COLD DRINK VENDING MACHINES.—

(1) DEFINITIONS.—Section 321 of the Energy Policy and Conservation Act (42 U.S.C. 6291) is amended by adding the following at the end thereof:

“(32) The term ‘residential furnace fan’ means an electric fan installed as part of a furnace for purposes of circulating air through the system air filters, the heat exchangers or heating elements of the furnace, and the duct work.

“(33) The terms ‘residential central air conditioner fan’ and ‘heat pump circulation fan’ mean an electric fan installed as part of a central air conditioner or heat pump for purposes of circulating air through the system air filters, the heat exchangers of the air conditioner or heat pump, and the duct work.

“(34) The term ‘suspended ceiling fan’ means a fan intended to be mounted to a ceiling outlet box, ceiling building structure, or to a vertical rod suspended from the ceiling, and which as blades which rotate below the ceiling and consists of an electric motor, fan blades (which rotate in a direction parallel to the floor), an optional lighting kit, and one or more electrical controls (integral or remote) governing fan speed and lighting operation.

“(35) The term ‘refrigerated bottled or canned beverage vending machine’ means a machine that cools bottled or canned beverages and dispenses them upon payment.”

(2) TESTING REQUIREMENTS.—Section 323 of the Energy Policy and Conservation Act (42 U.S.C. 6293) is amended by adding the following at the end thereof:

“(f) ADDITIONAL CONSUMER PRODUCTS.—The Secretary shall within 18 months after the date of enactment of this subsection prescribe testing requirements for residential furnace fans, residential central air conditioner fans, heat pump circulation fans, suspended ceiling fans, and refrigerated bottled or canned beverage vending machines. Such testing requirements shall be based on existing test procedures used in industry to the extent practical and reasonable. In the case of residential furnace fans, residential central air conditioner fans, heat pump circulation fans, and suspended ceiling fans, such test procedures shall include efficiency at both maximum output and at an output no more than 50 percent of the maximum output.”

(3) STANDARDS FOR ADDITIONAL CONSUMER PRODUCTS.—Section 325 of the Energy Policy and Conservation Act (42 U.S.C. 6295) is amended by adding the following at the end thereof:

“(w) RESIDENTIAL FURNACE FANS, CENTRAL AIR AND HEAT PUMP CIRCULATION FANS, SUSPENDED CEILING FANS, AND VENDING MACHINES.—(1) The Secretary shall, within 18 months after the date of enactment of this subsection, assess the current and projected future market for residential furnace fans, residential central air conditioner and heat

pump circulation fans, suspended ceiling fans, and refrigerated bottled or canned beverage vending machines. This assessment shall include an examination of the types of products sold, the number of products in use, annual sales of these products, energy used by these products sold, the number of products in use, annual sales of these products, energy used by these products, estimates of the potential energy savings from specific technical improvements to these products, and an examination of the cost-effectiveness of these improvements. Prior to the end of this time period, the Secretary shall hold an initial scoping workshop to discuss and receive input to plans for developing minimum efficiency standards for these products.

“(2) The Secretary shall within 24 months after the date on which testing requirements are prescribed by the Secretary pursuant to section 323(f), prescribe, by rule, energy conservation standards for residential furnace fans, residential central air conditioner and heat pump circulation fans, suspended ceiling fans, and refrigerated bottled or canned beverage vending machines. In establishing these standards, the Secretary shall use the criteria and procedures contained in subsections (1) and (m). Any standard prescribed under this section shall apply to products manufactured 36 months after the date such rule is published.”

(4) LABELING.—Section 324(a) of the Energy Policy and Conservation Act (42 U.S.C. 6294(a)) is amended by adding the following at the end thereof:

“(5) The Secretary shall within 6 months after the date on which energy conservation standards are prescribed by the Secretary for covered products referred to in section 325(w), prescribe, by rule, labeling requirements for such products. These requirements shall take effect on the same date as the standards prescribed pursuant to section 325(w).”

(5) COVERED PRODUCTS.—Section 322(a) of the Energy Policy and Conservation Act (42 U.S.C. 6292(a)) is amended by redesignating paragraph (19) as paragraph (20) and by inserting after paragraph (18) the following:

“(19) Beginning on the effective date for standards established pursuant to subsection (v) of section 325, each product referred to in such subsection (v).”

Subtitle E—Energy Efficient Vehicles

SEC. 151. HIGH OCCUPANCY VEHICLE EXCEPTION.

(a) IN GENERAL.—Notwithstanding section 102(a)(1) of title 23, United States Code, a State may, for the purpose of promoting energy conservation, permit a vehicle with fewer than 2 occupants to operate in high occupancy vehicle lanes if such vehicle is a hybrid vehicle or is fueled by an alternative fuel.

(b) HYBRID VEHICLE DEFINED.—In this section, the term “hybrid vehicle” means a motor vehicle—

(1) which draws propulsion energy from on-board sources of stored energy which are both—

(A) an internal combustion or heat engine using combustible fuel; and

(B) a rechargeable energy storage system;

(2) which, in the case of a passenger automobile or light truck—

(A) for 2002 and later model vehicles, has received a certificate of conformity under section 206 of the Clean Air Act (42 U.S.C. 7525) and meets or exceeds the equivalent qualifying California low emission vehicle standard under section 243(e)(2) of the Clean Air Act (42 U.S.C. 7583(e)(2)) for that make and model year; and

(B) for 2004 and later model vehicles, has received a certificate that such vehicle meets the Tier II emission level established in regulations prescribed by the Administrator of the Environmental Protection Agency under section 202(i) of the Clean Air Act (42 U.S.C. 7521(i)) for that make and model year vehicle; and

(3) which is made by a manufacturer.

(c) ALTERNATIVE FUEL DEFINED.—In this section, the term “alternative fuel” has the meaning such term has under section 301(2) of the Energy Policy Act of 1992 (42 U.S.C. 13211(2)).

SEC. 152. RAILROAD EFFICIENCY.

(a) LOCOMOTIVE TECHNOLOGY DEMONSTRATION.—The Secretary of Energy shall establish a public-private research partnership with railroad carriers, locomotive manufacturers, and a world-class research and test center dedicated to the advancement of railroad technology, efficiency, and safety that is owned by the Federal Railroad Administration and operated in the private sector, for the development and demonstration of locomotive technologies that increase fuel economy and reduce emissions.

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary of Energy \$25,000,000 for fiscal year 2002, \$30,000,000 for fiscal year 2003, and \$35,000,000 for fiscal year 2004 for carrying out this section.

SEC. 153. BIODIESEL FUEL USE CREDITS.

Section 312(c) of the Energy Policy Act of 1992 (42 U.S.C. 13220(c)) is amended—

(1) by striking “NOT” in the subsection heading; and

(2) by striking “not”.

SEC. 154. MOBILE TO STATIONARY SOURCE TRADING.

Within 90 days after the enactment of this section, the Administrator of the Environmental Protection Agency is directed to commence a review of the Agency’s policies regarding the use of mobile to stationary source trading of emission credits under the Clean Air Act to determine whether such trading can provide both nonattainment and attainment areas with additional flexibility in achieving and maintaining healthy air quality and increasing use of alternative fuel and advanced technology vehicles, thereby reducing United States dependence on foreign oil.

Subtitle F—Other Provisions

SEC. 161. REVIEW OF REGULATIONS TO ELIMINATE BARRIERS TO EMERGING ENERGY TECHNOLOGY.

(a) IN GENERAL.—Each Federal agency shall carry out a review of its regulations and standards to determine those that act as a barrier to market entry for emerging energy-efficient technologies, including, but not limited to, fuel cells, combined heat and power, and distributed generation (including small-scale renewable energy).

(b) REPORT TO CONGRESS.—No later than 18 months after the date of enactment of this section, each agency shall provide a report to Congress and the President detailing all regulatory barriers to emerging energy-efficient technologies, along with actions the agency intends to take, or has taken, to remove such barriers.

(c) PERIODIC REVIEW.—Each agency shall subsequently review its regulations and standards in the manner specified in this section no less frequently than every 5 years, and report their findings to Congress and the President. Such reviews shall include a detailed analysis of all agency actions taken to remove existing barriers to emerging energy technologies.

SEC. 162. ADVANCED IDLE ELIMINATION SYSTEMS.

(a) DEFINITIONS.—

(1) ADVANCED IDLE ELIMINATION SYSTEM.—The term “advanced idle elimination system” means a device or system of devices that is installed at a truck stop or other location (for example, a loading, unloading, or transfer facility) where vehicles (such as trucks, trains, buses, boats, automobiles, and recreational vehicles) are parked and that is designed to provide to the vehicle the services (such as heat, air conditioning, and electricity) that would otherwise require the operation of the auxiliary or drive train engine or both while the vehicle is stationary and parked.

(2) EXTENDED IDLING.—The term “extended idling” means the idling of a motor vehicle for a period greater than 60 minutes.

(b) RECOGNITION OF BENEFITS OF ADVANCED IDLE ELIMINATION SYSTEMS.—Within 90 days after the date of enactment of this subsection, the Administrator of the Environmental Protection Agency is directed to commence a review of the Agency’s mobile source air emissions models used under the Clean Air Act to determine whether such models accurately reflect the emissions resulting from extended idling of heavy-duty trucks and other vehicles and engines, and shall update those models as the Administrator deems appropriate. Additionally, within 90-days after the date of enactment of this subsection, the Administrator shall commence a review as to the appropriate emissions reductions credit that should be allotted under the Clean Air Act for the use of advanced idle elimination systems, and whether such credits should be subject to an emissions trading system, and shall revise Agency regulations and guidance as the Administrator deems appropriate.

SEC. 163. STUDY OF BENEFITS AND FEASIBILITY OF OIL BYPASS FILTRATION TECHNOLOGY.

(a) STUDY.—The Secretary of Energy and the Administrator of the Environmental Protection Agency shall jointly conduct a study of oil bypass filtration technology in motor vehicle engines. The study shall analyze and quantify the potential benefits of such technology in terms of reduced demand for oil and the potential environmental benefits of the technology in terms of reduced waste and air pollution. The Secretary and the Administrator shall also examine the feasibility of using such technology in the Federal motor vehicle fleet.

(b) REPORT.—Not later than 6 months after the enactment of this Act, the Secretary of Energy and the Administrator of the Environmental Protection Agency shall jointly submit a report containing the results of the study conducted under subsection (a) to the Committee on Energy and Commerce of the United States House of Representatives and to the Committee on Energy and Natural Resources of the United States Senate.

SEC. 164. GAS FLARE STUDY.

(a) STUDY.—The Secretary of Energy shall conduct a study of the economic feasibility of installing small cogeneration facilities utilizing excess gas flares at petrochemical facilities to provide reduced electricity costs to customers living within 3 miles of the petrochemical facilities. The Secretary shall solicit public comment to assist in preparing the report required under subsection (b).

(b) REPORT.—Not later than 18 months after the date of the enactment of this Act, the Secretary of Energy shall transmit a report to the Congress on the results of the study conducted under subsection (a).

SEC. 165. TELECOMMUTING STUDY.

(a) **STUDY REQUIRED.**—The Secretary, in consultation with Commission, and the NTIA, shall conduct a study of the energy conservation implications of the widespread adoption of telecommuting in the United States.

(b) **REQUIRED SUBJECTS OF STUDY.**—The study required by subsection (a) shall analyze the following subjects in relation to the energy saving potential of telecommuting:

(1) Reductions of energy use and energy costs in commuting and regular office heating, cooling, and other operations.

(2) Other energy reductions accomplished by telecommuting.

(3) Existing regulatory barriers that hamper telecommuting, including barriers to broadband telecommunications services deployment.

(4) Collateral benefits to the environment, family life, and other values.

(c) **REPORT REQUIRED.**—The Secretary shall submit to the President and the Congress a report on the study required by this section not later than 6 months after the date of enactment of this Act. Such report shall include a description of the results of the analysis of each of the subject described in subsection (b).

(d) **DEFINITIONS.**—As used in this section:

(1) **SECRETARY.**—The term “Secretary” means the Secretary of Energy.

(2) **COMMISSION.**—The term “Commission” means the Federal Communications Commission.

(3) **NTIA.**—The term “NTIA” means the National Telecommunications and Information Administration of the Department of Commerce.

(4) **TELECOMMUTING.**—The term “telecommuting” means the performance of work functions using communications technologies, thereby eliminating or substantially reducing the need to commute to and from traditional worksites.

TITLE II—AUTOMOBILE FUEL ECONOMY**SEC. 201. AVERAGE FUEL ECONOMY STANDARDS FOR NONPASSENGER AUTOMOBILES.**

Section 32902(a) of title 49, United States Code, is amended—

(1) by inserting “(1)” after “NONPASSENGER AUTOMOBILES.—”; and

(2) by adding at the end the following:

“(2) The Secretary shall prescribe under paragraph (1) average fuel economy standards for automobiles (except passenger automobiles) manufactured in model years 2004 through 2010 that are calculated to ensure that the aggregate amount of gasoline projected to be used in those model years by automobiles to which the standards apply is at least 5 billion gallons less than the aggregate amount of gasoline that would be used in those model years by such automobiles if they achieved only the fuel economy required under the average fuel economy standard that applies under this subsection to automobiles (except passenger automobiles) manufactured in model year 2002.”.

SEC. 202. CONSIDERATION OF PRESCRIBING DIFFERENT AVERAGE FUEL ECONOMY STANDARDS FOR NONPASSENGER AUTOMOBILES.

(a) **IN GENERAL.**—The Secretary of Transportation shall, in prescribing average fuel economy standards under section 32902(a) of title 49, United States Code, for automobiles (except passenger automobiles) manufactured in model year 2004, consider the potential benefits of—

(1) establishing a weight-based system for automobiles, that is based on the inertia weight, curb weight, gross vehicle weight

rating, or another appropriate measure of such automobiles; and

(2) prescribing different fuel economy standards for automobiles that are subject to the weight-based system.

(b) **SPECIFIC CONSIDERATIONS.**—In implementing this section the Secretary—

(1) shall consider any recommendations made in the National Academy of Sciences study completed pursuant to the Department of Transportation and Related Agencies Appropriations Act, 2000 (Public Law 106-346; 114 Stat. 2763 et seq.); and

(2) shall evaluate the merits of any weight-based system in terms of motor vehicle safety, energy conservation, and competitiveness of and employment in the United States automotive sector, and if a weight-based system is established by the Secretary a manufacturer may trade credits between or among the automobiles (except passenger automobiles) manufactured by the manufacturer.

SEC. 203. DUAL FUELED AUTOMOBILES.

(a) **PURPOSES.**—The purposes of this section are—

(1) to extend the manufacturing incentives for dual fueled automobiles, as set forth in subsections (b) and (d) of section 32905 of title 49, United States Code, through the 2008 model year; and

(2) to similarly extend the limitation on the maximum average fuel economy increase for such automobiles, as set forth in subsection (a)(1) of section 32906 of title 49, United States Code.

