AMERICA COMPETES ACT

Public Law 110–69
110th Congress

An Act

Aug. 9, 2007
[H.R. 2272]

To invest in innovation through research and development, and to improve the competitiveness of the United States.

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

America COMPETES Act. 20 USC 9801 note.

SECTION 1. SHORT TITLE.

This Act may be cited as the "America COMPETES Act" or the "America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act".

SEC. 2. TABLE OF CONTENTS.

The table of contents of this Act is as follows:

TITLE V—DEPARTMENT OF ENERGY

Protecting America's Competitive Edge Through Energy Act.
42 USC 15801 note.

SEC. 5001. SHORT TITLE.

This title may be cited as the "Protecting America's Competitive Edge Through Energy Act" or the "PACE–Energy Act".

42 USC 16531.

SEC. 5002. DEFINITIONS.

In this title:

(1) DEPARTMENT.—The term "Department" means the Department of Energy.

(2) INSTITUTION OF HIGHER EDUCATION.—The term "institution of higher education" has the meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(3) NATIONAL LABORATORY.—The term "National Laboratory" has the meaning given the term in section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801).

(4) SECRETARY.—The term "Secretary" means the Secretary of Energy.

SEC. 5003. SCIENCE, ENGINEERING, AND MATHEMATICS EDUCATION AT THE DEPARTMENT OF ENERGY.

(a) SCIENCE EDUCATION PROGRAMS.—Section 3164 of the Department of Energy Science Education Enhancement Act (42 U.S.C. 7381a) is amended—

(1) by redesignating subsections (b), (c), and (d) as subsections (c), (d), and (f), respectively;

(2) by inserting after subsection (a) the following:

"(b) ORGANIZATION OF SCIENCE, ENGINEERING, AND MATHEMATICS EDUCATION PROGRAMS.—

"(1) DIRECTOR OF SCIENCE, ENGINEERING, AND MATHEMATICS EDUCATION.—Notwithstanding any other provision of law, the Secretary, acting through the Under Secretary for Science (referred to in this subsection as the 'Under Secretary'), shall appoint a Director of Science, Engineering, and Mathematics Education (referred to in this subsection as the 'Director') with the principal responsibility for administering science, engineering, and mathematics education programs across all functions of the Department.

"(2) QUALIFICATIONS.—The Director shall be an individual, who by reason of professional background and experience, is specially qualified to advise the Under Secretary on all matters pertaining to science, engineering, and mathematics education at the Department.

"(3) DUTIES.—The Director shall—

"(A) oversee all science, engineering, and mathematics education programs of the Department;

"(B) represent the Department as the principal interagency liaison for all science, engineering, and mathematics education programs, unless otherwise represented by the Secretary or the Under Secretary;

"(C) prepare the annual budget and advise the Under Secretary on all budgetary issues for science, engineering, and mathematics education programs of the Department; Budget.

"(D) increase, to the maximum extent practicable, the participation and advancement of women and underrepresented minorities at every level of science, technology, engineering, and mathematics education; and

"(E) perform other such matters relating to science, engineering, and mathematics education as are required by the Secretary or the Under Secretary.

"(4) STAFF AND OTHER RESOURCES.—The Secretary shall assign to the Director such personnel and other resources as the Secretary considers necessary to permit the Director to carry out the duties of the Director.

"(5) ASSESSMENT.—

"(A) IN GENERAL.—The Secretary shall offer to enter into a contract with the National Academy of Sciences under which the National Academy, not later than 5 years after, and not later than 10 years after, the date of enactment of this paragraph, shall assess the performance of Contracts. Deadlines.

the science, engineering, and mathematics education programs of the Department.

"(B) CONSIDERATIONS.—An assessment under this paragraph shall be conducted taking into consideration, where applicable, the effect of science, engineering, and mathematics education programs of the Department on student academic achievement in science and mathematics.

"(6) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated such sums as are necessary to carry out this subsection."; and

(3) by striking subsection (d) (as redesignated by paragraph (1)) and inserting the following:

"(d) SCIENCE, ENGINEERING, AND MATHEMATICS EDUCATION FUND.—The Secretary shall establish a Science, Engineering, and Mathematics Education Fund, using not less than 0.3 percent of the amount made available to the Department for research, development, demonstration, and commercial application for each fiscal year, to carry out sections 3165, 3166, and 3167.

Reports.

