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110TH CONGRESS
1ST SESSION

H. R. 2483

To provide for research, development, and demonstration on energy technologies to ensure the Nation's continued supply and efficient use of affordable, reliable, and clean energy, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MAY 24, 2007

Mr. HALL of Texas (for himself, Mrs. BIGGERT, Mr. MCCAUL of Texas, Mr. SMITH of Texas, Mr. GINGREY, and Mr. INGLIS of South Carolina) introduced the following bill; which was referred to the Committee on Science and Technology

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A BILL

To provide for research, development, and demonstration on energy technologies to ensure the Nation's continued supply and efficient use of affordable, reliable, and clean energy, and for other purposes.

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

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ''Energy for America Act''.

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

TITLE I—PRODUCED WATER

SEC. 101. SHORT TITLE.

This title may be cited as the ''Produced Water Utilization Act of 2007''.

SEC. 102. FINDINGS.

The Congress finds as follows:

(1) The population of the United States is increasing, and as the population increases, additional potable water supplies are required to sustain individuals, agricultural production, and industrial users, particularly in the Mountain West and desert Southwest, where water resources are scarce.

(2) During the development of domestic energy sources, including coalbed methane, oil, and natural gas, water may be extracted from underground sources and brought to the surface, often increasing energy production from subsurface geological formations in the process.

(3) Produced water frequently contains increased levels of potentially harmful dissolved solids, rendering much of the water nonpotable and unsuitable for agricultural or industrial uses, and encouraging reinjection of the water to subsurface geological formations to safely dispose of it, which may lead to reduced production of domestic energy resources and increased costs to producers.

(4) Increasing environmentally responsible surface utilization of produced water would—

(A) increase water supplies available for agricultural and industrial use;

(B) reduce the amount of produced water returned to underground formations; and

(C) increase domestic energy production by reducing costs associated with reinjection of produced water to the subsurface.

SEC. 103. DEFINITIONS.

In this title:

(1) EXISTING PROGRAM.—The term ''existing program'' means a program at the Department of Energy which is engaged in research, development, demonstration, and commercial application of technologies for unconventional domestic natural gas production and other domestic petroleum production as of the date of enactment of this Act.

(2) PRODUCED WATER.—The term ''produced water'' means water from an underground source that is brought to the surface as part of the process of exploration for or development of coalbed methane, oil, natural gas, or any other substance to be used as an energy source.

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

SEC. 104. PURPOSES.

(a) IN GENERAL.—The Secretary shall carry out under this title, in conjunction with an existing program,

a program of research, development, and demonstration of technologies for environmentally sustainable utilization of produced water for use for agriculture, irrigation, municipal, or industrial uses, or other environmentally sustainable purposes. The program shall be designed to maximize the utilization of produced water in the United States by increasing the quality of produced water and reducing the environmental impacts of produced water.

(b) PROGRAM ELEMENTS.—The program under this title shall address the following areas, including improving safety and minimizing environmental impacts of activities within each area:

(1) Produced water recovery, including research for desalination and demineralization to reduce total dissolved solids in the produced water.

(2) Produced water utilization for agricultural, irrigation, municipal, or industrial uses, or other environmentally sustainable purposes.

(3) Reinjection of produced water into subsurface geological formations to increase energy production.

(c) PROGRAM ADMINISTRATION.—The program under this title shall be administered by a consortium, administering an existing program, whose members have collectively demonstrated capabilities and experience in plan-

ning and managing research, development, demonstration, and commercial application programs for unconventional natural gas and other petroleum production and produced water utilization.

(d) ACTIVITIES AT THE NATIONAL ENERGY TECHNOLOGY LABORATORY.—The Secretary, through the National Energy Technology Laboratory, shall carry out a program of research, development, and demonstration activities complementary to and supportive of the research, development, and demonstration programs under subsection (b).

(e) CONSULTATION.—In carrying out this title, the Secretary shall consult regularly with the Secretary of the Interior and the Administrator of the Environmental Protection Agency.

SEC. 105. SUNSET.

The authority provided by this title shall terminate on September 30, 2016.

SEC. 106. FUNDING.

(a) ALLOCATION.—Amounts appropriated for this title for each fiscal year shall be allocated as follows:

(1) 75 percent shall be for activities under section 104(a), (b), and (c).