(b) **AMENDMENTS.**—

(1) **MANUFACTURING INCENTIVES.**—Section 32905 of title 49, United States Code, is amended as follows:

(A) Subsections (b) and (d) are each amended by striking “model years 1993-2004” and inserting “model years 1993-2008”.

(B) Subsection (f) is amended by striking “Not later than December 31, 2001, the Secretary” and inserting “Not later than December 31, 2005, the Secretary”.

(C) Subsection (f)(1) is amended by striking “model year 2004” and inserting “model year 2008”.

(D) Subsection (g) is amended by striking “Not later than September 30, 2000” and inserting “Not later than September 30, 2004”.

(2) **MAXIMUM FUEL ECONOMY INCREASE.**—Subsection (a)(1) of section 32906 of title 49, United States Code, is amended as follows:

(A) Subparagraph (A) is amended by striking “the model years 1993-2004” and inserting “model years 1993-2008”.

(B) Subparagraph (B) is amended by striking “the model years 2005-2008” and inserting “model years 2009-2012”.

SEC. 204. FUEL ECONOMY OF THE FEDERAL FLEET OF AUTOMOBILES.

Section 32917 of title 49, United States Code, is amended to read as follows:

“§32917. Standards for executive agency automobiles

“(a) **BASELINE AVERAGE FUEL ECONOMY.**—The head of each executive agency shall determine, for all automobiles in the agency’s fleet of automobiles that were leased or bought as a new vehicle in fiscal year 1999, the average fuel economy for such automobiles. For the purposes of this section, the average fuel economy so determined shall be the baseline average fuel economy for the agency’s fleet of automobiles.

“(b) **INCREASE OF AVERAGE FUEL ECONOMY.**—The head of an executive agency shall manage the procurement of automobiles for that agency in such a manner that—

“(1) not later than September 30, 2003, the average fuel economy of the new automobiles in the agency’s fleet of automobiles

is not less than 1 mile per gallon higher than the baseline average fuel economy determined under subsection (a) for that fleet; and

“(2) not later than September 30, 2005, the average fuel economy of the new automobiles in the agency’s fleet of automobiles is not less than 3 miles per gallon higher than the baseline average fuel economy determined under subsection (a) for that fleet.

“(c) **CALCULATION OF AVERAGE FUEL ECONOMY.**—Average fuel economy shall be calculated for the purposes of this section in accordance with guidance which the Secretary of Transportation shall prescribe for the implementation of this section.

“(d) **DEFINITIONS.**—In this section:

“(1) The term ‘automobile’ does not include any vehicle designed for combat-related missions, law enforcement work, or emergency rescue work.

“(2) The term ‘executive agency’ has the meaning given that term in section 105 of title 5.

“(3) The term ‘new automobile’, with respect to the fleet of automobiles of an executive agency, means an automobile that is leased for at least 60 consecutive days or bought, by or for the agency, after September 30, 1999.”.

SEC. 205. HYBRID VEHICLES AND ALTERNATIVE VEHICLES.

(a) **IN GENERAL.**—Section 303(b)(1) of the Energy Policy Act of 1992 is amended by adding the following at the end: “Of the total number of vehicles acquired by a Federal fleet in fiscal years 2004 and 2005, at least 5 percent of the vehicles in addition to those covered by the preceding sentence shall be alternative fueled vehicles or hybrid vehicles and in fiscal year 2006 and thereafter at least 10 percent of the vehicles in addition to those covered by the preceding sentence shall be alternative fueled vehicles or hybrid vehicles.”.

(b) **DEFINITION.**—Section 301 of such Act is amended by striking “and” at the end of paragraph (13), by striking the period at the end of paragraph (14) and inserting “; and” and by adding at the end the following:

“(15) The term ‘hybrid vehicle’ means a motor vehicle which draws propulsion energy from onboard sources of stored energy which are both—

“(A) an internal combustion or heat engine using combustible fuel; and

“(B) a rechargeable energy storage system.”.

SEC. 206. FEDERAL FLEET PETROLEUM-BASED NONALTERNATIVE FUELS.

(a) **IN GENERAL.**—Title III of the Energy Policy Act of 1992 (42 U.S.C. 13212 et seq.) is amended as follows:

(1) By adding at the end thereof the following:

“SEC. 313. CONSERVATION OF PETROLEUM-BASED FUELS BY THE FEDERAL GOVERNMENT FOR LIGHT-DUTY MOTOR VEHICLES.

“(a) **PURPOSES.**—The purposes of this section are to complement and supplement the requirements of section 303 of this Act that Federal fleets, as that term is defined in section 303(b)(3), acquire in the aggregate a minimum percentage of alternative fuel vehicles, to encourage the manufacture and sale or lease of such vehicles nationwide, and to achieve, in the aggregate, a reduction in the amount of the petroleum-based fuels (other than the alternative fuels defined in this title) used by new light-duty motor vehicles acquired by the Federal Government in model years 2004 through 2010 and thereafter.

“(b) **IMPLEMENTATION.**—In furtherance of such purposes, such Federal fleets in the aggregate shall reduce the purchase of petroleum-based nonalternative fuels for such

fleets beginning October 1, 2003, through September 30, 2009, from the amount purchased for such fleets over a comparable period since enactment of this Act, as determined by the Secretary, through the annual purchase, in accordance with section 304, and the use of alternative fuels for the light-duty motor vehicles of such Federal fleets, so as to achieve levels which reflect total reliance by such fleets on the consumptive use of alternative fuels consistent with the provisions of section 303(b) of this Act. The Secretary shall, within 120 days after the enactment of this section, promulgate, in consultation with the Administrator of the General Services Administration and the Director of the Office of Management and Budget and such other heads of entities referenced in section 303 within the executive branch as such Director may designate, standards for the full and prompt implementation of this section by such entities. The Secretary shall monitor compliance with this section and such standards by all such fleets and shall report annually to the Congress, based on reports by the heads of such fleets, on the extent to which the requirements of this section and such standards are being achieved. The report shall include information on annual reductions achieved of petroleum-based fuels and the problems, if any, encountered in acquiring alternative fuels and in requiring their use."

(2) By amending section 304(b) of such Act to read as follows:

"(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary or, as appropriate, the head of each Federal fleet subject to the provisions of this section and section 313 of this Act, such sums as may be necessary to achieve the purposes of section 313(a) and the provisions of this section. Such sums shall remain available until expended."

(b) CLERICAL AMENDMENT.—The table of contents in section 1(b) of such Act is amended by adding at the end of the items relating to title III the following:

"Sec. 313. Conservation of petroleum-based fuels by the Federal Government for light-duty motor vehicles."

SEC. 207. STUDY OF FEASIBILITY AND EFFECTS OF REDUCING USE OF FUEL FOR AUTOMOBILES.

(a) IN GENERAL.—Not later than 30 days after the date of the enactment of this Act, the Secretary of Transportation shall enter into an arrangement with the National Academy of Sciences under which the Academy shall study the feasibility and effects of reducing by model year 2010, by a significant percentage, the use of fuel for automobiles.

(b) SUBJECTS OF STUDY.—The study under this section shall include—

(1) examination of, and recommendation of alternatives to, the policy under current Federal law of establishing average fuel economy standards for automobiles and requiring each automobile manufacturer to comply with average fuel economy standards that apply to the automobiles it manufactures;

(2) examination of how automobile manufacturers could contribute toward achieving the reduction referred to in subsection (a);

(3) examination of the potential of fuel cell technology in motor vehicles in order to determine the extent to which such technology may contribute to achieving the reduction referred to in subsection (a); and

(4) examination of the effects of the reduction referred to in subsection (a) on—

(A) gasoline supplies;

(B) the automobile industry, including sales of automobiles manufactured in the United States;

(C) motor vehicle safety; and

(D) air quality.

(c) REPORT.—The Secretary shall require the National Academy of Sciences to submit to the Secretary and the Congress a report on the findings, conclusion, and recommendations of the study under this section by not later than 1 year after the date of the enactment of this Act.

TITLE III—NUCLEAR ENERGY

SEC. 301. LICENSE PERIOD.

Section 103 c. of the Atomic Energy Act of 1954 (42 U.S.C. 2133(c)) is amended—

(1) by striking "c. Each such" and inserting the following:

"c. LICENSE PERIOD.—

"(1) IN GENERAL.—Each such"; and

"(2) by adding at the end the following:

"(2) COMBINED LICENSES.—In the case of a combined construction and operating license issued under section 185 b., the initial duration of the license may not exceed 40 years from the date on which the Commission finds, before operation of the facility, that the acceptance criteria required by section 185 b. are met."

SEC. 302. COST RECOVERY FROM GOVERNMENT AGENCIES.

Section 161 w. of the Atomic Energy Act of 1954 (42 U.S.C. 2201(w)) is amended—

(1) by striking "for or is issued" and all that follows through "1702" and inserting "to the Commission for, or is issued by the Commission, a license or certificate";

(2) by striking "483a" and inserting "9701"; and

(3) by striking ", of applicants for, or holders of, such licenses or certificates".

SEC. 303. DEPLETED URANIUM HEXAFLUORIDE.

Section 1(b) of Public Law 105-204 is amended by striking "fiscal year 2002" and inserting "fiscal year 2005".

SEC. 304. NUCLEAR REGULATORY COMMISSION MEETINGS.

If a quorum of the Nuclear Regulatory Commission gathers to discuss official Commission business the discussions shall be recorded, and the Commission shall notify the public of such discussions within 15 days after they occur. The Commission shall promptly make a transcript of the recording available to the public on request, except to the extent that public disclosure is exempted or prohibited by law. This section shall not apply to a meeting, within the meaning of that term under section 552b(a)(2) of title 5, United States Code.

SEC. 305. COOPERATIVE RESEARCH AND DEVELOPMENT AND SPECIAL DEMONSTRATION PROJECTS FOR THE URANIUM MINING INDUSTRY.

(a) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary \$10,000,000 for each of fiscal years 2002, 2003, and 2004 for—

(1) cooperative, cost-shared, agreements between the Department of Energy and domestic uranium producers to identify, test, and develop improved in situ leaching mining technologies, including low-cost environmental restoration technologies that may be applied to sites after completion of in situ leaching operations; and

(2) funding for competitively selected demonstration projects with domestic uranium producers relating to—

(A) enhanced production with minimal environmental impacts;

(B) restoration of well fields; and

(C) decommissioning and decontamination activities.

(b) DOMESTIC URANIUM PRODUCER.—For purposes of this section, the term "domestic uranium producer" has the meaning given that term in section 1018(4) of the Energy Policy Act of 1992 (42 U.S.C. 2296b-7(4)), except that the term shall not include any producer that has not produced uranium from domestic reserves on or after July 30, 1998.

SEC. 306. MAINTENANCE OF A VIABLE DOMESTIC URANIUM CONVERSION INDUSTRY.

There are authorized to be appropriated to the Secretary \$800,000 for contracting with the Nation's sole remaining uranium converter for the purpose of performing research and development to improve the environmental and economic performance of United States uranium conversion operations.

SEC. 307. PADUCAH DECONTAMINATION AND DECOMMISSIONING PLAN.

The Secretary of Energy shall prepare and submit a plan to Congress within 180 days after the date of the enactment of this Act that establishes scope, cost, schedule, sequence of activities, and contracting strategy for—

(1) the decontamination and decommissioning of the Department of Energy's surplus buildings and facilities at the Paducah Gaseous Diffusion Plant that have no future anticipated reuse; and

(2) the remediation of Department of Energy Material Storage Areas at the Paducah Gaseous Diffusion Plant.

Such plan shall inventory all surplus facilities and buildings, and identify and rank health and safety risks associated with such facilities and buildings. Such plan shall inventory all Department of Energy Material Storage Areas, and identify and rank health and safety risks associated with such Department of Energy Material Storage Areas. The Department of Energy shall incorporate these risk factors in designing the sequence and schedule for the plan. Such plan shall identify funding requirements that are in addition to the expected outlays included in the Department of Energy's Environmental Management Plan for the Paducah Gaseous Diffusion Plant.

TITLE IV—HYDROELECTRIC ENERGY

SEC. 401. ALTERNATIVE CONDITIONS AND FISHWAYS.

(a) ALTERNATIVE MANDATORY CONDITIONS.—Section 4 of the Federal Power Act (16 U.S.C. 797) is amended by adding at the end the following:

"(h)(1) Whenever any person applies for a license for any project works within any reservation of the United States, and the Secretary of the department under whose supervision such reservation falls deems a condition to such license to be necessary under the first proviso of subsection (e), the license applicant or any other party to the licensing proceeding may propose an alternative condition.

"(2) Notwithstanding the first proviso of subsection (e), the Secretary of the department under whose supervision the reservation falls shall accept the proposed alternative condition referred to in paragraph (1), and the Commission shall include in the license such alternative condition, if the Secretary of the appropriate department determines, based on substantial evidence provided by the party proposing such alternative condition, that the alternative condition—

"(A) provides no less protection for the reservation than provided by the condition deemed necessary by the Secretary; and

"(B) will either—

"(i) cost less to implement, or

“(ii) result in improved operation of the project works for electricity production as compared to the condition deemed necessary by the Secretary.

“(3) Within one year after the enactment of this subsection, each Secretary concerned shall, by rule, establish a process to expeditiously resolve conflicts arising under this subsection.”.

(b) ALTERNATIVE FISHWAYS.—Section 18 of the Federal Power Act (16 U.S.C. 811) is amended by—

(1) inserting “(a)” before the first sentence; and

(2) adding at the end the following:

“(b)(1) Whenever the Commission shall require a licensee to construct, maintain, or operate a fishway prescribed by the Secretary of the Interior or the Secretary of Commerce under this section, the licensee or any other party to the proceeding may propose an alternative to such prescription to construct, maintain, or operate a fishway.

“(2) Notwithstanding subsection (a), the Secretary of the Interior or the Secretary of Commerce, as appropriate, shall accept and prescribe, and the Commission shall require, the proposed alternative referred to in paragraph (1), if the Secretary of the appropriate department determines, based on substantial evidence provided by the party proposing such alternative, that the alternative—

“(A) will be no less effective than the fishway initially prescribed by the Secretary, and

“(B) will either—

“(i) cost less to implement, or

“(ii) result in improved operation of the project works for electricity production as compared to the fishway initially prescribed by the Secretary.

“(3) Within one year after the enactment of this subsection, the Secretary of the Interior and the Secretary of Commerce shall each, by rule, establish a process to expeditiously resolve conflicts arising under this subsection.”.

SEC. 402. FERC DATA ON HYDROELECTRIC LICENSING.

(a) DATA COLLECTION PROCEDURES.—The Federal Energy Regulatory Commission shall revise its procedures regarding the collection of data in connection with the Commission's consideration of hydroelectric licenses under the Federal Power Act. Such revised data collection procedures shall be designed to provide the Commission with complete and accurate information concerning the time and costs to parties involved in the licensing process. Such data shall be available for each significant stage in the licensing process and shall be designed to identify projects with similar characteristics so that analyses can be made of the time and costs involved in licensing proceedings based upon the different characteristics of those proceedings.