"(e) ANNUAL PLAN FOR ALLOCATION OF EDUCATION FUNDING.—The Secretary shall submit to Congress as part of the annual budget submission for a fiscal year a report describing the manner in which the Department has complied with subsection (d) for the prior fiscal year and the manner in which the Department proposes to comply with subsection (d) during the following fiscal year, including—

"(1) the total amount of funding for research, development, demonstration, and commercial application activities for the corresponding fiscal year;

"(2) the amounts set aside for the Science, Engineering, and Mathematics Education Fund under subsection (d) from funding for research activities, development activities, demonstration activities, and commercial application activities for the corresponding fiscal year; and

"(3) a description of how the funds set aside under subsection (d) were allocated for the prior fiscal year and will be allocated for the following fiscal year.".

42 USC 7381g note.

(b) CONSULTATION.—The Secretary shall—

(1) consult with the Secretary of Education and the Director of the National Science Foundation regarding activities authorized under subpart B of the Department of Energy Science Education Enhancement Act (as added by subsection (d)(3)) to improve science and mathematics education; and

(2) otherwise make available to the Secretary of Education reports associated with programs authorized under that section.

(c) DEFINITION.—Section 3168 of the Department of Energy Science Education Enhancement Act (42 U.S.C. 7381d) is amended by adding at the end the following:

"(5) NATIONAL LABORATORY.—The term 'National Laboratory' has the meaning given the term in section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801).".

(d) SCIENCE, ENGINEERING, AND MATHEMATICS EDUCATION PROGRAMS.—The Department of Energy Science Education Enhancement Act (42 U.S.C. 7381 et seq.) is amended—

(1) by inserting after section 3162 (42 U.S.C. 7381) the following:

"Subpart A—Science Education Enhancement";

(2) in section 3169 (42 U.S.C. 7381e), by striking "part" and inserting "subpart"; and

(3) by adding at the end the following:

"Subpart B—Science, Engineering, and Mathematics Education Programs

"SEC. 3170. DEFINITIONS. 42 USC 7381g.

"In this subpart:

"(1) DIRECTOR.—The term 'Director' means the Director of Science, Engineering, and Mathematics Education.

"(2) NATIONAL LABORATORY.—The term 'National Laboratory' has the meaning given the term in section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801).

"CHAPTER 1—PILOT PROGRAM OF GRANTS TO SPECIALTY SCHOOLS FOR SCIENCE AND MATHEMATICS

Intergovernmental relations.

"SEC. 3171. PILOT PROGRAM OF GRANTS TO SPECIALTY SCHOOLS FOR SCIENCE AND MATHEMATICS. 42 USC 7381h.

"(a) PURPOSE.—The purpose of this section is to establish a pilot program of grants to States to help establish or expand public, statewide specialty secondary schools that provide comprehensive science and mathematics (including technology and engineering) education to improve the academic achievement of students in science and mathematics.

"(b) DEFINITION OF SPECIALTY SCHOOL FOR SCIENCE AND MATHEMATICS.—In this chapter, the term 'specialty school for science and mathematics' means a public secondary school (including a school that provides residential services to students) that—

"(1) serves students residing in the State in which the school is located; and

"(2) offers to those students a high-quality, comprehensive science and mathematics (including technology and engineering) curriculum designed to improve the academic achievement of students in science and mathematics.

"(c) PILOT PROGRAM AUTHORIZED.—

"(1) IN GENERAL.—From the amounts authorized under subsection (i), the Secretary, acting through the Director and in consultation with the Director of the National Science Foundation, shall award grants, on a competitive basis, to States in order to provide assistance to the States for the costs of establishing or expanding public, statewide specialty schools for science and mathematics.

"(2) RESOURCES.—The Director shall ensure that appropriate resources of the Department, including the National Laboratories, are available to schools funded under this section in order to—

"(A) increase experiential, hands-on learning opportunities in science, technology, engineering, and mathematics for students attending such schools; and

"(B) provide ongoing professional development opportunities for teachers employed at such schools.

"(3) ASSISTANCE.—Consistent with sections 3165 and 3166, the Director shall make available from funds authorized in this section to carry out a program using scientific and engineering staff of the National Laboratories, during which the staff—

"(A) assists teachers in teaching courses at the schools funded under this section;

"(B) uses National Laboratory scientific equipment in teaching the courses; and

"(C) uses distance education and other technologies to provide assistance described in subparagraphs (A) and (B) to schools funded under this section that are not located near the National Laboratories.