(2) 25 percent shall be for activities under section 104(d) and other activities under section 104,

including administrative functions such as program direction, overall program oversight, and contract management.

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this title $20,000,000 for each of fiscal years 2008 through 2016.

TITLE II—BIOMASS

SEC. 201. SHORT TITLE.

This title may be cited as the ''Biomass Research, Development, and Demonstration Act of 2007''.

SEC. 202. DEFINITIONS.

For the purposes of this title—

(1) the term ''institution of higher education'' has the meaning given that term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)); and

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

SEC. 203. ADVANCED BIOFUEL TECHNOLOGIES.

(a) AMENDMENTS.—Section 932 of the Energy Policy Act of 2005 (42 U.S.C. 16232) is amended—

(1) in subsection (b)(2), by inserting '', including motor and other fuels from biomass'' after ''biofuels''; and

(2) in subsection (c)—

(A) by redesignating paragraphs (2) through (4) as paragraphs (3) through (5), respectively;

(B) by adding the following new paragraph after paragraph (1):

''(2) technologies that would make biofuels produced from cellulosic feedstocks cost competitive with biofuels produced from corn by 2012;'';

(C) in paragraph (3), as so redesignated by subparagraph (A) of this paragraph, by inserting '', including through conducting research and development on the production of hydrocarbons and bioproducts other than ethanol from biomass'' after ''systems''; and

(D) in paragraph (4), as so redesignated by subparagraph (A) of this paragraph, by inserting '', including through conducting research and development on how to apply advanced genetic engineering and advanced bioengineering techniques to increase the efficiency and lower the cost of industrial-scale production of liquid fuels from cellulosic feedstocks'' after ''facilities''.

(b) INSTITUTION OF HIGHER EDUCATION GRANTS.—The Secretary shall designate not less than 10

percent of the funds appropriated for carrying out section 932(d) of the Energy Policy Act of 2005 (42 U.S.C. 16232(d)) for grants to competitively selected institutions of higher education around the country focused on meeting the objectives stated in such section 932(d).

(c) AUTHORIZATION OF APPROPRIATIONS.—Section 931(c) of the Energy Policy Act of 2005 (42 U.S.C. 16231(c)) is amended—

(1) in subsection (c)(1), by striking ''$100,000,000'' and inserting ''$150,000,000'';

(2) in subsection (c)(2), by striking ''$125,000,000'' and inserting ''$160,000,000''; and

(3) in subsection (c)(3), by striking ''$150,000,000'' and inserting ''$175,000,000''.

SEC. 204. BIOENERGY.

(a) BIOENERGY PROGRAM.—Section 932(d)(1)(B) of the Energy Policy Act of 2005 (42 U.S.C. 16232(d)(1)(B)) is amended—

(1) by striking ''and'' at the end of clause (iii); and

(2) by adding after clause (iv) the following new clause:

''(v) biodegradable natural plastics in or from biomass; and''.

(b) AUTHORIZATION OF APPROPRIATIONS.—Section 931 of the Energy Policy Act of 2005 (42 U.S.C. 16231) is amended—

(1) in subsection (c)(1), by inserting before the semicolon the following: ", including $25,000,000 for activities under section 932(d)(1)(B)(v)";

(2) in subsection (c)(2), by inserting before the semicolon the following: ", including $25,000,000 for activities under section 932(d)(1)(B)(v)"; and

(3) in subsection (c)(3), by inserting before the period the following: ", including $25,000,000 for activities under section 932(d)(1)(B)(v)".

TITLE III—PLUG-IN HYBRID ELECTRIC VEHICLES

SEC. 301. SHORT TITLE.

This title may be cited as the "Plug-In Hybrid Electric Vehicle Act of 2007".

SEC. 302. NEAR-TERM VEHICLE TECHNOLOGY PROGRAM.

(a) DEFINITIONS.—In this section:

(1) BATTERY.—The term "battery" means a device or system for the electrochemical storage of energy.

(2) BIOMASS.—The term "biomass" has meaning given the term in section 932 of the Energy Policy Act of 2005 (42 U.S.C. 16232).

(3) E85.—The term ''E85'' means a fuel blend containing 85 percent ethanol and 15 percent gasoline by volume.