(b) REPORTS.—Within 6 months after the date of enactment of this Act, the Commission shall notify the Committee on Energy and Commerce of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate of the progress made by the Commission under subsection (a), and within one year after such date of enactment, the Commission shall submit a report to such Committees specifying the measures taken by the Commission pursuant to subsection (a).

TITLE V—FUELS

SEC. 601. TANK DRAINING DURING TRANSITION TO SUMMERTIME RFG.

Not later than 60 days after the enactment of the Act, the Administrator of the Envi-

ronmental Protection Agency shall commence a rulemaking to determine whether modifications to the regulations set forth in 40 C.F.R. Section 80.78 and any associated regulations regarding the transition to high ozone season reformulated gasoline are necessary to ensure that the transition to high ozone season reformulated gasoline is conducted in a manner that minimizes disruptions to the general availability and affordability of gasoline, and maximizes flexibility with regard to the draining and inventory management of gasoline storage tanks located at refineries, terminals, wholesale and retail outlets, consistent with the goals of the Clean Air Act. The Administrator shall propose and take final action in such rulemaking to ensure that any modifications are effective and implemented at least 60 days prior to the beginning of the high ozone season for the year 2002.

SEC. 602. GASOLINE BLENDSTOCK REQUIREMENTS.

Not later than 60 days after the enactment of this Act, the Administrator of the Environmental Protection Agency shall commence a rulemaking to determine whether modifications to product transfer documentation, accounting, compliance calculation, and other requirements contained in the regulations of the Administrator set forth in section 80.102 of title 40 of the Code of Federal Regulations relating to gasoline blendstocks are necessary to facilitate the movement of gasoline and gasoline feedstocks among different regions throughout the country and to improve the ability of petroleum refiners and importers to respond to regional gasoline shortages and prevent unreasonable short-term price increases. The Administrator shall take into consideration the extent to which such requirements have been, or will be, rendered unnecessary or inefficient by reason of subsequent environmental safeguards that were not in effect at the time the regulations in section 80.102 of title 40 of the Code of Federal Regulations were promulgated. The Administrator shall propose and take final action in such rulemaking to ensure that any modifications are effective and implemented at least 60 days prior to the beginning of the high ozone season for the year 2002.

SEC. 603. BOUTIQUE FUELS.

(a) JOINT STUDY.—The Administrator of the Environmental Protection Agency and the Secretary of Energy shall jointly conduct a study of all Federal, State, and local requirements regarding motor vehicle fuels, including requirements relating to reformulated gasoline, volatility (Reid Vapor Pressure), oxygenated fuel, diesel fuel and other requirements that vary from State to State, region to region, or locality to locality. The study shall analyze—

(1) the effect of the variety of such requirements on the price of motor vehicle fuels to the consumer;

(2) the availability and affordability of motor vehicle fuels in different States and localities;

(3) the effect of Federal, State, and local regulations, including multiple fuel requirements, on domestic refineries and the fuel distribution system;

(4) the effect of such requirements on local, regional, and national air quality requirements and goals;

(5) the effect of such requirements on vehicle emissions;

(6) the feasibility of developing national or regional fuel specifications for the contiguous United States that would—

(A) enhance flexibility in the fuel distribution infrastructure and improve fuel fungibility;

(B) reduce price volatility and costs to consumers and producers;

(C) meet local, regional, and national air quality requirements and goals; and

(D) provide increased gasoline market liquidity; and

(7) the extent to which the Environmental Protection Agency's Tier II requirements for conventional gasoline may achieve in future years the same or similar air quality results as State reformulated gasoline programs and State programs regarding gasoline volatility (RVP).

(b) REPORT.—By December 31, 2001, the Administrator of the Environmental Protection Agency and the Secretary of Energy shall submit a report to the Congress containing the results of the study conducted under subsection (a). Such report shall contain recommendations for legislative and administrative actions that may be taken to simplify the national distribution system for motor vehicle fuel, make such system more cost-effective, and reduce the costs and increase the availability of motor vehicle fuel to the end user while meeting the requirements of the Clean Air Act. Such recommendations shall take into account the need to provide lead time for refinery and fuel distribution system modifications necessary to assure adequate fuel supply for all States.

SEC. 604. FUNDING FOR MTBE CONTAMINATION.

Notwithstanding any other provision of law, there is authorized to be appropriated to the Administrator of the Environmental Protection Agency from the Leaking Underground Storage Trust Fund not more than \$200,000,000 to be used for taking such action, limited to assessment, corrective action, inspection of underground storage tank systems, and groundwater monitoring in connection with MTBE contamination, as the Administrator deems necessary to protect human health and the environment from releases of methyl tertiary butyl ether (MTBE) from underground storage tanks.

TITLE VI—RENEWABLE ENERGY

SEC. 701. ASSESSMENT OF RENEWABLE ENERGY RESOURCES.

(a) RESOURCE ASSESSMENT.—Not later than one year after the date of enactment of this Act, and each year thereafter, the Secretary of Energy shall publish an assessment by the National Laboratories of all renewable energy resources available within the United States.

(b) CONTENTS OF REPORT.—The report published under subsection (a) shall contain each of the following:

(1) A detailed inventory describing the available amount and characteristics of solar, wind, biomass, geothermal, hydroelectric and other renewable energy sources.

(2) Such other information as the Secretary of Energy believes would be useful in developing such renewable energy resources, including descriptions of surrounding terrain, population and load centers, nearby energy infrastructure, location of energy and water resources, and available estimates of the costs needed to develop each resource.

SEC. 702. RENEWABLE ENERGY PRODUCTION INCENTIVE.

Section 1212 of the Energy Policy Act of 1992 (42 U.S.C. 13317) is amended as follows:

(1) In subsection (a) by striking “and which satisfies” and all that follows through “Secretary shall establish.” and inserting “. The Secretary shall establish other procedures necessary for efficient administration of the

program. The Secretary shall not establish any criteria or procedures that have the effect of assigning to proposals a higher or lower priority for eligibility or allocation of appropriated funds on the basis of the energy source proposed."

(2) In subsection (b)—

(A) by striking "a State or any political" and all that follows through "nonprofit electrical cooperative" and inserting "an electricity-generating cooperative exempt from taxation under section 501(c)(12) or section 1381(a)(2)(C) of the Internal Revenue Code of 1986, a public utility described in section 115 of such Code, a State, Commonwealth, territory, or possession of the United States or the District of Columbia, or a political subdivision thereof, or an Indian tribal government or subdivision thereof,"; and

(B) by inserting "landfill gas," after "wind, biomass,".

(3) In subsection (c) by striking "during the 10-fiscal year period beginning with the first full fiscal year occurring after the enactment of this section" and inserting "before October 1, 2013".

(4) In subsection (d) by inserting "or in which the Secretary finds that all necessary Federal and State authorizations have been obtained to begin construction of the facility" after "eligible for such payments".

(5) In subsection (e)(1) by inserting "landfill gas," after "wind, biomass,".

(6) In subsection (f) by striking "the expiration of" and all that follows through "of this section" and inserting "September 30, 2023".

(7) In subsection (g)—

(A) by striking "1993, 1994, and 1995" and inserting "2003 through 2023"; and

(B) by inserting "Funds may be appropriated pursuant to this subsection to remain available until expended." after "purposes of this section,".

TITLE VII—PIPELINES

SEC. 801. PROHIBITION ON CERTAIN PIPELINE ROUTE.

No license, permit, lease, right-of-way, authorization or other approval required under Federal law for the construction of any pipeline to transport natural gas from lands within the Prudhoe Bay oil and gas lease area may be granted for any pipeline that follows a route that traverses—

(1) the submerged lands (as defined by the Submerged Lands Act) beneath, or the adjacent shoreline of, the Beaufort Sea; and

(2) enters Canada at any point north of 68 degrees North latitude.

SEC. 802. HISTORIC PIPELINES.

Section 7 of the Natural Gas Act (15 U.S.C. 717f) is amended by adding at the end the following new subsection:

"(i) Notwithstanding the National Historic Preservation Act, a transportation facility shall not be eligible for inclusion on the National Register of Historic Places until the Commission has permitted the abandonment of the transportation facility pursuant to subsection (b) of this section."

TITLE VII—MISCELLANEOUS PROVISIONS

SEC. 901. WASTE REDUCTION AND USE OF ALTERNATIVES.

(a) GRANT AUTHORITY.—The Secretary of Energy is authorized to make a single grant to a qualified institution to examine and develop the feasibility of burning post-consumer carpet in cement kilns as an alternative energy source. The purposes of the grant shall include determining—

(1) how post-consumer carpet can be burned without disrupting kiln operations;

(2) the extent to which overall kiln emissions may be reduced; and

(3) how this process provides benefits to both cement kiln operations and carpet suppliers.

(b) QUALIFIED INSTITUTION.—For the purposes of subsection (a), a qualified institution is a research-intensive institution of higher learning with demonstrated expertise in the fields of fiber recycling and logistical modeling of carpet waste collection and preparation.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary of Energy for carrying out this section \$275,000 for fiscal year 2002, to remain available until expended.

SEC. 902. ANNUAL REPORT ON UNITED STATES ENERGY INDEPENDENCE.

(a) REPORT.—The Secretary of Energy, in consultation with the heads of other relevant Federal agencies, shall include in each report under section 801(c) of the Department of Energy Organization Act a section which evaluates the progress the United States has made toward obtaining the goal of not more than 50 percent dependence on foreign oil sources by 2010.

(b) ALTERNATIVES.—The information required under this section to be included in the reports under section 801(c) of the Department of Energy Organization Act shall include a specification of what legislative or administrative actions must be implemented to meet this goal and set forth a range of options and alternatives with a cost/benefit analysis for each option or alternative together with an estimate of the contribution each option or alternative could make to reduce foreign oil imports. The Secretary shall solicit information from the public and request information from the Energy Information Agency and other agencies to develop the information required under this section. The information shall indicate, in detail, options and alternatives to—

(1) increase the use of renewable domestic energy sources, including conventional and nonconventional sources;

(2) conserve energy resources, including improving efficiencies and decreasing consumption; and

(3) increase domestic production and use of oil, natural gas, nuclear, and coal, including any actions necessary to provide access to, and transportation of, these energy resources.

SEC. 903. STUDY OF AIRCRAFT EMISSIONS.

The Secretary of Transportation and the Administrator of the Environmental Protection Agency shall jointly commence a study within 60 days after the enactment of this Act to investigate the impact of aircraft emissions on air quality in areas that are considered to be in nonattainment for the national ambient air quality standard for ozone. As part of this study, the Secretary and the Administrator shall focus on the impact of emissions by aircraft idling at airports and on the contribution of such emissions as a percentage of total emissions in the nonattainment area. Within 180 days of the commencement of the study, the Secretary and the Administrator shall submit a report to the Committees on Energy and Commerce and Transportation and Infrastructure of the United States House of Representatives and to the Committees on Environment and Public Works and Commerce, Science, and Transportation of the United States Senate containing the results of the study and recommendations with respect to a plan to maintain comprehensive data on aircraft emissions and methods by which such emissions may be reduced, without increasing individual aircraft noise, in order to

assist in the attainment of the national ambient air quality standards.

DIVISION B

SEC. 2001. SHORT TITLE.

This division may be cited as the "Comprehensive Energy Research and Technology Act of 2001".

SEC. 2002. 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. 2003. PURPOSES.

The purposes of this division 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 systems 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. 2004. GOALS.

(a) IN GENERAL.—Subject to subsection (b), in order to achieve the purposes of this division under section 2003, the Secretary should conduct a balanced energy research, development, demonstration, and commercial application portfolio of programs guided by the following goals to meet the purposes of this division under section 2003.

(1) ENERGY CONSERVATION AND ENERGY EFFICIENCY.—

(A) For the Building Technology, State and Community Sector, the program should develop technologies, housing components, designs, and production methods that will, by 2010—

(i) reduce the monthly energy cost of new housing by 20 percent, compared to the cost as of the date of the enactment of this Act;

(ii) cut the environmental impact and energy use of new housing by 50 percent, compared to the impact and use as of the date of the enactment of this Act; and

(iii) improve durability and reduce maintenance costs by 50 percent compared to the durability and costs as of the date of the enactment of this Act.

(B) For the Industry Sector, the program should, in cooperation with the affected industries, improve the energy intensity of the major energy-consuming industries by at least 25 percent by 2010, compared to the energy intensity as of the date of the enactment of this Act.

(C) For Power Technologies, the program should, in cooperation with the affected industries—

(i) develop a microturbine (40 to 300 kilowatt) that is more than 40 percent more efficient by 2006, and more than 50 percent more efficient by 2010, compared to the efficiency as of the date of the enactment of this Act; and

(ii) develop advanced materials for combustion systems that reduce emissions of nitrogen oxides by 30 to 50 percent while increasing efficiency 5 to 10 percent by 2007, compared to such emissions as of the date of the enactment of this Act.

(D) For the Transportation Sector, the program should, in cooperation with affected industries—

(i) develop a production prototype passenger automobile that has fuel economy equivalent to 80 miles per gallon of gasoline by 2004;

(ii) develop class 7 and 8 heavy duty trucks and buses with ultra low emissions and the ability to use an alternative fuel that has an average fuel economy equivalent to—

(I) 10 miles per gallon of gasoline by 2007; and

(II) 13 miles per gallon of gasoline by 2010;

(iii) develop a production prototype of a passenger automobile with zero equivalent emissions that has an average fuel economy of 100 miles per gallon of gasoline by 2010; and

(iv) improve, by 2010, the average fuel economy of trucks—

(I) in classes 1 and 2 by 300 percent; and

(II) in classes 3 through 6 by 200 percent, compared to the fuel economy as of the date of the enactment of this Act.

(2) RENEWABLE ENERGY.—

(A) For Hydrogen Research, to carry out the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990, as amended by subtitle A of title II of this division.

(B) For bioenergy:

(i) The program should reduce the cost of bioenergy relative to other energy sources to enable the United States to triple bioenergy use by 2010.

(ii) For biopower systems, the program should reduce the cost of such systems to enable commercialization of integrated power-generating technologies that employ gas turbines and fuel cells integrated with bioenergy gasifiers within five years after the date of the enactment of this Act.

(iii) For biofuels, the program should accelerate research, development, and demonstration on advanced enzymatic hydrolysis technology for making ethanol from cellulosic feedstock, with the goal that between 2010 and 2015 ethanol produced from energy crops would be fully competitive in terms of price with gasoline as a neat fuel, in either internal combustion engines or fuel cell vehicles.

(C) For Geothermal Technology Development, the program should focus on advanced concepts for the long term. The first priority should be high-grade enhanced geothermal systems; the second priority should be lower grade, hot dry rock, and geopressed systems; and the third priority should be support of field demonstrations of enhanced geothermal systems technology, including sites in lower grade areas to demonstrate the benefits of reservoir concepts to different conditions.