"(4) RESTRICTIONS.—

"(A) MAXIMUM NUMBER OF FUNDED SPECIALTY SCHOOLS PER STATE.—No State shall receive funding for more than 1 specialty school for science and mathematics for a fiscal year.

"(B) MAXIMUM AMOUNT AND DURATION OF GRANTS.—A grant awarded to a State for a specialty school for science and mathematics under this section—

"(i) shall not exceed $2,000,000 for a fiscal year; and

"(ii) shall not be provided for more than 3 fiscal years.

"(d) FEDERAL AND NON-FEDERAL SHARES.—

"(1) FEDERAL SHARE.—The Federal share of the costs described in subsection (c)(1) shall not exceed 33 percent.

"(2) NON-FEDERAL SHARE.—The non-Federal share of the costs described in subsection (c)(1) shall be—

"(A) not less than 67 percent; and

"(B) provided from non-Federal sources, in cash or in kind, fairly evaluated, including services.

"(e) APPLICATION.—To be eligible to receive a grant under this section, a State shall submit to the Director an application at such time, in such manner, and containing such information as the Director may require that describes—

"(1) the process by which and selection criteria with which the State will select and designate a school as a specialty school for science and mathematics in accordance with this section;

"(2) how the State will ensure that funds made available under this section are used to establish or expand a specialty school for science and mathematics—

"(A) in accordance with the activities described in subsection (g); and

"(B) that has the capacity to improve the academic achievement of all students in all core academic subjects, and particularly in science and mathematics;

"(3) how the State will measure the extent to which the school increases student academic achievement on State academic achievement standards in science, mathematics, and, to the maximum extent applicable, technology and engineering;

"(4) the curricula and materials to be used in the school;

"(5) the availability of funds from non-Federal sources for the costs of the activities authorized under this section; and

"(6) how the State will use technical assistance and support from the Department, including the National Laboratories, and other entities with experience and expertise in science, technology, engineering, and mathematics education, including institutions of higher education.

"(f) DISTRIBUTION.—In awarding grants under this section, the Director shall—

"(1) ensure a wide, equitable distribution among States that propose to serve students from urban and rural areas; and

"(2) provide equal consideration to States without National Laboratories.

"(g) USES OF FUNDS.—

"(1) REQUIREMENT.—A State that receives a grant under this section shall use the funds made available through the grant to—

"(A) employ proven strategies and methods for improving student learning and teaching in science, technology, engineering, and mathematics;

"(B) integrate into the curriculum of the school comprehensive science and mathematics education, including instruction and assessments in science, mathematics, and to the extent applicable, technology and engineering that are aligned with the academic content and student academic achievement standards of the State, within the meaning of section 1111 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6311);

"(C) create opportunities for enhanced and ongoing professional development for teachers that improves the science, technology, engineering, and mathematics content knowledge of the teachers; and

"(D) design and implement hands-on laboratory experiences to help prepare students to pursue postsecondary studies in science, technology, engineering, and mathematics fields.

"(2) SPECIAL RULE.—Grant funds under this section may be used for activities described in paragraph (1) only if the activities are directly relating to improving student academic achievement in science, mathematics, and to the extent applicable, technology and engineering.

"(h) EVALUATION AND REPORT.—

"(1) STATE EVALUATION AND REPORT.—

"(A) EVALUATION.—Each State that receives a grant under this section shall develop and carry out an evaluation and accountability plan for the activities funded through the grant that measures the impact of the activities, including measurable objectives for improved student academic achievement on State science, mathematics, and, to the maximum extent applicable, technology and engineering assessments.

"(B) REPORT.—The State shall submit to the Director a report containing the results of the evaluation and accountability plan.

"(2) REPORT TO CONGRESS.—Not later than 2 years after the date of enactment of the PACE–Energy Act, the Director shall submit a report detailing the impact of the activities assisted with funds made available under this section to—

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

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

"(C) the Committee on Health, Education, Labor, and Pensions of the Senate.

"(i) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section—

"(1) $14,000,000 for fiscal year 2008;

"(2) $22,500,000 for fiscal year 2009; and

"(3) $30,000,000 for fiscal year 2010.

"CHAPTER 2—EXPERIENTIAL-BASED LEARNING OPPORTUNITIES

42 USC 7381j.

"SEC. 3175. EXPERIENTIAL-BASED LEARNING OPPORTUNITIES.