(4) ELECTRIC DRIVE TRANSPORTATION TECHNOLOGY.—The term ''electric drive transportation technology'' means—

(A) vehicles that use an electric motor for all or part of their motive power and that may or may not use offboard electricity, including battery electric vehicles, fuel cell vehicles, hybrid electric vehicles, plug-in hybrid electric vehicles, flexible fuel plug-in hybrid electric vehicles, and electric rail; and

(B) related equipment, including electric equipment necessary to recharge a plug-in hybrid electric vehicle.

(5) FLEXIBLE FUEL PLUG-IN HYBRID ELECTRIC VEHICLE.—The term ''flexible fuel plug-in hybrid electric vehicle'' means a plug-in hybrid electric vehicle—

(A) warranted by its manufacturer as capable of operating on any combination of gasoline or E85 for its onboard internal combustion or heat engine; or

(B) that uses a fuel cell for battery charging when disconnected from offboard power sources.

(6) FUEL CELL VEHICLE.—The term ''fuel cell vehicle'' means an onroad vehicle that uses a fuel cell (as defined in section 803 of the Energy Policy Act of 2005 (42 U.S.C. 16152)).

(7) HYBRID ELECTRIC VEHICLE.—The term ''hybrid electric vehicle'' means an onroad vehicle that—

(A) can operate on either liquid combustible fuel or electric power provided by an onboard battery; and

(B) utilizes regenerative power capture technology to recover energy expended in braking the vehicle for use in recharging the battery.

(8) PLUG-IN HYBRID ELECTRIC VEHICLE.—The term ''plug-in hybrid electric vehicle'' means a hybrid electric vehicle that can operate solely on electric power for a minimum of 20 miles under city driving conditions, and that is capable of recharging its battery from an offboard electricity source.

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

(b) PROGRAM.—The Secretary shall conduct a program of research, development, demonstration, and commercial application on technologies needed for the development of plug-in hybrid electric vehicles, including—

(1) high capacity, high efficiency batteries, to—

(A) improve battery life, energy storage capacity, and power delivery capacity, and lower cost; and

(B) minimize waste and hazardous material production in the entire value chain, including after the end of the useful life of the batteries;

(2) high efficiency onboard and offboard charging components;

(3) high power drive train systems for passenger and commercial vehicles and for supporting equipment;

(4) onboard energy management systems, power trains, and systems integration for plug-in hybrid electric vehicles, flexible fuel plug-in hybrid electric vehicles, and hybrid electric vehicles, including efficient cooling systems and systems that minimize the emissions profile of such vehicles; and

(5) lightweight materials, including research, development, demonstration, and commercial appli-

cation to reduce the cost of materials such as steel alloys and carbon fibers.

(c) PLUG-IN HYBRID ELECTRIC VEHICLE DEMONSTRATION PROGRAM.—

(1) ESTABLISHMENT.—The Secretary shall establish a competitive grant pilot demonstration program to provide not more than 25 grants annually to State governments, local governments, metropolitan transportation authorities, or combinations thereof to carry out a project or projects for demonstration of plug-in hybrid electric vehicles.

(2) APPLICATIONS.—

(A) REQUIREMENTS.—The Secretary shall issue requirements for applying for grants under the demonstration pilot program. The Secretary shall require that applications, at a minimum, include a description of how data will be—

(i) collected on the—

(I) performance of the vehicle or vehicles and the components, including the battery, energy management, and charging systems, under various driving speeds, trip ranges, traffic, and other driving conditions;

(II) costs of the vehicle or vehicles, including acquisition, operating, and maintenance costs, and how the project or projects will be self-sustaining after Federal assistance is completed; and

(III) emissions of the vehicle or vehicles, including greenhouse gases, and the amount of petroleum displaced as a result of the project or projects; and

(ii) summarized for dissemination to the Department, other grantees, and the public.

(B) PARTNERS.—An applicant under subparagraph (A) may carry out a project or projects under the pilot program in partnership with one or more private entities.

(3) SELECTION CRITERIA.—

(A) PREFERENCE.—When making awards under this subsection, the Secretary shall consider each applicant's previous experience involving plug-in hybrid electric vehicles and shall give preference to proposals that—

(i) provide the greatest demonstration per award dollar, with preference increasing as the number of miles that a plug-in hybrid electric vehicle can operate solely on electric power under city driving conditions increases; and

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

(B) BREADTH OF DEMONSTRATIONS.—In awarding grants under this subsection, the Secretary shall ensure the program will demonstrate plug-in hybrid electric vehicles under various circumstances, including—

(i) driving speeds;

(ii) trip ranges;

(iii) driving conditions;

(iv) climate conditions; and

(v) topography,

to optimize understanding and function of plug-in hybrid electric vehicles.