(D) For Hydropower, the program should provide a new generation of turbine technologies that will increase generating capacity and will be less damaging to fish and aquatic ecosystems.

(E) For Concentrating Solar Power, the program should strengthen ongoing research, development, and demonstration combining high-efficiency and high-temperature receivers with advanced thermal storage and power cycles, with the goal of making solar-only power (including baseload solar power) widely competitive with fossil fuel power by 2015. The program should limit or halt its research and development on power-tower and power-trough technologies because further refinements to these concepts will not further their deployment, and should assess the market prospects for solar dish/engine technologies to determine whether continued research and development is warranted.

(F) For Photovoltaic Energy Systems, the program should pursue research, development, and demonstration that will, by 2005, increase the efficiency of thin film modules from the current 7 percent to 11 percent in multi-million watt production; reduce the direct manufacturing cost of photovoltaic modules by 30 percent from the current \$2.50 per watt to \$1.75 per watt by 2005; and establish greater than a 20-year lifetime of photovoltaic systems by improving the reliability and lifetime of balance-of-system components and reducing recurring cost by 40 percent. The program's top priority should be the development of sound manufacturing technologies for thin-film modules, and the program should make a concerted effort to integrate fundamental research and basic engineering research.

(G) For Solar Building Technology Research, the program should complete research and development on new polymers and manufacturing processes to reduce the cost of solar water heating by 50 percent by 2004, compared to the cost as of the date of enactment of this Act.

(H) For Wind Energy Systems, the program should reduce the cost of wind energy to three cents per kilowatt-hour at Class 6 (15 miles-per-hour annual average) wind sites by 2004, and 4 cents per kilowatt-hour in Class 4 (13 miles-per-hour annual average) wind sites by 2015, and further if required so that wind power can be widely competitive with fossil-fuel-based electricity in a restructured electric industry. Program research on advanced wind turbine technology should focus on turbulent flow studies, durable materials to extend turbine life, blade efficiency, and higher efficiency operation in low quality wind regimes.

(I) For Electric Energy Systems and Storage, including High Temperature Superconducting Research and Development, Energy Storage Systems, and Transmission Reliability, the program should develop high capacity superconducting transmission lines and generators, highly reliable energy storage systems, and distributed generating systems to accommodate multiple types of energy sources under common interconnect standards.

(J) For the International Renewable Energy and Renewable Energy Production Incentive programs, and Renewable Program Support, the program should encourage the commercial application of renewable energy technologies by developed and developing countries, State and local governmental entities and nonprofit electric cooperatives, and by the competitive domestic market.

(3) NUCLEAR ENERGY.—

(A) For university nuclear science and engineering, the program should carry out the provisions of subtitle A of title III of this division.

(B) For fuel cycle research, development, and demonstration, the program should carry out the provisions of subtitle B of title III of this division.

(C) For the Nuclear Energy Research Initiative, the program should accomplish the objectives of section 2341(b) of this Act.

(D) For the Nuclear Energy Plant Optimization Program, the program should accomplish the objectives of section 2342(b) of this Act.

(E) For Nuclear Energy Technologies, the program should carry out the provisions of section 2343 of this Act.

(F) For Advanced Radioisotope Power Systems, the program should ensure that the United States has adequate capability to power future satellite and space missions.

(4) FOSSIL ENERGY.—

(A) For core fossil energy research and development, the program should achieve the goals outlined by the Department's Vision 21 Program. This research should address fuel-flexible gasification and turbines, fuel cells, advanced-combustion systems, advanced fuels and chemicals, advanced modeling and systems analysis, materials and heat exchangers, environmental control technologies, gas-stream purification, gas-separation technology, and sequestration research and development focused on cost-effective novel concepts for capturing, reusing or storing, or otherwise mitigating carbon and other greenhouse gas emissions.

(B) For offshore oil and natural gas resources, the program should investigate and develop technologies to—

(i) extract methane hydrates in coastal waters of the United States, in accordance with the provisions of the Methane Hydrate Research and Development Act of 2000; and

(ii) develop natural gas and oil reserves in the ultra-deepwater of the Central and Western Gulf of Mexico. Research and development on ultra-deepwater resource recovery shall focus on improving the safety and efficiency of such recovery and of sub-sea production technology used for such recovery, while lowering costs.

(C) For transportation fuels, the program should support a comprehensive transportation fuels strategy to increase the price elasticity of oil supply and demand by focusing research on reducing the cost of producing transportation fuels from natural gas and indirect liquefaction of coal.

(5) SCIENCE.—The Secretary, through the Office of Science, should—

(A) develop and maintain a robust portfolio of fundamental scientific and energy research, including High Energy and Nuclear Physics, Biological and Environmental Research, Basic Energy Sciences (including Materials Sciences, Chemical Sciences, Engineering and Geosciences, and Energy Biosciences), Advanced Scientific Computing, Energy Research and Analysis, Multiprogram Energy Laboratories-Facilities Support, Fusion Energy Sciences, and Facilities and Infrastructure;

(B) maintain, upgrade, and expand, as appropriate, and in accordance with the provisions of this division, the scientific user facilities maintained by the Office of Science, and ensure that they are an integral part of the Department's mission for exploring the frontiers of fundamental energy sciences; and

(C) ensure that its fundamental energy sciences programs, where appropriate, help inform the applied research and development programs of the Department.

(b) REVIEW AND ASSESSMENT.—The Secretary shall perform an assessment that establishes measurable cost and performance-based goals, or that modifies the goals under subsection (a), as appropriate, for 2005, 2010, 2015, and 2020 for each of the programs authorized by this division that would enable each such program to meet the purposes of this division under section 2003. 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.

(c) CONSULTATION.—In establishing the measurable cost and performance-based goals under subsection (b), 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.

(d) SCHEDULE.—The Secretary shall—

(1) issue and publish in the Federal Register a set of draft measurable cost and performance-based goals for the programs authorized by this division for public comment—

(A) in the case of a program established before the date of the enactment of this Act, not later than 120 days after the date of the enactment of this Act; and

(B) in the case of a program not established before the date of the enactment of this Act, not later than 120 days after the date of establishment of the program;

(2) not later than 60 days after the date of publication under paragraph (1), after taking

into consideration any public comments received, transmit to the Congress and publish in the Federal Register the final measurable cost and performance-based goals; and

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

SEC. 2005. DEFINITIONS.

For purposes of this division, 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. 2006. AUTHORIZATIONS.

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

SEC. 2007. BALANCE OF FUNDING PRIORITIES.

(a) SENSE OF CONGRESS.—It is the sense of the Congress that the funding of the various programs authorized by titles I through IV of this division should remain in the same proportion to each other as provided in this division, regardless of the total amount of funding made available for those programs.

(b) REPORT TO CONGRESS.—If for fiscal year 2002, 2003, or 2004 the amounts appropriated in general appropriations Acts for the programs authorized in titles I through IV of this division are not in the same proportion to one another as are the authorizations for such programs in this division, the Secretary and the Administrator shall, within 60 days after the date of the enactment of the last general appropriations Act appropriating amounts for such programs, transmit to the appropriate congressional committees a report describing the programs, projects, and activities that would have been funded if the proportions provided for in this division had been maintained in the appropriations. The amount appropriated for the program receiving the highest percentage of its authorized funding for a fiscal year shall be used as the baseline for calculating the proportional deficiencies of appropriations for other programs in that fiscal year.

TITLE I—ENERGY CONSERVATION AND ENERGY EFFICIENCY

Subtitle A—Alternative Fuel Vehicles

SEC. 2101. SHORT TITLE.

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

SEC. 2102. 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;

(vi) by methanol or ethanol at no less than 85 percent by volume; or

(vii) by propane.

(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 2103.

(3) ULTRA-LOW SULFUR DIESEL VEHICLE.—The term “ultra-low sulfur diesel vehicle” means a vehicle powered by a heavy-duty diesel engine that—

(A) is fueled by diesel fuel which contains sulfur at not more than 15 parts per million; and

(B) emits not more than the lesser of—

(i) for vehicles manufactured in—

(I) model years 2001 through 2003, 3.0 grams per brake horsepower-hour of nonmethane hydrocarbons and oxides of nitrogen and .01 grams per brake horsepower-hour of particulate matter; and

(II) model years 2004 through 2006, 2.5 grams per brake horsepower-hour of nonmethane hydrocarbons and oxides of nitrogen and .01 grams per brake horsepower-hour of particulate matter; or

(ii) the emissions of nonmethane hydrocarbons, oxides of nitrogen, and particulate matter of the best performing technology of ultra-low sulfur diesel vehicles of the same type that are commercially available.

SEC. 2103. PILOT PROGRAM.

(a) ESTABLISHMENT.—The Secretary shall establish a 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) The acquisition of ultra-low sulfur diesel vehicles.

(3) Infrastructure necessary to directly support an alternative fuel vehicle project funded by the grant, including fueling and other support equipment.

(4) 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 or ultra-low sulfur diesel 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, including acquisition, construction, operation, and maintenance costs over the expected life of the project;

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

(H) documentation to the satisfaction of the Secretary that diesel fuel containing sulfur at not more than 15 parts per million is available for carrying out the projects, and a commitment by the applicant to use such fuel in carrying out the projects.

(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 with similar projects 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 3 months 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 6 months of the publication of the notice.

(2) **SELECTION.**—Not later than 6 months 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.

(g) **LIMIT ON FUNDING.**—The Secretary shall provide not less than 20 percent and not more than 25 percent of the grant funding made available under this section for the acquisition of ultra-low sulfur diesel vehicles.

SEC. 2104. REPORTS TO CONGRESS.

(a) **INITIAL REPORT.**—Not later than 2 months after the date grants are awarded under this subtitle, the Secretary shall transmit to the appropriate congressional committees 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 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.

(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 appropriate congressional committees 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 and ultra-low sulfur diesel vehicles.

SEC. 2105. 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 Power Hybrid Energy Systems

SEC. 2121. FINDINGS.

The Congress makes the following findings:

(1) Our ability to take advantage of our renewable, indigenous resources in a cost-effective manner can be greatly advanced through systems that compensate for the intermittent nature of these resources through distributed power hybrid systems.

(2) Distributed power hybrid systems can—

(A) shelter consumers from temporary energy price volatility created by supply and demand mismatches;

(B) increase the reliability of energy supply; and

(C) address significant local differences in power and economic development needs and resource availability that exist throughout the United States.

(3) Realizing these benefits will require a concerted and integrated effort to remove market barriers to adopting distributed power hybrid systems by—

(A) developing the technological foundation that enables designing, testing, certifying, and operating distributed power hybrid systems; and

(B) providing the policy framework that reduces such barriers.

(4) While many of the individual distributed power hybrid systems components are either available or under development in existing private and public sector programs, the capabilities to integrate these components into workable distributed power hybrid systems that maximize benefits to consumers in a safe manner often are not coherently being addressed.

SEC. 2122. DEFINITIONS.

For purposes of this subtitle—

(1) the term “distributed power hybrid system” means a system using 2 or more distributed power sources, operated together with associated supporting equipment, including storage equipment, and software necessary to provide electric power onsite and to an electric distribution system; and

(2) the term “distributed power source” means an independent electric energy source of usually 10 megawatts or less located close to a residential, commercial, or industrial load center, including—

(A) reciprocating engines;

(B) turbines;

(C) microturbines;

(D) fuel cells;

(E) solar electric systems;

(F) wind energy systems;

(G) biopower systems;

(H) geothermal power systems; or

(I) combined heat and power systems.

SEC. 2123. STRATEGY.

(a) **REQUIREMENT.**—Not later than 1 year after the date of the enactment of this Act, the Secretary shall develop and transmit to the Congress a distributed power hybrid systems strategy showing—

(1) needs best met with distributed power hybrid systems configurations, especially systems including one or more solar or renewable power sources; and

(2) technology gaps and barriers (including barriers to efficient connection with the power grid) that hamper the use of distributed power hybrid systems.

(b) **ELEMENTS.**—The strategy shall provide for development of—

(1) system integration tools (including databases, computer models, software, sensors, and controls) needed to plan, design, build, and operate distributed power hybrid systems for maximum benefits;

(2) tests of distributed power hybrid systems, power parks, and microgrids, including field tests and cost-shared demonstrations with industry;

(3) design tools to characterize the benefits of distributed power hybrid systems for consumers, to reduce testing needs, to speed commercialization, and to generate data characterizing grid operations, including interconnection requirements;

(4) precise resource assessment tools to map local resources for distributed power hybrid systems; and

(5) a comprehensive research, development, demonstration, and commercial application program to ensure the reliability, efficiency, and environmental integrity of distributed energy resources, focused on filling gaps in distributed power hybrid systems technologies identified under subsection (a)(2), which may include—

(A) integration of a wide variety of advanced technologies into distributed power hybrid systems;

(B) energy storage devices;

(C) environmental control technologies;

(D) interconnection standards, protocols, and equipment; and

(E) ancillary equipment for dispatch and control.

(c) **IMPLEMENTATION AND INTEGRATION.**—The Secretary shall implement the strategy

transmitted under subsection (a) and the research program under subsection (b)(5). Activities pursuant to the strategy shall be integrated with other activities of the Department's Office of Power Technologies.

SEC. 2124. HIGH POWER DENSITY INDUSTRY PROGRAM.

(a) **IN GENERAL.**—The Secretary shall develop and implement a comprehensive research, development, demonstration, and commercial application program to improve energy efficiency, reliability, and environmental responsibility in high power density industries, such as data centers, server farms, telecommunications facilities, and heavy industry.

(b) **AREAS.**—In carrying out this section, the Secretary shall consider technologies that provide—

(1) significant improvement in efficiency of high power density facilities, and in data and telecommunications centers, using advanced thermal control technologies;

(2) significant improvements in air-conditioning efficiency in facilities such as data centers and telecommunications facilities;

(3) significant advances in peak load reduction; and

(4) advanced real time metering and load management and control devices.

(c) **IMPLEMENTATION AND INTEGRATION.**—Activities pursuant to this program shall be integrated with other activities of the Department's Office of Power Technologies.

SEC. 2125. MICRO-COGENERATION ENERGY TECHNOLOGY.

The Secretary shall make competitive, merit-based grants to consortia of private sector entities for the development of micro-cogeneration energy technology. The consortia shall explore the creation of small-scale combined heat and power through the use of residential heating appliances. There are authorized to be appropriated to the Secretary \$20,000,000 to carry out this section, to remain available until expended.

SEC. 2126. PROGRAM PLAN.

Within 4 months after the date of enactment of this Act, the Secretary, in consultation with other appropriate Federal agencies, shall prepare and transmit to the 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 distributed energy resources, power transmission, and high power density industries to prioritize appropriate program areas. The Secretary shall 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 the Secretary considers appropriate.

SEC. 2127. REPORT.

Two years after date of 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.

SEC. 2128. VOLUNTARY CONSENSUS STANDARDS.