"(a) INTERNSHIPS AUTHORIZED.—

"(1) IN GENERAL.—From the amounts authorized under subsection (f), the Secretary, acting through the Director, shall establish a summer internship program for middle school and secondary school students that shall—

"(A) provide the students with internships at the National Laboratories;

"(B) promote experiential, hands-on learning in science, technology, engineering, or mathematics; and

"(C) be of at least 2 weeks in duration.

"(2) RESIDENTIAL SERVICES.—The Director may provide residential services to students participating in the internship program authorized under paragraph (1).

"(b) SELECTION CRITERIA.—

"(1) IN GENERAL.—The Director shall establish criteria to determine the sufficient level of academic preparedness necessary for a student to be eligible for an internship under this section.

"(2) PARTICIPATION.—The Director shall ensure the participation of students from a wide distribution of States, including States without National Laboratories.

"(3) STUDENT ACHIEVEMENT.—The Director may consider the academic achievement of middle and secondary school students in determining eligibility under this section, in accordance with paragraphs (1) and (2).

"(c) PRIORITY.—

"(1) IN GENERAL.—The Director shall give priority for an internship under this section to a student who meets the eligibility criteria described in subsection (b) and who attends a school—

"(A)(i) in which not less than 30 percent of the children enrolled in the school are from low-income families; or

"(ii) that is designated with a school locale code of 41, 42, or 43, as determined by the Secretary of Education; and

"(B) for which there is—

"(i) a high percentage of teachers who are not teaching in the academic subject areas or grade levels in which the teachers were trained to teach;

"(ii) a high teacher turnover rate; or

"(iii) a high percentage of teachers with emergency, provisional, or temporary certification or licenses.

"(2) COORDINATION.—The Director shall consult with the Secretary of Education in order to determine whether a student meets the priority requirements of this subsection.

"(d) OUTREACH AND EXPERIENTIAL-BASED PROGRAMS FOR MINORITY STUDENTS.—

"(1) IN GENERAL.—The Secretary, acting through the Director, in cooperation with Hispanic-serving institutions, historically Black colleges and universities, tribally controlled colleges and universities, Alaska Native- and Native Hawaiian-serving institutions, and other minority-serving institutions and nonprofit entities with substantial experience relating to outreach and experiential-based learning projects, shall establish outreach and experiential-based learning programs that will encourage underrepresented minority students in kindergarten through grade 12 to pursue careers in science, engineering, and mathematics.

"(2) COMMUNITY INVOLVEMENT.—The Secretary shall ensure that the programs established under paragraph (1) involve, to the maximum extent practicable—

"(A) participation by parents and educators; and

"(B) the establishment of partnerships with business organizations and appropriate Federal, State, and local agencies.

"(3) DISTRIBUTION.—The Secretary shall ensure that the programs established under paragraph (1) are located in diverse geographic regions of the United States, to the maximum extent practicable.

"(e) EVALUATION AND ACCOUNTABILITY PLAN.—The Director shall develop an evaluation and accountability plan for the activities funded under this chapter that objectively measures the impact of the activities.

"(f) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $7,500,000 for each of fiscal years 2008 through 2010.

"CHAPTER 3—NATIONAL LABORATORIES CENTERS OF EXCELLENCE IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS EDUCATION

"SEC. 3181. NATIONAL LABORATORIES CENTERS OF EXCELLENCE IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS EDUCATION.

42 USC 7381*l*.

"(a) DEFINITION OF HIGH-NEED PUBLIC SECONDARY SCHOOL.—In this section, the term 'high-need public secondary school' means a secondary school—

"(1) with a high concentration of low-income individuals (as defined in section 1707 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6537)); or

"(2) designated with a school locale code of 41, 42, or 43, as determined by the Secretary of Education.

"(b) ESTABLISHMENT.—The Secretary shall establish at each of the National Laboratories a program to support a Center of Excellence in Science, Technology, Engineering, and Mathematics (referred to in this section as a 'Center of Excellence') in at least 1 high-need public secondary school located in the region served

by the National Laboratory to provide assistance in accordance with subsection (f).

"(c) COLLABORATION.—

"(1) IN GENERAL.—To comply with subsection (g), each high-need public secondary school selected as a Center of Excellence and the National Laboratory shall form a partnership with a school, department, or program of education at an institution of higher education.

"(2) NONPROFIT ENTITIES.—The partnership may include a nonprofit entity with demonstrated experience and effectiveness in science or mathematics, as agreed to by other members of the partnership.

"(d) SELECTION.—

"(1) IN GENERAL.—The Secretary, acting through the Director, shall establish criteria to guide the National Laboratories in selecting the sites for Centers of Excellence.