(4) PILOT PROJECT REQUIREMENTS.—

(A) SUBSEQUENT FUNDING.—An applicant that has received a grant in one year may apply for additional funds in subsequent years, but the Secretary shall not provide more than $10,000,000 in Federal assistance under the pilot program to any applicant for the period encompassing fiscal years 2008 through fiscal year 2012.

(B) INFORMATION.—The Secretary shall establish mechanisms to ensure that the information and knowledge gained by participants in the pilot program are shared among the pilot program participants and are available to other interested parties, including other applicants.

(5) AWARD AMOUNTS.—The Secretary shall determine grant amounts, but the maximum size of grants shall decline as the cost of producing plug-in hybrid electric vehicles declines or the cost of converting a hybrid electric vehicle to a plug-in hybrid electric vehicle declines.

(d) COST SHARING.—The Secretary shall carry out the program under this section in compliance with section

988(a) through (d) and section 989 of the Energy Policy Act of 2005 (42 U.S.C. 16352(a) through (d) and 16353).

(e) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary—

(1) for carrying out subsection (b), $250,000,000 for each of fiscal years 2008 through 2012, of which up to $50,000,000 may be used for the program described in paragraph (5) of that subsection; and

(2) for carrying out subsection (c), $50,000,000 for each of fiscal years 2008 through 2012.

TITLE IV—ENERGY STORAGE

SEC. 401. SHORT TITLE.

This title may be cited as the ''Energy Storage Solutions for America Act of 2007''.

SEC. 402. FINDINGS.

The Congress finds that—

(1) as demand rises by an estimated 40 percent in the electricity sector by 2030, we will need solutions that are clean, reliable, and affordable; and

(2) improved energy storage capability will allow for more wind and solar energy because it addresses the problem of intermittency inherent in these renewable sources of energy.

SEC. 403. ENERGY STORAGE SYSTEMS FOR ELECTRICITY TRANSMISSION AND DISTRIBUTION.

(a) DEFINITIONS.—In this section:

(1) COUNCIL.—The term ''Council'' means the Energy Storage Advisory Council established under subsection (c).

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

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

(b) PROGRAM.—The Secretary shall carry out a research, development, and demonstration program to support the ability of the United States to remain globally competitive in energy storage systems for electricity transmission and distribution.

(c) ENERGY STORAGE ADVISORY COUNCIL.—

(1) ESTABLISHMENT.—Not later than 90 days after the date of enactment of this Act, the Secretary shall establish an Energy Storage Advisory Council.

(2) COMPOSITION.—

(A) IN GENERAL.—Subject to subparagraph (B), the Council shall consist of not less than 15 individuals appointed by the Secretary, based on recommendations of the National Academy of Sciences.

(B) ENERGY STORAGE INDUSTRY.—The Council shall consist primarily of representatives of the energy storage industry of the United States.

(C) CHAIRPERSON.—The Secretary shall select a Chairperson for the Council from among the members appointed under subparagraph (A).

(3) MEETINGS.—

(A) IN GENERAL.—The Council shall meet not less than once a year.

(B) FEDERAL ADVISORY COMMITTEE ACT.—The Federal Advisory Committee Act (5 U.S.C. App. 2) shall apply to a meeting of the Council.

(4) PLANS.—Not later than 1 year after the date of enactment of this Act, in conjunction with the Secretary, the Council shall develop 5-year plans for integrating basic and applied research so that the United States retains a globally competitive domestic energy storage industry for electricity transmission and distribution.

(5) REVIEW.—The Council shall—

(A) assess the performance of the Department in meeting the goals of the plans developed under paragraph (4); and

(B) make specific recommendations to the Secretary on programs or activities that should be established or terminated to meet those goals.

(d) BASIC RESEARCH PROGRAM.—The Secretary shall conduct a basic research program on energy storage systems to support electricity transmission and distribution, including—

(1) materials design;

(2) materials synthesis and characterization;

(3) electrolytes, including bioelectrolytes;

(4) surface and interface dynamics; and

(5) modeling and simulation.