Not later than 2 years after the date of enactment of this Act, the Secretary, in consultation with the National Institute of Standards and Technology, shall work with the Institute of Electrical and Electronic Engineers and other standards development organizations toward the development of voluntary consensus standards for distributed energy systems for use in manufacturing and using equipment and systems for connection

with electric distribution systems, for obtaining electricity from, or providing electricity to, such systems.

Subtitle C—Secondary Electric Vehicle Battery Use

SEC. 2131. DEFINITIONS.

For purposes of this subtitle, the term—

(1) “battery” means an energy storage device that previously has been used to provide motive power in a vehicle powered in whole or in part by electricity; and

(2) “associated equipment” means equipment located at the location where the batteries will be used that is necessary to enable the use of the energy stored in the batteries.

SEC. 2132. ESTABLISHMENT OF SECONDARY ELECTRIC VEHICLE BATTERY USE PROGRAM.

(a) **PROGRAM.**—The Secretary shall establish and conduct a research, development, and demonstration program for the secondary use of batteries where the original use of such batteries was in transportation applications. Such program shall be—

(1) designed to demonstrate the use of batteries in secondary application, including utility and commercial power storage and power quality;

(2) structured to evaluate the performance, including longevity of useful service life and costs, of such batteries in field operations, and evaluate the necessary supporting infrastructure, including disposal and reuse of batteries; and

(3) coordinated with ongoing secondary battery use programs underway at the national laboratories and in industry.

(b) **SOLICITATION.**—(1) Not later than 6 months after the date of the enactment of this Act, the Secretary shall solicit proposals to demonstrate the secondary use of batteries and associated equipment and supporting infrastructure in geographic locations throughout the United States. The Secretary may make additional solicitations for proposals if the Secretary determines that such solicitations are necessary to carry out this section.

(2)(A) Proposals submitted in response to a solicitation under this section shall include—

(i) a description of the project, including the batteries to be used in the project, the proposed locations and applications for the batteries, the number of batteries to be demonstrated, and the type, characteristics, and estimated life-cycle costs of the batteries compared to other energy storage devices currently used;

(ii) the contribution, if any, of State or local governments and other persons to the demonstration project;

(iii) the type of associated equipment to be demonstrated and the type of supporting infrastructure to be demonstrated; and

(iv) any other information the Secretary considers appropriate.

(B) If the proposal includes a lease arrangement, the proposal shall indicate the terms of such lease arrangement for the batteries and associated equipment.

(c) **SELECTION OF PROPOSALS.**—(1)(A) The Secretary shall, not later than 3 months after the closing date established by the Secretary for receipt of proposals under subsection (b), select at least 5 proposals to receive financial assistance under this section.

(B) No one project selected under this section shall receive more than 25 percent of the funds authorized under this section. No more than 3 projects selected under this section shall demonstrate the same battery type.

(2) In selecting a proposal under this section, the Secretary shall consider—

(A) the ability of the proposer to acquire the batteries and associated equipment and to successfully manage and conduct the demonstration project, including the reporting requirements set forth in paragraph (3)(B);

(B) the geographic and climatic diversity of the projects selected;

(C) the long-term technical and competitive viability of the batteries to be used in the project and of the original manufacturer of such batteries;

(D) the suitability of the batteries for their intended uses;

(E) the technical performance of the battery, including the expected additional useful life and the battery's ability to retain energy;

(F) the environmental effects of the use of and disposal of the batteries proposed to be used in the project selected;

(G) the extent of involvement of State or local government and other persons in the demonstration project and whether such involvement will—

(i) permit a reduction of the Federal cost share per project; or

(ii) otherwise be used to allow the Federal contribution to be provided to demonstrate a greater number of batteries; and

(H) such other criteria as the Secretary considers appropriate.

(3) **CONDITIONS.**—The Secretary shall require that—

(A) as a part of a demonstration project, the users of the batteries provide to the proposer information regarding the operation, maintenance, performance, and use of the batteries, and the proposer provide such information to the battery manufacturer, for 3 years after the beginning of the demonstration project;

(B) the proposer provide to the Secretary such information regarding the operation, maintenance, performance, and use of the batteries as the Secretary may request during the period of the demonstration project; and

(C) the proposer provide at least 50 percent of the costs associated with the proposal.

SEC. 2133. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary, from amounts authorized under section 2161(a), for purposes of this subtitle—

(1) \$1,000,000 for fiscal year 2002;

(2) \$7,000,000 for fiscal year 2003; and

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

Such appropriations may remain available until expended.

Subtitle D—Green School Buses

SEC. 2141. SHORT TITLE.

This subtitle may be cited as the “Clean Green School Bus Act of 2001”.

SEC. 2142. ESTABLISHMENT OF PILOT PROGRAM.

(a) **ESTABLISHMENT.**—The Secretary shall establish a pilot program for awarding grants on a competitive basis to eligible entities for the demonstration and commercial application of alternative fuel school buses and ultra-low sulfur diesel school buses.

(b) **REQUIREMENTS.**—Not later than 3 months after the date of the enactment of this Act, the Secretary shall establish and publish in the Federal register grant requirements on eligibility for assistance, and on implementation of the program established under subsection (a), including certification requirements to ensure compliance with this subtitle.

(c) **SOLICITATION.**—Not later than 6 months after the date of the enactment of this Act, the Secretary shall solicit proposals for grants under this section.

(d) **ELIGIBLE RECIPIENTS.**—A grant shall be awarded under this section only—

(1) to a local governmental entity responsible for providing school bus service for one or more public school systems; or

(2) jointly to an entity described in paragraph (1) and a contracting entity that provides school bus service to the public school system or systems.

(e) **TYPES OF GRANTS.**—

(1) **IN GENERAL.**—Grants under this section shall be for the demonstration and commercial application of technologies to facilitate the use of alternative fuel school buses and ultra-low sulfur diesel school buses in lieu of buses manufactured before model year 1977 and diesel-powered buses manufactured before model year 1991.

(2) **NO ECONOMIC BENEFIT.**—Other than the receipt of the grant, a recipient of a grant under this section may not receive any economic benefit in connection with the receipt of the grant.

(3) **PRIORITY OF GRANT APPLICATIONS.**—The Secretary shall give priority to awarding grants to applicants who can demonstrate the use of alternative fuel buses and ultra-low sulfur diesel school buses in lieu of buses manufactured before model year 1977.

(f) **CONDITIONS OF GRANT.**—A grant provided under this section shall include the following conditions:

(1) All buses acquired with funds provided under the grant shall be operated as part of the school bus fleet for which the grant was made for a minimum of 5 years.

(2) Funds provided under the grant may only be used—

(A) to pay the cost, except as provided in paragraph (3), of new alternative fuel school buses or ultra-low sulfur diesel school buses, including State taxes and contract fees; and

(B) to provide—

(i) up to 10 percent of the price of the alternative fuel buses acquired, for necessary alternative fuel infrastructure if the infrastructure will only be available to the grant recipient; and

(ii) up to 15 percent of the price of the alternative fuel buses acquired, for necessary alternative fuel infrastructure if the infrastructure will be available to the grant recipient and to other bus fleets.

(3) The grant recipient shall be required to provide at least the lesser of 15 percent of the total cost of each bus received or \$15,000 per bus.

(4) In the case of a grant recipient receiving a grant to demonstrate ultra-low sulfur diesel school buses, the grant recipient shall be required to provide documentation to the satisfaction of the Secretary that diesel fuel containing sulfur at not more than 15 parts per million is available for carrying out the purposes of the grant, and a commitment by the applicant to use such fuel in carrying out the purposes of the grant.

(g) **BUSES.**—Funding under a grant made under this section may be used to demonstrate the use only of new alternative fuel school buses or ultra-low sulfur diesel school buses—

(1) with a gross vehicle weight of greater than 14,000 pounds;

(2) that are powered by a heavy duty engine;

(3) that, in the case of alternative fuel school buses, emit not more than—

(A) for buses manufactured in model years 2001 and 2002, 2.5 grams per brake horsepower-hour of nonmethane hydrocarbons and oxides of nitrogen and .01 grams per brake horsepower-hour of particulate matter; and

(B) for buses manufactured in model years 2003 through 2006, 1.8 grams per brake horse-

power-hour of nonmethane hydrocarbons and oxides of nitrogen and .01 grams per brake horsepower-hour of particulate matter; and

(4) that, in the case of ultra-low sulfur diesel school buses, emit not more than—

(A) for buses manufactured in model years 2001 through 2003, 3.0 grams per brake horsepower-hour of nonmethane hydrocarbons and oxides of nitrogen and .01 grams per brake horsepower-hour of particulate matter; and

(B) for buses manufactured in model years 2004 through 2006, 2.5 grams per brake horsepower-hour of nonmethane hydrocarbons and oxides of nitrogen and .01 grams per brake horsepower-hour of particulate matter,

except that under no circumstances shall buses be acquired under this section that emit nonmethane hydrocarbons, oxides of nitrogen, or particulate matter at a rate greater than the best performing technology of ultra-low sulfur diesel school buses commercially available at the time the grant is made.

(h) **DEPLOYMENT AND DISTRIBUTION.**—The Secretary shall seek to the maximum extent practicable to achieve nationwide deployment of alternative fuel school buses through the program under this section, and shall ensure a broad geographic distribution of grant awards, with a goal of no State receiving more than 10 percent of the grant funding made available under this section for a fiscal year.

(i) **LIMIT ON FUNDING.**—The Secretary shall provide not less than 20 percent and not more than 25 percent of the grant funding made available under this section for any fiscal year for the acquisition of ultra-low sulfur diesel school buses.

(j) **DEFINITIONS.**—For purposes of this section—

(1) the term “alternative fuel school bus” means a bus powered substantially by electricity (including electricity supplied by a fuel cell), or by liquefied natural gas, compressed natural gas, liquefied petroleum gas, hydrogen, propane, or methanol or ethanol at no less than 85 percent by volume; and

(2) the term “ultra-low sulfur diesel school bus” means a school bus powered by diesel fuel which contains sulfur at not more than 15 parts per million.

SEC. 2143. FUEL CELL BUS DEVELOPMENT AND DEMONSTRATION PROGRAM.

(a) **ESTABLISHMENT OF PROGRAM.**—The Secretary shall establish a program for entering into cooperative agreements with private sector fuel cell bus developers for the development of fuel cell-powered school buses, and subsequently with not less than 2 units of local government using natural gas-powered school buses and such private sector fuel cell bus developers to demonstrate the use of fuel cell-powered school buses.

(b) **COST SHARING.**—The non-Federal contribution for activities funded under this section shall be not less than—

(1) 20 percent for fuel infrastructure development activities; and

(2) 50 percent for demonstration activities and for development activities not described in paragraph (1).

(c) **FUNDING.**—No more than \$25,000,000 of the amounts authorized under section 2144 may be used for carrying out this section for the period encompassing fiscal years 2002 through 2006.

(d) **REPORTS TO CONGRESS.**—Not later than 3 years after the date of the enactment of this Act, and not later than October 1, 2006, the Secretary shall transmit to the appropriate congressional committees a report that—

(1) evaluates the process of converting natural gas infrastructure to accommodate fuel cell-powered school buses; and

(2) assesses the results of the development and demonstration program under this section.

SEC. 2144. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary for carrying out this subtitle, to remain available until expended—

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

(2) \$50,000,000 for fiscal year 2003;

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

(4) \$70,000,000 for fiscal year 2005; and

(5) \$80,000,000 for fiscal year 2006.

Subtitle E—Next Generation Lighting Initiative

SEC. 2151. SHORT TITLE.

This subtitle may be cited as “Next Generation Lighting Initiative Act”.

SEC. 2152. DEFINITION.

In this subtitle, the term “Lighting Initiative” means the “Next Generation Lighting Initiative” established under section 2153(a).

SEC. 2153. NEXT GENERATION LIGHTING INITIATIVE.

(a) **ESTABLISHMENT.**—The Secretary is authorized to establish a lighting initiative to be known as the “Next Generation Lighting Initiative” to research, develop, and conduct demonstration activities on advanced lighting technologies, including white light emitting diodes.

(b) **RESEARCH OBJECTIVES.**—The research objectives of the Lighting Initiative shall be to develop, by 2011, advanced lighting technologies that, compared to incandescent and fluorescent lighting technologies as of the date of the enactment of this Act, are—

(1) longer lasting;

(2) more energy-efficient; and

(3) cost-competitive.

SEC. 2154. STUDY.

(a) **IN GENERAL.**—Not later than 6 months after the date of enactment of this Act, the Secretary, in consultation with other Federal agencies, as appropriate, shall complete a study on strategies for the development and commercial application of advanced lighting technologies. The Secretary shall request a review by the National Academies of Sciences and Engineering of the study under this subsection, and shall transmit the results of the study to the appropriate congressional committees.

(b) **REQUIREMENTS.**—The study shall—

(1) develop a comprehensive strategy to implement the Lighting Initiative; and

(2) identify the research and development, manufacturing, deployment, and marketing barriers that must be overcome to achieve a goal of a 25 percent market penetration by advanced lighting technologies into the incandescent and fluorescent lighting market by the year 2012.

(c) **IMPLEMENTATION.**—As soon as practicable after the review of the study under subsection (a) is transmitted to the Secretary by the National Academies of Sciences and Engineering, the Secretary shall adapt the implementation of the Lighting Initiative taking into consideration the recommendations of the National Academies of Sciences and Engineering.

SEC. 2155. GRANT PROGRAM.

(a) **IN GENERAL.**—Subject to section 2603 of this Act, the Secretary may make merit-based competitive grants to firms and research organizations that conduct research, development, and demonstration projects related to advanced lighting technologies.

(b) **ANNUAL REVIEW.**—

(1) **IN GENERAL.**—An annual independent review of the grant-related activities of firms and research organizations receiving a grant under this section shall be conducted by a

committee appointed by the Secretary under the Federal Advisory Committee Act (5 U.S.C. App.), or, at the request of the Secretary, a committee appointed by the National Academies of Sciences and Engineering.

(2) REQUIREMENTS.—Using clearly defined standards established by the Secretary, the review shall assess technology advances and progress toward commercialization of the grant-related activities of firms or research organizations during each fiscal year of the grant program.

(c) TECHNICAL AND FINANCIAL ASSISTANCE.—The national laboratories and other Federal agencies, as appropriate, shall cooperate with and provide technical and financial assistance to firms and research organizations conducting research, development, and demonstration projects carried out under this subtitle.

Subtitle F—Department of Energy Authorization of Appropriations

SEC. 2161. AUTHORIZATION OF APPROPRIATIONS.

(a) OPERATION AND MAINTENANCE.—In addition to amounts authorized to be appropriated under section 2105, section 2125, and section 2144, there are authorized to be appropriated to the Secretary for subtitle B, subtitle C, subtitle E, and for Energy Conservation operation and maintenance (including Building Technology, State and Community Sector (Nongrants), Industry Sector, Transportation Sector, Power Technologies, and Policy and Management) \$625,000,000 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 G—Environmental Protection Agency Office of Air and Radiation Authorization of Appropriations

SEC. 2171. SHORT TITLE.