"(2) PROCESS.—A National Laboratory shall select a site for a Center of Excellence through an open, widely-publicized, and competitive process.

"(e) GOALS.—The Secretary shall establish goals and performance assessments for each Center of Excellence authorized under subsection (b).

"(f) ASSISTANCE.—Consistent with sections 3165 and 3166, the Director shall make available necessary assistance for a program established under this section through the use of scientific and engineering staff of a National Laboratory, including the use of staff—

"(1) to assist teachers in teaching a course at a Center of Excellence in Science, Technology, Engineering, and Mathematics; and

"(2) to use National Laboratory scientific equipment in the teaching of the course.

"(g) SPECIAL RULES.—A Center of Excellence in a region shall ensure—

"(1) provision of clinical practicum, student teaching, or internship experiences for science, technology, and mathematics teacher candidates as part of the teacher preparation program of the Center of Excellence;

"(2) provision of supervision and mentoring for teacher candidates in the teacher preparation program; and

"(3) to the maximum extent practicable, provision of professional development for veteran teachers in the public secondary schools in the region.

"(h) EVALUATION.—The Secretary shall consider the results of performance assessments required under subsection (e) in determining the contract award fee of a National Laboratory management and operations contractor.

"(i) PLAN.—The Director shall—

"(1) develop an evaluation and accountability plan for the activities funded under this section that objectively measures the impact of the activities; and

"(2) disseminate information obtained from those measurements.

"(j) NO EFFECT ON SIMILAR PROGRAMS.—Nothing in this section displaces or otherwise affects any similar program being carried out as of the date of enactment of this section at any National Laboratory under any other provision of law.

"CHAPTER 4—SUMMER INSTITUTES

"SEC. 3185. SUMMER INSTITUTES. 42 USC 7381n.

"(a) DEFINITIONS.—In this section:

"(1) ELIGIBLE PARTNER.—The term 'eligible partner' means—

"(A) the science, engineering, or mathematics department at an institution of higher education, acting in coordination with a school, department, or program of education at an institution of higher education that provides training for teachers and principals; or

"(B) a nonprofit entity with expertise in providing professional development for science, technology, engineering, or mathematics teachers.

"(2) SUMMER INSTITUTE.—The term 'summer institute' means an institute, operated during the summer, that—

"(A) is hosted by a National Laboratory or an eligible partner;

"(B) is operated for a period of not less than 2 weeks;

"(C) includes, as a component, a program that provides direct interaction between students and faculty, including personnel of 1 or more National Laboratories who have scientific expertise;

"(D) provides for follow-up training, during the academic year, that is conducted in the classroom; and

"(E) provides hands-on science, technology, engineering, or mathematics laboratory experience for not less than 2 days.

"(b) SUMMER INSTITUTE PROGRAMS AUTHORIZED.—

"(1) PROGRAMS AT THE NATIONAL LABORATORIES.—The Secretary, acting through the Director, shall establish or expand programs of summer institutes at each of the National Laboratories to provide additional training to strengthen the science, technology, engineering, and mathematics teaching skills of teachers employed at public schools for kindergarten through grade 12, in accordance with the activities authorized under paragraphs (3) and (4).

"(2) PROGRAMS WITH ELIGIBLE PARTNERS.—

"(A) IN GENERAL.—The Secretary, acting through the Director, shall identify and provide assistance as described in subparagraph (C) to eligible partners to establish or expand programs of summer institutes that provide additional training to strengthen the science, technology, engineering, and mathematics teaching skills of teachers employed at public schools for kindergarten through grade 12, in accordance with paragraphs (3) and (4).

"(B) SELECTION CRITERIA.—In identifying eligible partners under subparagraph (A), the Secretary shall require that partner institutions describe—

"(i) how the partner institution has the capability to administer the program in accordance with this section, which may include a description of any existing programs at the institution of the applicant that are targeted at education of science and mathematics teachers and the number of teachers graduated annually from the programs; and

"(ii) how the partner institution will assist the National Laboratory in carrying out the activities described in paragraphs (3) and (4).

"(C) ASSISTANCE.—Consistent with sections 3165 and 3166, the Director shall make available funds authorized under this section to carry out a program using scientific and engineering staff of the National Laboratories, during which the staff—

"(i) assists in providing training to teachers at summer institutes; and

"(ii) uses National Laboratory scientific equipment in the training.