(e) APPLIED RESEARCH PROGRAM.—The Secretary shall conduct an applied research program on energy storage systems to support electricity transmission and distribution technologies.

(f) REVIEW BY NATIONAL ACADEMY OF SCIENCES.—Not later than 5 years after the date of enactment of this Act, the Secretary shall offer to enter into an arrangement with the National Academy of Sciences to assess the performance of the Department in making the United States

globally competitive in energy storage systems for electricity transmission and distribution.

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

(1) the basic research program under subsection (d) $50,000,000 for each of fiscal years 2008 through 2012; and

(2) the applied research program under subsection (e) $80,000,000 for each of fiscal years 2008 through 2012.

TITLE V—ENERGY EFFICIENT BUILDINGS

SEC. 501. SHORT TITLE.

This title may be cited as the ''Energy Efficient Buildings Act of 2007''.

SEC. 502. ENERGY EFFICIENT BUILDING GRANT PROGRAM.

(a) ENERGY EFFICIENT BUILDING PILOT GRANT PROGRAM.—

(1) IN GENERAL.—Not later than 6 months after the date of enactment of this Act, the Secretary of Energy (in this title referred to as the ''Secretary'') shall establish a pilot program to award grants to businesses and organizations for new construction of energy efficient buildings, or

major renovations of buildings that will result in energy efficient buildings, to demonstrate innovative energy efficiency technologies, especially those sponsored by the Department of Energy.

(2) AWARDS.—The Secretary shall award grants under this subsection competitively to those applicants whose proposals—

(A) best demonstrate—

(i) likelihood to meet or exceed the standards referred to in subsection (b)(2);

(ii) likelihood to maximize cost-effective energy efficiency opportunities; and

(iii) advanced energy efficiency technologies; and

(B) maximize the leverage of private investment for costs related to increasing the energy efficiency of the building.

(3) CONSIDERATION.—The Secretary shall give due consideration to proposals for buildings that are likely to serve low and moderate income populations.

(4) AMOUNT OF GRANTS.—Grants under this subsection shall be for up to 50 percent of design and energy modeling costs, not to exceed $50,000 per building. No single grantee may be eligible for more than 3 grants per year under this program.

(5) GRANT PAYMENTS.—

(A) INITIAL PAYMENT.—The Secretary shall pay 50 percent of the total amount of the grant to grant recipients upon selection.

(B) REMAINDER OF PAYMENT.—The Secretary shall pay the remaining 50 percent of the grant only after independent certification, by a professional engineer or other qualified professional, that operational buildings are energy efficient buildings as defined in subsection (b).

(C) FAILURE TO COMPLY.—The Secretary shall not provide the remainder of the payment unless the building is certified within 6 months after operation of the completed building to meet the requirements described in subparagraph (B), or in the case of major renovations the building is certified within 6 months of the completion of the renovations.

(6) REPORT TO CONGRESS.—Not later than 3 years after awarding the first grant under this subsection, the Secretary shall transmit to Congress a report containing—

(A) the total number and dollar amount of grants awarded under this subsection; and

(B) an estimate of aggregate cost and energy savings enabled by the pilot program under this subsection.

(7) ADMINISTRATIVE EXPENSES.—Administrative expenses for the program under this subsection shall not exceed 10 percent of appropriated funds.

(b) DEFINITION OF ENERGY EFFICIENT BUILDING.—For purposes of this section the term ''energy efficient building'' means a building that—

(1) achieves a reduction in energy consumption of—

(A) at least 30 percent for new construction, compared to the energy standards set by the 2004 International Energy Conservation Code (in the case of residential buildings) or ASHRAE Standard 90.1–2004; or

(B) at least 20 percent for major renovations, compared to energy consumption before renovations are begun;

(2) is constructed or renovated in accordance with the most current, appropriate, and applicable voluntary consensus standards, as determined by the Secretary, such as those listed in the assessment under section 914(b), or revised or developed under

section 914(c), of the Energy Policy Act of 2005; and

(3) after construction or renovation—

(A) uses heating, ventilating, and air conditioning systems that perform at no less than Energy Star standards; or

(B) if Energy Star standards are not applicable, uses Federal Energy Management Program recommended heating, ventilating, and air conditioning products.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary for carrying out this section $10,000,000 for each of the fiscal years 2008 through 2012.