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

SEC. 2172. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Administrator for Office of Air and Radiation Climate Change Protection Programs \$121,942,000 for fiscal year 2002, \$126,800,000 for fiscal year 2003, and \$131,800,000 for fiscal year 2004 to remain available until expended, of which—

- (1) \$52,731,000 for fiscal year 2002, \$54,800,000 for fiscal year 2003, and \$57,000,000 for fiscal year 2004 shall be for Buildings;
- (2) \$32,441,000 for fiscal year 2002, \$33,700,000 for fiscal year 2003, and \$35,000,000 for fiscal year 2004 shall be for Transportation;
- (3) \$27,295,000 for fiscal year 2002, \$28,400,000 for fiscal year 2003, and \$29,500,000 for fiscal year 2004 shall be for Industry;
- (4) \$1,700,000 for fiscal year 2002, \$1,800,000 for fiscal year 2003, and \$1,900,000 for fiscal year 2004 shall be for Carbon Removal;
- (5) \$2,500,000 for fiscal year 2002, \$2,600,000 for fiscal year 2003, and \$2,700,000 for fiscal year 2004 shall be for State and Local Climate; and
- (6) \$5,275,000 for fiscal year 2002, \$5,500,000 for fiscal year 2003, and \$5,700,000 for fiscal

year 2004 shall be for International Capacity Building.

SEC. 2173. LIMITS ON USE OF FUNDS.

(a) 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.

(b) 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 if the program has not been authorized by Congress.

SEC. 2174. COST SHARING.

(a) RESEARCH AND DEVELOPMENT.—Except as otherwise provided in this subtitle, for research and development programs carried out under this subtitle, the Administrator shall require a commitment from non-Federal sources of at least 20 percent of the cost of the project. The Administrator may reduce or eliminate the non-Federal requirement under this subsection if the Administrator determines that the research and development is of a basic or fundamental nature.

(b) DEMONSTRATION AND COMMERCIAL APPLICATION.—Except as otherwise provided in this subtitle, the Administrator shall require at least 50 percent of the costs directly and specifically related to any demonstration or commercial application project under this subtitle to be provided from non-Federal sources. The Administrator may reduce the non-Federal requirement under this subsection if the Administrator determines that the reduction is necessary and appropriate considering the technological risks involved in the project and is necessary to meet the objectives of this subtitle.

(c) CALCULATION OF AMOUNT.—In calculating the amount of the non-Federal commitment under subsection (a) or (b), the Administrator may include personnel, services, equipment, and other resources.

SEC. 2175. 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. 2176. 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. 2177. 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. 2178. 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.

Subtitle H—National Building Performance Initiative

SEC. 2181. NATIONAL BUILDING PERFORMANCE INITIATIVE.

(a) INTERAGENCY GROUP.—Not later than 3 months after the date of the enactment of this Act, the Director of the Office of Science and Technology Policy shall establish an Interagency Group responsible for the development and implementation of a National Building Performance Initiative to address energy conservation and research and development and related issues. The National Institute of Standards and Technology shall provide necessary administrative support for the Interagency Group.

(b) PLAN.—Not later than 9 months after the date of the enactment of this Act, the

Interagency Group shall transmit to the Congress a multiyear implementation plan describing the Federal role in reducing the costs, including energy costs, of using, owning, and operating commercial, institutional, residential, and industrial buildings by 30 percent by 2020. The plan shall include—

(1) research, development, and demonstration of systems and materials for new construction and retrofit, on the building envelope and components; and

(2) the collection and dissemination in a usable form of research results and other pertinent information to the design and construction industry, government officials, and the general public.

(c) NATIONAL BUILDING PERFORMANCE ADVISORY COMMITTEE.—A National Building Performance Advisory Committee shall be established to advise on creation of the plan, review progress made under the plan, advise on any improvements that should be made to the plan, and report to the Congress on actions that have been taken to advance the Nation's capability in furtherance of the plan. The members shall include representatives of a broad cross-section of interests such as the research, technology transfer, architectural, engineering, and financial communities; materials and systems suppliers; State, county, and local governments; the residential, multifamily, and commercial sectors of the construction industry; and the insurance industry.

(d) REPORT.—The Interagency Group shall, within 90 days after the end of each fiscal year, transmit a report to the Congress describing progress achieved during the preceding fiscal year by government at all levels and by the private sector, toward implementing the plan developed under subsection (b), and including any amendments to the plan.

TITLE II—RENEWABLE ENERGY

Subtitle A—Hydrogen

SEC. 2201. SHORT TITLE.

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

SEC. 2202. 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. 2203. 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. 2204. 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. 2205. 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.—For research and development programs carried out under this section, the Secretary shall require a commitment from non-Federal sources of at least 20 percent of the cost of the project. The Secretary may reduce or eliminate the non-Federal requirement under this subsection if the Secretary determines that the research and development is of a basic or fundamental nature."

SEC. 2206. 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 inserting " , which shall include a fuel cell bus demonstration program to address hydrogen production, storage, and use in transit bus applications"; and

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

SEC. 2207. 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. 2208. 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”;

(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. 2209. 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 committee 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. 2210. 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. 2211. 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. 2221. SHORT TITLE.**

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

SEC. 2222. 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 forestry residues and byproducts; and
- (5) protect the environment.

SEC. 2223. DEFINITIONS.

For purposes of this subtitle—

(1) the term “bioenergy” means energy derived from any organic matter that is available on a renewable or recurring basis, including agricultural crops and trees, wood and wood wastes and residues, plants (including aquatic plants), grasses, residues, fibers, and animal and other organic wastes;

(2) the term “biofuels” includes liquid or gaseous fuels, industrial chemicals, or both;

(3) the term “biopower” includes the generation of electricity or process steam or both; and

(4) the term “integrated bioenergy research and development” includes biopower and biofuels applications.

SEC. 2224. 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.

SEC. 2225. 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 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, including the Plant Genome Program of the National Science Foundation.

(d) INTEGRATED APPLICATIONS.—Amounts authorized to be appropriated under this subtitle may be used to assist in the planning, design, and implementation of projects to convert rice straw and barley grain into biopower or biofuels.

Subtitle C—Transmission Infrastructure Systems**SEC. 2241. TRANSMISSION INFRASTRUCTURE SYSTEMS RESEARCH, DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION.**

(a) IN GENERAL.—The Secretary shall develop and implement a comprehensive research, development, demonstration, and commercial application program to ensure the reliability, efficiency, and environmental integrity of electrical transmission systems. Such program shall include advanced energy technologies and systems, high capacity superconducting transmission lines and generators, advanced grid reliability and efficiency technologies development, technologies contributing to significant load reductions, advanced metering, load management and control technologies, and technology transfer and education.

(b) TECHNOLOGY.—In carrying out this subtitle, the Secretary may include research, development, and demonstration on and commercial application of improved transmission technologies including the integration of the following technologies into improved transmission systems:

- (1) High temperature superconductivity.
- (2) Advanced transmission materials.
- (3) Self-adjusting equipment, processes, or software for survivability, security, and failure containment.
- (4) Enhancements of energy transfer over existing lines.
- (5) Any other infrastructure technologies, as appropriate.

SEC. 2242. PROGRAM PLAN.

Within 4 months 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 transmission infrastructure systems industry to select and prioritize appropriate program areas. The Secretary shall 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.

SEC. 2243. REPORT.

Two years after the date of the enactment of this Act, and at two year intervals thereafter, the Secretary, in consultation 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 transmission infrastructure technologies.

Subtitle D—Department of Energy Authorization of Appropriations**SEC. 2261. AUTHORIZATION OF APPROPRIATIONS.**

(a) OPERATION AND MAINTENANCE.—There are authorized to be appropriated to the Secretary for Renewable Energy operation and maintenance, including activities under subtitle C, Geothermal Technology Development, Hydropower, Concentrating Solar Power, Photovoltaic Energy Systems, Solar Building Technology Research, Wind Energy Systems, High Temperature 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 2210 and amounts authorized under section 2225, \$535,000,000 for fiscal year 2002, \$639,000,000 for fiscal year 2003, and \$683,000,000 for fiscal year 2004, to remain available until expended.

(b) **WAVE POWERED ELECTRIC GENERATION.**—Within the amounts authorized to be appropriated to the Secretary under subsection (a), the Secretary shall carry out a research program, in conjunction with other appropriate Federal agencies, on wave powered electric generation.

(c) **ASSESSMENT OF RENEWABLE ENERGY RESOURCES.**—

(1) **IN GENERAL.**—Using funds authorized in subsection (a), of this section, the Secretary shall transmit to the Congress, within one year after the date of the enactment of this Act, an assessment of all renewable energy resources available within the United States.

(2) **RESOURCE ASSESSMENT.**—Such report shall include a detailed inventory describing the available amount and characteristics of solar, wind, biomass, geothermal, hydroelectric, and other renewable energy sources, and an estimate of the costs needed to develop each resource. The report shall also include such other information as the Secretary believes would be useful in siting renewable energy generation, such as appropriate terrain, population and load centers, nearby energy infrastructure, and location of energy resources.

(3) **AVAILABILITY.**—The information and cost estimates in this report shall be updated annually and made available to the public, along with the data used to create the report.

(4) **SUNSET.**—This subsection shall expire at the end of fiscal year 2004.

(d) **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. 2301. SHORT TITLE.

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

SEC. 2302. 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 will 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 prolifera-

tion 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. 2303. 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;

(5) assist universities in maintaining reactor infrastructure; and

(6) 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 improvements 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 assistance awards under this subtitle shall be made only after independent merit review.

(g) **REPORT.**—Not later than 6 months after the date of the enactment of this Act, the Secretary shall prepare and transmit to the appropriate congressional committees a 5-year plan on how the programs authorized in this subtitle will be implemented. The plan shall include a review of the projected personnel needs in the fields of nuclear science and engineering and of the scope of nuclear science and engineering education programs at the Department and other Federal agencies.

SEC. 2304. 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 2303(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 2303(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 2303(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 2303(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 2303(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 2303(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 2303(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 2303(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—Advanced Fuel Recycling Technology Research and Development Program

SEC. 2321. 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. 2341. 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. 2342. 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 at 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 and 2004.

SEC. 2343. 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) \$20,000,000 for fiscal year 2002; and

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

SEC. 2344. 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 2304(a), 2321(c), 2341(c), 2342(c), and 2343(e), and including Advanced Radioisotope Power Systems, Test Reactor Landlord, and Program Direction, \$191,200,000 for fiscal year 2002, \$199,000,000 for fiscal year 2003, and \$207,000,000 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 National 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—

(1) Nuclear Energy Isotope Support and Production;

(2) Argonne National Laboratory-West Operations;

(3) Fast Flux Test Facility; or

(4) Nuclear Facilities Management.

TITLE IV—FOSSIL ENERGY

Subtitle A—Coal

SEC. 2401. COAL AND RELATED TECHNOLOGIES PROGRAMS.

(a) AUTHORIZATION OF APPROPRIATIONS.—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 research and development programs, which shall include—

- (1) Innovations for Existing Plants;
- (2) Integrated Gasification Combined Cycle;
- (3) advanced combustion systems;
- (4) Turbines;
- (5) Sequestration Research and Development;
- (6) innovative technologies for demonstration;
- (7) Transportation Fuels and Chemicals;
- (8) Solid Fuels and Feedstocks;
- (9) Advanced Fuels Research; and
- (10) Advanced Research.

(b) LIMIT ON USE OF FUNDS.—Notwithstanding subsection (a), no funds may be used to carry out the activities authorized by this section after September 30, 2002, unless the Secretary has transmitted to the Congress the report required by this subsection and 1 month has elapsed since that transmission. The report shall include a plan containing—

- (1) a detailed description of how proposals will be solicited and evaluated, including a list of all activities expected to be undertaken;
- (2) a detailed list of technical milestones for each coal and related technology that will be pursued;
- (3) a description of how the programs authorized in this subsection will be carried out so as to complement and not duplicate activities authorized under division E.

Subtitle B—Oil and Gas

SEC. 2421. 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. 2422. 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.

Subtitle C—Ultra-Deepwater and Unconventional Drilling

SEC. 2441. SHORT TITLE.

This subtitle may be cited as the “Natural Gas and Other Petroleum Research, Development, and Demonstration Act of 2001”.

SEC. 2442. DEFINITIONS.

For purposes of this subtitle—

- (1) the term “deepwater” means water depths greater than 200 meters but less than 1,500 meters;
- (2) the term “Fund” means the Ultra-Deepwater and Unconventional Gas Research Fund established under section 2450;
- (3) the term “institution of higher education” has the meaning given that term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001);

(4) the term “Research Organization” means the Research Organization created pursuant to section 2446(a);

(5) the term “ultra-deepwater” means water depths greater than 1,500 meters; and

(6) the term “unconventional” means located in heretofore inaccessible or uneconomic formations on land.

SEC. 2443. ULTRA-DEEPWATER PROGRAM.

The Secretary shall establish a program of research, development, and demonstration of ultra-deepwater natural gas and other petroleum exploration and production technologies, in areas currently available for Outer Continental Shelf leasing. The program shall be carried out by the Research Organization as provided in this subtitle.

SEC. 2444. NATIONAL ENERGY TECHNOLOGY LABORATORY.

The National Energy Technology Laboratory and the United States Geological Survey, when appropriate, shall carry out programs of long-term research into new natural gas and other petroleum exploration and production technologies and environmental mitigation technologies for production from unconventional and ultra-deepwater resources, including methane hydrates. Such Laboratory shall also conduct a program of research, development, and demonstration of new technologies for the reduction of greenhouse gas emissions from unconventional and ultra-deepwater natural gas or other petroleum exploration and production activities, including sub-sea floor carbon sequestration technologies.

SEC. 2445. ADVISORY COMMITTEE.

(a) ESTABLISHMENT.—The Secretary shall, within 3 months after the date of the enactment of this Act, establish an Advisory Committee consisting of 7 members, each having extensive operational knowledge of and experience in the natural gas and other petroleum exploration and production industry who are not Federal Government employees or contractors. A minimum of 4 members shall have extensive knowledge of ultra-deepwater natural gas or other petroleum exploration and production technologies, a minimum of 2 members shall have extensive knowledge of unconventional natural gas or other petroleum exploration and production technologies, and at least 1 member shall have extensive knowledge of greenhouse gas emission reduction technologies, including carbon sequestration.

(b) FUNCTION.—The Advisory Committee shall advise the Secretary on the selection of an organization to create the Research Organization and on the implementation of this subtitle.

(c) COMPENSATION.—Members of the Advisory Committee shall serve without compensation but shall receive travel expenses, including per diem in lieu of subsistence, in accordance with applicable provisions under subchapter I of chapter 57 of title 5, United States Code.