TITLE VI—ARPA–E

SEC. 601. ADVANCED RESEARCH PROJECTS AUTHORITY-ENERGY (ARPA–E).

(a) FINDINGS.—The Congress finds the following:

(1) The Department of Energy through existing authorities and programs promotes technology transfer of basic and applied research funded by the Department of Energy and performed at its national laboratories, nonprofit and educational institutions, and the private sector, but there is a need to more quickly identify opportunities to accelerate the com-

mercial application of new energy technologies to meet national energy needs.

(2) The principal Department of Energy program organizations that already oversee various projects for basic and applied research and commercialization of new energy technologies are the Office of Science, the Office of Energy Efficiency and Renewable Energy, the National Nuclear Security Administration, the Office of Fossil Energy, the Office of Electricity Delivery and Energy Reliability, and the Office of Nuclear Energy.

(3) A more fully integrated Departmental approach to advanced energy research will help bridge the gap between basic research and applied technology to overcome long-term and high-risk technological barriers to the development of advanced energy technologies.

(b) DEFINITIONS.—For purposes of this section—

(1) the term ''ARPA–E project'' means a project identified by the Secretary that shows promise to accelerate efforts to overcome long-term and high-risk technological barriers to the development of advanced energy technologies, including projects on—

(A) advanced basic energy-related research that shows unique innovation and scientific and technical merit and the potential for commercial application;

(B) development of resultant technologies and processes for energy supply and efficient end use; and

(C) demonstration and commercial application of the most promising energy technologies and research applications on both a large and small scale; and

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

(c) SELECTION CRITERIA.—In identifying ARPA–E projects for support, the Secretary shall—

(1) ensure that ARPA–E projects do not alter the Department's current balance of effort along the spectrum of energy research and development activities;

(2) consider the novelty, scientific and technical merit, and potential transformative nature of the proposed projects;

(3) consider the demonstrated capabilities of the applicants to successfully carry out the proposed research project;

(4) consider the viability of avenues for commercial application, including the transfer of technologies to the private and public sector; and

(5) consider such other criteria as are established by the Secretary.

(d) AUTHORIZATION.—There are authorized to be appropriated to the Secretary for carrying out ARPA–E projects—

(1) $100,000,000 for fiscal year 2008;

(2) $125,000,000 for fiscal year 2009;

(3) $150,000,000 for fiscal year 2010;

(4) $275,000,000 for fiscal year 2011; and

(5) $100,000,000 for fiscal year 2012.

(e) PERSONNEL.—

(1) HIRING OF PERSONNEL.—The Secretary shall carry out a program of experimental use of special personnel management authority in order to facilitate recruitment of eminent experts in science or engineering for ARPA–E projects.

(2) SPECIAL PERSONNEL MANAGEMENT AUTHORITY.—Under such program the Secretary may utilize the hiring and management authorities described in section 1101(b), (c), and (d) of the Strom Thurmond National Defense Authorization Act for

Fiscal Year 1999 (5 U.S.C. 3104 note), except that—

(A) for purposes of subsection (b)(1), the number of positions that may be appointed shall be no more than 20; and

(B) for purposes of subsection (c), the term of initial appointments for employees may not exceed 3 years.

(f) PROTECTION OF INFORMATION.—

(1) IN GENERAL.—Disclosure of information that is submitted to the Department of Energy under a competitive or noncompetitive process pursuant to the authority granted in this section is not required under section 552 of title 5, United States Code, for five years after the date on which the information is received by the Department of Energy. Such information includes—

(A) a proposal, proposal abstract, and supporting documents;

(B) a business plan submitted on a confidential basis; or

(C) technical information submitted on a confidential basis.

(2) PROJECT INFORMATION.—The Secretary, for a period of up to five years from the receipt by

the Department of information that results from any transaction identified as an ARPA–E project, and which is of a character that it would be protected from disclosure under the meaning of section 552(b)(4) of title 5, United States Code, if the information had been obtained from a non-Government party, may provide appropriate protections against the dissemination of such information, including exemption from subchapter II of chapter 5 of title 5, United States Code.

(g) COST SHARING.—Any transaction authorized by this section shall be cost shared according to the principles set forth in section 988 of the Energy Policy Act of 2005 (42 U.S.C. 16352).