(d) ADMINISTRATIVE COSTS.—The costs of activities carried out by the Secretary and the Advisory Committee under this subtitle shall be paid or reimbursed from the Fund.

(e) DURATION OF ADVISORY COMMITTEE.—Section 14 of the Federal Advisory Committee Act shall not apply to the Advisory Committee.

SEC. 2446. RESEARCH ORGANIZATION.

(a) SELECTION OF RESEARCH ORGANIZATION.—The Secretary, within 6 months after the date of the enactment of this Act, shall solicit proposals from eligible entities for the creation of the Research Organization, and within 3 months after such solicitation, shall select an entity to create the Research Organization.

(b) ELIGIBLE ENTITIES.—Entities eligible to create the Research Organization shall—

(1) have been in existence as of the date of the enactment of this Act;

(2) be entities exempt from tax under section 501(c)(3) of the Internal Revenue Code of 1986; and

(3) be experienced in planning and managing programs in natural gas or other petroleum exploration and production research, development, and demonstration.

(c) PROPOSALS.—A proposal from an entity seeking to create the Research Organization shall include a detailed description of the proposed membership and structure of the Research Organization.

(d) FUNCTIONS.—The Research Organization shall—

(1) award grants on a competitive basis to qualified—

- (A) research institutions;
- (B) institutions of higher education;
- (C) companies; and
- (D) consortia formed among institutions and companies described in subparagraphs (A) through (C) for the purpose of conducting research, development, and demonstration of unconventional and ultra-deepwater natural gas or other petroleum exploration and production technologies; and

(2) review activities under those grants to ensure that they comply with the requirements of this subtitle and serve the purposes for which the grant was made.

(3) ensure that they comply with the requirements of this subtitle and serve the purposes for which the grant was made.

SEC. 2447. GRANTS.

(a) TYPES OF GRANTS.—

(1) UNCONVENTIONAL.—The Research Organization shall award grants for research, development, and demonstration of technologies to maximize the value of the Government’s natural gas and other petroleum resources in unconventional reservoirs, and to develop technologies to increase the supply of natural gas and other petroleum resources by lowering the cost and improving the efficiency of exploration and production of unconventional reservoirs, while improving safety and minimizing environmental impacts.

(2) ULTRA-DEEPWATER.—The Research Organization shall award grants for research, development, and demonstration of natural gas or other petroleum exploration and production technologies to—

(A) maximize the value of the Federal Government’s natural gas and other petroleum resources in the ultra-deepwater areas;

(B) increase the supply of natural gas and other petroleum resources by lowering the cost and improving the efficiency of exploration and production of ultra-deepwater reservoirs; and

(C) improve safety and minimize the environmental impacts of ultra-deepwater developments.

(3) ULTRA-DEEPWATER ARCHITECTURE.—The Research Organization shall award a grant to one or more consortia described in section 2446(d)(1)(D) for the purpose of developing and demonstrating the next generation architecture for ultra-deepwater production of natural gas and other petroleum in furtherance of the purposes stated in paragraph (2)(A) through (C).

(b) CONDITIONS FOR GRANTS.—Grants provided under this section shall contain the following conditions:

(1) If the grant recipient consists of more than one entity, the recipient shall provide a signed contract agreed to by all participating members clearly defining all rights to intellectual property for existing technology and for future inventions conceived and developed using funds provided under the

grant, in a manner that is consistent with applicable laws.

(2) There shall be a repayment schedule for Federal dollars provided for demonstration projects under the grant in the event of a successful commercialization of the demonstrated technology. Such repayment schedule shall provide that the payments are made to the Secretary with the express intent that these payments not impede the adoption of the demonstrated technology in the marketplace. In the event that such impedance occurs due to market forces or other factors, the Research Organization shall renegotiate the grant agreement so that the acceptance of the technology in the marketplace is enabled.

(3) Applications for grants for demonstration projects shall clearly state the intended commercial applications of the technology demonstrated.

(4) The total amount of funds made available under a grant provided under subsection (a)(3) shall not exceed 50 percent of the total cost of the activities for which the grant is provided.

(5) The total amount of funds made available under a grant provided under subsection (a)(1) or (2) shall not exceed 50 percent of the total cost of the activities covered by the grant, except that the Research Organization may elect to provide grants covering a higher percentage, not to exceed 90 percent, of total project costs in the case of grants made solely to independent producers.

(6) An appropriate amount of funds provided under a grant shall be used for the broad dissemination of technologies developed under the grant to interested institutions of higher education, industry, and appropriate Federal and State technology entities to ensure the greatest possible benefits for the public and use of government resources.

(7) Demonstrations of ultra-deepwater technologies for which funds are provided under a grant may be conducted in ultra-deepwater or deepwater locations.

(c) ALLOCATION OF FUNDS.—Funds available for grants under this subtitle shall be allocated as follows:

(1) 15 percent shall be for grants under subsection (a)(1).

(2) 15 percent shall be for grants under subsection (a)(2).

(3) 60 percent shall be for grants under subsection (a)(3).

(4) 10 percent shall be for carrying out section 2444.

SEC. 2448. PLAN AND FUNDING.

(a) TRANSMITTAL TO SECRETARY.—The Research Organization shall transmit to the Secretary an annual plan proposing projects and funding of activities under each paragraph of section 2447(a).

(b) REVIEW.—The Secretary shall have 1 month to review the annual plan, and shall approve the plan, if it is consistent with this subtitle. If the Secretary approves the plan, the Secretary shall provide funding as proposed in the plan.

(c) DISAPPROVAL.—If the Secretary does not approve the plan, the Secretary shall notify the Research Organization of the reasons for disapproval and shall withhold funding until a new plan is submitted which the Secretary approves. Within 1 month after notifying the Research Organization of a disapproval, the Secretary shall notify the appropriate congressional committees of the disapproval.

SEC. 2449. AUDIT.

The Secretary shall retain an independent, commercial auditor to determine the extent

to which the funds authorized by this subtitle have been expended in a manner consistent with the purposes of this subtitle. The auditor shall transmit a report annually to the Secretary, who shall transmit the report to the appropriate congressional committees, along with a plan to remedy any deficiencies cited in the report.

SEC. 2450. FUND.

(a) ESTABLISHMENT.—There is established in the Treasury of the United States a fund to be known as the “Ultra-Deepwater and Unconventional Gas Research Fund” which shall be available for obligation to the extent provided in advance in appropriations Acts for allocation under section 2447(c).

(b) FUNDING SOURCES.—

(1) LOANS FROM TREASURY.—There are authorized to be appropriated to the Secretary \$900,000,000 for the period encompassing fiscal years 2002 through 2009. Such amounts shall be deposited by the Secretary in the Fund, and shall be considered loans from the Treasury. Income received by the United States in connection with any ultra-deepwater oil and gas leases shall be deposited in the Treasury and considered as repayment for the loans under this paragraph.

(2) ADDITIONAL APPROPRIATIONS.—There are authorized to be appropriated to the Secretary such sums as may be necessary for the fiscal years 2002 through 2009, to be deposited in the Fund.

(3) OIL AND GAS LEASE INCOME.—To the extent provided in advance in appropriations Acts, not more than 7.5 percent of the income of the United States from Federal oil and gas leases may be deposited in the Fund for fiscal years 2002 through 2009.

SEC. 2451. SUNSET.

No funds are authorized to be appropriated for carrying out this subtitle after fiscal year 2009. The Research Organization shall be terminated when it has expended all funds made available pursuant to this subtitle.

Subtitle D—Fuel Cells

SEC. 2461. FUEL CELLS.

(a) IN GENERAL.—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.

(b) MANUFACTURING PRODUCTION AND PROCESSES.—In addition to the program under subsection (a), the Secretary, in consultation with other Federal agencies, as appropriate, shall establish a program for the demonstration of fuel cell technologies, including fuel cell proton exchange membrane technology, for commercial, residential, and transportation applications. The program shall specifically focus on promoting the application of and improved manufacturing production and processes for fuel cell technologies.

(c) AUTHORIZATION OF APPROPRIATIONS.—Within the amounts authorized to be appropriated under section 2481(a), there are authorized to be appropriated to the Secretary for the purpose of carrying out subsection (b), \$28,000,000 for each of fiscal years 2002 through 2004.

Subtitle E—Department of Energy Authorization of Appropriations

SEC. 2481. AUTHORIZATION OF APPROPRIATIONS.

(a) OPERATION AND MAINTENANCE.—There are authorized to be appropriated to the Secretary for operation and maintenance for subtitle B and subtitle D, 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 \$282,000,000 for fiscal year 2002, \$293,000,000 for fiscal year 2003, and \$305,000,000 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. 2501. SHORT TITLE.

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

SEC. 2502. 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.

(10) 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

(11) 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. 2503. 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 transmit 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. 2504. 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 2503. 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 2503;

(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. 2505. 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. 2521. 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. 2522. 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. 2523. 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. 2524. 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. 2541. 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 Director, 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. 2542. 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 modification 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. 2543. 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 2541(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. 2561. 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. 2562. REPORT.

Within 6 months 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 9 months after the date of the enactment of this Act.

Subtitle E—Department of Energy Authorization of Appropriations

SEC. 2581. AUTHORIZATION OF APPROPRIATIONS.

(a) **OPERATION AND MAINTENANCE.**—Including the amounts authorized to be appropriated for fiscal year 2002 under section 2505 for Fusion Energy Sciences and under section 2522(b) for the Spallation Neutron Source, there are authorized to be appropriated to the Secretary for the Office of Science (also including subtitle C, 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 \$3,299,558,000 for fiscal year 2002, to remain available until expended.

(b) **RESEARCH REGARDING PRECIOUS METAL CATALYSIS.**—Within the amounts authorized to be appropriated to the Secretary under subsection (a), \$5,000,000 for fiscal year 2002 may be used to carry out research in the use of precious metals (excluding platinum, palladium, and rhodium) in catalysis, either directly through national laboratories, or through the award of grants, cooperative agreements, or contracts with public or non-profit entities.

(c) **CONSTRUCTION.**—In addition to the amounts authorized to be appropriated under section 2522(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;

(2) \$11,405,000 for fiscal year 2002 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) \$18,633,000 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.

(d) **LIMITS ON USE OF FUNDS.**—None of the funds authorized to be appropriated in subsection (c) 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. 2601. RESEARCH, DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION OF ENERGY TECHNOLOGY PROGRAMS, PROJECTS, AND ACTIVITIES.

(a) **AUTHORIZED ACTIVITIES.**—Except as otherwise provided in this division, research, development, demonstration, and commercial application programs, projects, and activi-

ties for which appropriations are authorized under this division 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 division, in carrying out research, development, demonstration, and commercial application programs, projects, and activities for which appropriations are authorized under this division, the Secretary may use, to the extent authorized under applicable provisions of law, contracts, cooperative agreements, cooperative research and development agreements under the Stevenson-Wylder 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-Wylder 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 division.

(e) **INVENTIONS.**—An invention conceived and developed by any person using funds provided through a grant under this division shall be considered a subject invention for the purposes of chapter 18 of title 35, United States Code (commonly referred to as the Bayh-Dole Act).

(f) **OUTREACH.**—The Secretary shall ensure that each program authorized by this division includes an outreach component to provide information, as appropriate, to manufacturers, consumers, engineers, architects, builders, energy service companies, universities, facility planners and managers, State and local governments, and other entities.

(g) **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-Wylder 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-Wylder 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.

(h) APPLICATION OF SECTION.—This section shall not apply to any contract, cooperative agreement, cooperative research and development agreement under the Stevenson-Wylder 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. 2602. LIMITS ON USE OF FUNDS.

(a) MANAGEMENT AND OPERATING CONTRACTS.—

(1) COMPETITIVE PROCEDURE REQUIREMENT.—None of the funds authorized to be appropriated to the Secretary by this division 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 2 months 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) PRODUCTION OR PROVISION OF ARTICLES OR SERVICES.—None of the funds authorized to be appropriated to the Secretary by this division 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.

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

SEC. 2603. COST SHARING.

(a) RESEARCH AND DEVELOPMENT.—Except as otherwise provided in this division, for research and development programs carried out under this division, the Secretary shall require a commitment from non-Federal sources of at least 20 percent of the cost of the project. The Secretary may reduce or eliminate the non-Federal requirement under this subsection if the Secretary determines that the research and development is of a basic or fundamental nature.

(b) DEMONSTRATION AND COMMERCIAL APPLICATION.—Except as otherwise provided in this division, the Secretary shall require at least 50 percent of the costs directly and specifically related to any demonstration or commercial application project under this division to be provided from non-Federal sources. The Secretary may reduce the non-Federal requirement under this subsection if the Secretary determines that the reduction is necessary and appropriate considering the technological risks involved in the project and is necessary to meet the objectives of this division.

(c) CALCULATION OF AMOUNT.—In calculating the amount of the non-Federal commitment under subsection (a) or (b), the Secretary may include personnel, services, equipment, and other resources.

SEC. 2604. LIMITATION ON DEMONSTRATION AND COMMERCIAL APPLICATION OF ENERGY TECHNOLOGY.

Except as otherwise provided in this division, 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. 2605. REPROGRAMMING.

(a) AUTHORITY.—The Secretary may use amounts appropriated under this division 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 division exceed the total amount authorized to be appropriated to the Secretary by this division.

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

Subtitle B—Other Miscellaneous Provisions

SEC. 2611. 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. 2612. 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 \$5,000,000, 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. 2613. 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 addi-

tional 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 \$5,000,000.

SEC. 2614. 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 \$5,000,000.

(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. 2615. 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. 2616. 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 authorized by this division, as well as the measurable cost and performance-based goals for such programs as established under section 2004, and the progress on meeting such goals. Such reviews and assessments shall be conducted at least every 5 years, or more often as the Secretary considers necessary, and the Secretary shall transmit to the appropriate congressional committees reports containing the results of such reviews and assessments.

DIVISION C

SEC. 3001. SHORT TITLE.

(a) SHORT TITLE.—This division may be cited as the “Energy Tax Policy Act of 2001”.

(b) AMENDMENT OF 1986 CODE.—Except as otherwise expressly provided, whenever in this division an amendment or repeal is expressed in terms of an amendment to, or repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of the Internal Revenue Code of 1986.

TITLE I—CONSERVATION

SEC. 3101. CREDIT FOR RESIDENTIAL SOLAR ENERGY PROPERTY.

(a) IN GENERAL.—Subpart A of part IV of subchapter A of chapter 1 (relating to non-refundable personal credits) is amended by inserting after section 25B the following new section:

“SEC. 25C. RESIDENTIAL SOLAR ENERGY PROPERTY.

“(a) ALLOWANCE OF CREDIT.—In the case of an individual, there shall be allowed as a credit against the tax imposed by this chapter for the taxable year an amount equal to the sum of—

“(1) 15 percent of the qualified photovoltaic property expenditures made by the taxpayer during such year, and

“(2) 15 percent of the qualified solar water heating property expenditures made by the taxpayer during the taxable year.

“(b) LIMITATIONS.—

“(1) MAXIMUM CREDIT.—The credit allowed under subsection (a) shall not exceed—

“(A) \$2,000 for each system of property described in subsection (c)(1), and

“(B) \$2,000 for each system of property described in subsection (c)(2).

“(2) SAFETY CERTIFICATIONS.—No credit shall be allowed under this section for an item of property unless—

“(A) in the case of solar water heating equipment, such equipment is certified for

performance and safety by the non-profit Solar Rating Certification Corporation or a comparable entity endorsed by the government of the State in which such property is installed, and

“(B) in the case of a photovoltaic system, such system meets appropriate fire and electric code requirements.

“(3) LIMITATION BASED ON AMOUNT OF TAX.—The credit allowed under subsection (a) for the taxable year shall not exceed the excess of—

“(A) the sum of the regular tax liability (as defined in section 26(b)) plus the tax imposed by section 55, over

“(B) the sum of the credits allowable under this subpart (other than this section and sections 23, 25D, and 25E) and section 27 for the taxable year.

“(c) DEFINITIONS.—For purposes of this section—

“(1) QUALIFIED SOLAR WATER HEATING PROPERTY EXPENDITURE.—The term ‘qualified solar water heating property expenditure’ means an expenditure for property to heat water for use in a dwelling unit located in the United States and used as a residence if at least half of the energy used by such property for such purpose is derived from the sun.

“(2) QUALIFIED PHOTOVOLTAIC PROPERTY EXPENDITURE.—The term ‘qualified photovoltaic property expenditure’ means an expenditure for property that uses solar energy to generate electricity for use in a dwelling unit.

“(3) SOLAR PANELS.—No expenditure relating to a solar panel or other property installed as a roof (or portion thereof) shall fail to be treated as property described in paragraph (1) or (2) solely because it constitutes a structural component of the structure on which it is installed.

“(4) LABOR COSTS.—Expenditures for labor costs properly allocable to the onsite preparation, assembly, or original installation of the property described in paragraph (1) or (2) and for piping or wiring to interconnect such property to the dwelling unit shall be taken into account for purposes of this section.

“(5) SWIMMING POOLS, ETC., USED AS STORAGE MEDIUM.—Expenditures which are properly allocable to a swimming pool, hot tub, or any other energy storage medium which has a function other than the function of such storage shall not be taken into account for purposes of this section.

“(d) SPECIAL RULES.—

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

“(A) The amount of the credit allowable under subsection (a) by reason of expenditures (as the case may be) made during such calendar year by any of such individuals with respect to such dwelling unit shall be determined by treating all of such individuals as 1 taxpayer whose taxable year is such calendar year.

“(B) There shall be allowable with respect to such expenditures to each of such individuals, a credit under subsection (a) for the taxable year in which such calendar year ends in an amount which bears the same ratio to the amount determined under subparagraph (A) as the amount of such expenditures made by such individual during such calendar year bears to the aggregate of such expenditures made by all of such individuals during such calendar year.

“(2) TENANT-STOCKHOLDER IN COOPERATIVE HOUSING CORPORATION.—In the case of an in-

dividual who is a tenant-stockholder (as defined in section 216) in a cooperative housing corporation (as defined in such section), such individual shall be treated as having made his tenant-stockholder's proportionate share (as defined in section 216(b)(3)) of any expenditures of such corporation.

“(3) CONDOMINIUMS.—

“(A) IN GENERAL.—In the case of an individual who is a member of a condominium management association with respect to a condominium which he owns, such individual shall be treated as having made his proportionate share of any expenditures of such association.

“(B) CONDOMINIUM MANAGEMENT ASSOCIATION.—For purposes of this paragraph, the term ‘condominium management association’ means an organization which meets the requirements of paragraph (1) of section 528(c) (other than subparagraph (E) thereof) with respect to a condominium project substantially all of the units of which are used as residences.

“(4) ALLOCATION IN CERTAIN CASES.—If less than 80 percent of the use of an item is for nonbusiness purposes, only that portion of the expenditures for such item which is properly allocable to use for nonbusiness purposes shall be taken into account.

“(5) WHEN EXPENDITURE MADE; AMOUNT OF EXPENDITURE.—

“(A) IN GENERAL.—Except as provided in subparagraph (B), an expenditure with respect to an item shall be treated as made when the original installation of the item is completed.

“(B) EXPENDITURES PART OF BUILDING CONSTRUCTION.—In the case of an expenditure in connection with the construction or reconstruction of a structure, such expenditure shall be treated as made when the original use of the constructed or reconstructed structure by the taxpayer begins.

“(C) AMOUNT.—The amount of any expenditure shall be the cost thereof.

“(6) PROPERTY FINANCED BY SUBSIDIZED ENERGY FINANCING.—For purposes of determining the amount of expenditures made by any individual with respect to any dwelling unit, there shall not be taken in to account expenditures which are made from subsidized energy financing (as defined in section 48(a)(4)(A)).

“(e) BASIS ADJUSTMENTS.—For purposes of this subtitle, if a credit is allowed under this section for any expenditure with respect to any property, the increase in the basis of such property which would (but for this subsection) result from such expenditure shall be reduced by the amount of the credit so allowed.

“(f) TERMINATION.—The credit allowed under this section shall not apply to taxable years beginning after December 31, 2006 (December 31, 2008, with respect to qualified photovoltaic property expenditures).”.

(b) CONFORMING AMENDMENTS.—

(1) Subsection (a) of section 1016 is amended by striking “and” at the end of paragraph (27), by striking the period at the end of paragraph (28) and inserting “, and”, and by adding at the end the following new paragraph:

“(29) to the extent provided in section 25C(e), in the case of amounts with respect to which a credit has been allowed under section 25C.”.

(2) The table of sections for subpart A of part IV of subchapter A of chapter 1 is amended by inserting after the item relating to section 25B the following new item:

“Sec. 25C. Residential solar energy property.”.

(c) EFFECTIVE DATE.—The amendments made by this section shall apply to taxable years ending after December 31, 2001.

SEC. 3102. EXTENSION AND EXPANSION OF CREDIT FOR ELECTRICITY PRODUCED FROM RENEWABLE RESOURCES.

(a) EXTENSION OF CREDIT FOR WIND AND CLOSED-LOOP BIOMASS FACILITIES.—Subparagraphs (A) and (B) of section 45(c)(3) are each amended by striking “2002” and inserting “2007”.

(b) EXPANSION OF CREDIT FOR OPEN-LOOP BIOMASS AND LANDFILL GAS FACILITIES.—Paragraph (3) of section 45(c) is amended by adding at the end the following new subparagraphs:

“(D) OPEN-LOOP BIOMASS FACILITIES.—In the case of a facility using open-loop biomass to produce electricity, the term ‘qualified facility’ means any facility owned by the taxpayer which is originally placed in service before January 1, 2007.

“(E) LANDFILL GAS FACILITIES.—In the case of a facility producing electricity from gas derived from the biodegradation of municipal solid waste, the term ‘qualified facility’ means any facility owned by the taxpayer which is originally placed in service before January 1, 2007.”

(c) DEFINITION AND SPECIAL RULES.—Subsection (c) of section 45 is amended by adding at the end the following new paragraphs:

“(5) OPEN-LOOP BIOMASS.—The term ‘open-loop biomass’ means any solid, nonhazardous, cellulosic waste material which is segregated from other waste materials and which is derived from—

“(A) any of the following forest-related resources: mill residues, precommercial thinnings, slash, and brush, but not including old-growth timber,

“(B) solid wood waste materials, including waste pallets, crates, dunnage, manufacturing and construction wood wastes (other than pressure-treated, chemically-treated, or painted wood wastes), and landscape or right-of-way tree trimmings, but not including municipal solid waste (garbage), gas derived from the biodegradation of solid waste, or paper that is commonly recycled, or

“(C) agriculture sources, including orchard tree crops, vineyard, grain, legumes, sugar, and other crop by-products or residues. Such term shall not include closed-loop biomass.

“(6) REDUCED CREDIT FOR CERTAIN PREEFFECTIVE DATE FACILITIES.—In the case of any facility described in subparagraph (D) or (E) of paragraph (3) which is placed in service before the date of the enactment of this subparagraph—

“(A) subsection (a)(1) shall be applied by substituting ‘1.0 cents’ for ‘1.5 cents’, and

“(B) the 5-year period beginning on the date of the enactment of this paragraph shall be substituted in lieu of the 10-year period in subsection (a)(2)(A)(ii).

“(7) LIMIT ON REDUCTIONS FOR GRANTS, ETC., FOR OPEN-LOOP BIOMASS FACILITIES.—If the amount of the credit determined under subsection (a) with respect to any open-loop biomass facility is required to be reduced under paragraph (3) of subsection (b), the fraction under such paragraph shall in no event be greater than $\frac{1}{2}$.

“(8) COORDINATION WITH SECTION 29.—The term ‘qualified facility’ shall not include any facility the production from which is allowed as a credit under section 29 for the taxable year or any prior taxable year.”

(d) EFFECTIVE DATE.—The amendments made by this section shall apply to electricity sold after the date of the enactment of this Act.

SEC. 3103. CREDIT FOR QUALIFIED STATIONARY FUEL CELL POWERPLANTS.

(a) BUSINESS PROPERTY.—

(1) IN GENERAL.—Subparagraph (A) of section 48(a)(3) (defining energy property) is amended by striking “or” at the end of clause (i), by adding “or” at the end of clause (ii), and by inserting after clause (ii) the following new clause:

“(iii) equipment which is part of a qualified stationary fuel cell powerplant.”

(2) QUALIFIED STATIONARY FUEL CELL POWERPLANT.—Subsection (a) of section 48 is amended by redesignating paragraphs (4) and (5) as paragraphs (5) and (6), respectively, and by inserting after paragraph (3) the following new paragraph:

“(4) QUALIFIED STATIONARY FUEL CELL POWERPLANT.—For purposes of this subsection—

“(A) IN GENERAL.—The term ‘qualified stationary fuel cell powerplant’ means a stationary fuel cell power plant that has an electricity-only generation efficiency greater than 30 percent.

“(B) LIMITATION.—In the case of qualified stationary fuel cell powerplant placed in service during the taxable year, the credit under subsection (a) for such year may not exceed \$1,000 for each kilowatt of capacity.

“(C) STATIONARY FUEL CELL POWER PLANT.—The term ‘stationary fuel cell power plant’ means an integrated system comprised of a fuel cell stack assembly and associated balance of plant components that converts a fuel into electricity using electrochemical means.

“(D) TERMINATION.—Such term shall not include any property placed in service after December 31, 2006.”

(3) EFFECTIVE DATE.—The amendments made by this subsection shall apply to property placed in service after December 31, 2001, under rules similar to the rules of section 48(m) of the Internal Revenue Code of 1986 (as in effect on the day before the date of the enactment of the Revenue Reconciliation Act of 1990).

(b) NONBUSINESS PROPERTY.—

(1) IN GENERAL.—Subpart A of part IV of subchapter A of chapter 1 (relating to non-refundable personal credits) is amended by inserting after section 25C the following new section:

“SEC. 25D. NONBUSINESS QUALIFIED STATIONARY FUEL CELL POWERPLANT.

“(a) IN GENERAL.—In the case of an individual, there shall be allowed as a credit against the tax imposed by this chapter for the taxable year an amount equal to 10 percent of the qualified stationary fuel cell powerplant expenditures which are paid or incurred during such year.

“(b) LIMITATIONS.—

“(1) IN GENERAL.—The credit allowed under subsection (a) for the taxable year and all prior taxable years shall not exceed \$1,000 for each kilowatt of capacity.

“(2) LIMITATION BASED ON AMOUNT OF TAX.—The credit allowed under subsection (a) for the taxable year shall not exceed the excess of—

“(A) the sum of the regular tax liability (as defined in section 26(b)) plus the tax imposed by section 55, over

“(B) the sum of the credits allowable under this subpart (other than this section and sections 23 and 25E) and section 27 for the taxable year.

“(c) QUALIFIED STATIONARY FUEL CELL POWERPLANT EXPENDITURES.—For purposes of this section, the term ‘qualified stationary fuel cell powerplant expenditures’ means expenditures by the taxpayer for any qualified stationary fuel cell powerplant (as defined in section 48(a)(4))—

“(1) which meets the requirements of subparagraphs (B) and (D) of section 48(a)(3), and

“(2) which is installed on or in connection with a dwelling unit—

“(A) which is located in the United States, and

“(B) which is used by the taxpayer as a residence.

Such term includes expenditures for labor costs properly allocable to the onsite preparation, assembly, or original installation of the property.

“(d) SPECIAL RULES.—For purposes of this section, rules similar to the rules of section 25C(d) shall apply.

“(e) BASIS ADJUSTMENTS.—For purposes of this subtitle, if a credit is allowed under this section for any expenditure with respect to any property, the increase in the basis of such property which would (but for this subsection) result from such expenditure shall be reduced by the amount of the credit so allowed.

“(f) TERMINATION.—This section shall not apply to any expenditure made after December 31, 2006.”

(2) CONFORMING AMENDMENTS.—

(A) Subsection (a) of section 1016 is amended by striking “and” at the end of paragraph (28), by striking the period at the end of paragraph (29) and inserting “, and”, and by adding at the end the following new paragraph:

“(30) to the extent provided in section 25D(e), in the case of amounts with respect to which a credit has been allowed under section 25D.”

(B) The table of sections for subpart A of part IV of subchapter A of chapter 1 is amended by inserting after the item relating to section 25C the following new item:

“Sec. 25D. Nonbusiness qualified stationary fuel cell powerplant.”

(3) EFFECTIVE DATE.—The amendments made by this subsection shall apply to expenditures paid or incurred after December 31, 2001.

SEC. 3104. ALTERNATIVE MOTOR VEHICLE CREDIT.

(a) IN GENERAL.—Subpart B of part IV of subchapter A of chapter 1 (relating to foreign tax credit, etc.) is amended by adding at the end the following:

“SEC. 30B. ALTERNATIVE MOTOR VEHICLE CREDIT.

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

“(1) the new qualified fuel cell motor vehicle credit determined under subsection (b),

“(2) the new qualified hybrid motor vehicle credit determined under subsection (c),

“(3) the new qualified alternative fuel motor vehicle credit determined under subsection (d), and

“(4) the advanced lean burn technology motor vehicle credit determined under subsection (e).

“(b) NEW QUALIFIED FUEL CELL MOTOR VEHICLE CREDIT.—

“(1) IN GENERAL.—For purposes of subsection (a), the new qualified fuel cell motor vehicle credit determined under this subsection with respect to a new qualified fuel cell motor vehicle placed in service by the taxpayer during the taxable year is—

“(A) \$4,000, if such vehicle has a gross vehicle weight rating of not more than 8,500 pounds,

“(B) \$10,000, if such vehicle has a gross vehicle weight rating of more than 8,500 pounds but not more than 14,000 pounds,