(h) COORDINATION WITH OTHER AGENCIES.—The Secretary may coordinate program activities associated with an ARPA–E project with other agencies, and may enter into agreements with other agencies to further the success of an ARPA–E project. Where appropriate the Secretary shall coordinate technology transfer efforts with the Technology Transfer Coordinator established in section 1001 of the Energy Policy Act of 2005.

(i) AWARD OF PRIZE MONEY.—To the extent considered appropriate by the Secretary, the Secretary may exercise the authority provided in section 1008 of the Energy

Policy Act of 2005 (42 U.S.C. 16396) to award prizes for achievements under an ARPA–E project.

(j) RELATIONSHIP TO OTHER AUTHORITIES.—The authorities granted by this section are in addition to existing authorities granted to the Secretary, and are not intended to supersede or modify any existing authorities.

(k) ISSUANCE OF DIRECTIVE.—Not later than 120 days after the date of enactment of this Act, the Department of Energy shall issue a Directive that sets forth how the Department intends to identify, manage, and administer ARPA–E projects.

(l) INITIAL PROJECTS.—Not later than 270 days after the date of enactment of this Act, the Secretary shall designate up to 2 ARPA–E projects for funding.

(m) REPORT TO CONGRESS.—Not later than one year after the date of enactment of this Act, the Secretary shall submit a report to Congress describing the status of any proposed or existing ARPA–E projects.

(n) POSITIVE RECOMMENDATION.—The Secretary shall take no actions under this section unless the study conducted under section 1821(b)(3) of the Energy Policy Act of 2005 contains a recommendation that the management practices used by the Defense Advanced Research Projects Agency are applicable to the research programs at the Department of Energy.

TITLE VII—GREEN ENERGY EDUCATION

SEC. 701. SHORT TITLE.

This title may be cited as the ''Green Energy Education Act of 2007''.

SEC. 702. DEFINITION.

For the purposes of this title:

(1) DIRECTOR.—The term ''Director'' means the Director of the National Science Foundation.

(2) HIGH PERFORMANCE BUILDING.—The term ''high performance building'' has the meaning given that term in section 914(a) of the Energy Policy Act of 2005 (42 U.S.C. 16194(a)).

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

SEC. 703. GRADUATE TRAINING IN ENERGY RESEARCH AND DEVELOPMENT.

(a) FUNDING.—In carrying out research, development, demonstration, and commercial application activities authorized for the Department of Energy, the Secretary may contribute funds to the National Science Foundation for the Integrative Graduate Education and Research Traineeship program to support projects that enable graduate education related to such activities.

(b) CONSULTATION.—The Director shall consult with the Secretary when preparing solicitations and awarding grants for projects described in subsection (a).

SEC. 704. CURRICULUM DEVELOPMENT FOR HIGH PERFORMANCE BUILDING DESIGN.

(a) FUNDING.—In carrying out advanced energy technology research, development, demonstration, and commercial application activities authorized for the Department of Energy related to high performance buildings, the Secretary may contribute funds to curriculum development activities at the National Science Foundation for the purpose of improving undergraduate or graduate interdisciplinary engineering and architecture education related to the design and construction of high performance buildings, including development of curricula, of laboratory activities, of training practicums, or of design projects. A primary goal of curriculum development activities supported under this section shall be to improve the ability of engineers, architects, landscape architects, and planners to work together on the incorporation of advanced energy technologies during the design and construction of high performance buildings.

(b) CONSULTATION.—The Director shall consult with the Secretary when preparing solicitations and awarding grants for projects described in subsection (a).

(c) PRIORITY.—In awarding grants with respect to which the Secretary has contributed funds under this section, the Director shall give priority to applications from departments, programs, or centers of a school of engineering that are partnered with schools, departments, or programs of design, architecture, and city, regional, or urban planning.

TITLE VIII—CARBON CAPTURE AND SEQUESTRATION

SEC. 801. CARBON CAPTURE AND SEQUESTRATION STUDY.

Not later than 2 years after the date of enactment of this Act, the Secretary of Energy shall transmit to the Congress the results of a study on the feasibility of large-scale biological sequestration of carbon dioxide for coal power systems, including an analysis of the feasibility of creating a closed loop carbon cycle through biological sequestration.

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