"(3) REQUIRED ACTIVITIES.—Funds authorized under this section shall be used for—

"(A) creating opportunities for enhanced and ongoing professional development for teachers that improves the science, technology, engineering, and mathematics content knowledge of the teachers;

"(B) training to improve the ability of science, technology, engineering, and mathematics teachers to translate content knowledge and recent developments in pedagogy into classroom practice, including training to use curricula that are—

"(i) based on scientific research; and

"(ii) aligned with challenging State academic content standards;

"(C) training on the use and integration of technology in the classrooms; and

"(D) supplemental and follow-up professional development activities as described in subsection (a)(2)(D).

"(4) ADDITIONAL USES OF FUNDS.—Funds authorized under this section may be used for—

"(A) training and classroom materials to assist in carrying out paragraph (3);

"(B) expenses associated with scientific and engineering staff at the National Laboratories assisting in providing training to teachers at summer institutes;

"(C) instruction in the use and integration of data and assessments to inform and instruct classroom practice; and

"(D) stipends and travel expenses for teachers participating in the program.

"(c) PRIORITY.—To the maximum extent practicable, the Director shall ensure that each summer institute program authorized under subsection (b) provides training to—

"(1) teachers from a wide range of school districts;

"(2) teachers from high-need school districts; and

"(3) teachers from groups underrepresented in the fields of science, technology, engineering, and mathematics teaching, including women and members of minority groups.

"(d) COORDINATION AND CONSULTATION.—The Director shall consult and coordinate with the Secretary of Education and the Director of the National Science Foundation regarding the implementation of the programs authorized under subsection (b).

"(e) EVALUATION AND ACCOUNTABILITY PLAN.—

"(1) IN GENERAL.—The Director shall develop an evaluation and accountability plan for the activities funded under this section that measures the impact of the activities.

"(2) CONTENTS.—The evaluation and accountability plan shall include—

"(A) measurable objectives to increase the number of science, technology, and mathematics teachers who participate in the summer institutes involved; and

"(B) measurable objectives for improved student academic achievement on State science, mathematics, and to the maximum extent applicable, technology and engineering assessments.

"(3) REPORT TO CONGRESS.—The Secretary shall submit to Congress with the annual budget submission of the Secretary a report on how the activities assisted under this section improve the science, technology, engineering, and mathematics teaching skills of participating teachers.

"(f) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section—

"(1) $15,000,000 for fiscal year 2008;

"(2) $20,000,000 for fiscal year 2009; and

"(3) $25,000,000 for fiscal year 2010.

"CHAPTER 5—NATIONAL ENERGY EDUCATION DEVELOPMENT

"SEC. 3191. NATIONAL ENERGY EDUCATION DEVELOPMENT. 42 USC 7381p.

"(a) IN GENERAL.—The Secretary, acting through the Director and in consultation with the Director of the National Science Foundation, shall establish a program to coordinate and make available to teachers and students web-based kindergarten through high school science, technology, engineering, and mathematics education resources relating to the science and energy mission of the Department, including existing instruction materials and protocols for classroom laboratory experiments.

"(b) ENERGY EDUCATION.—The materials and other resources required under subsection (a) shall include instruction relating to—

"(1) the science of energy;

"(2) the sources of energy;

"(3) the uses of energy in society; and

"(4) the environmental consequences and benefits of all energy sources and uses.

"(c) DISSEMINATION.—The Secretary, acting through the Director, shall take all steps necessary, such as through participation in education association conferences, to advertise the program authorized under this section to K–12 teachers and science education coordinators across the United States.

"(d) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section—

"(1) $500,000 for fiscal year 2008; and

"(2) such sums as necessary for each fiscal year thereafter.

"CHAPTER 6—ADMINISTRATION

"SEC. 3195. MENTORING PROGRAM. 42 USC 7381r.

"(a) IN GENERAL.—As part of the programs established under chapters 1, 3, and 4, the Director shall establish a program to

recruit and provide mentors for women and underrepresented minorities who are interested in careers in science, engineering, and mathematics.

"(b) PAIRING.—The program shall pair mentors with women and minorities who are in programs of study at specialty schools for science and mathematics, Centers of Excellence, and summer institutes established under chapters 1, 3, and 4, respectively.

Reports.

"(c) PROGRAM EVALUATION.—The Secretary shall annually—

"(1) use metrics to evaluate the success of the programs established under subsection (a); and

"(2) submit to Congress a report that describes the results of each evaluation.".

42 USC 16532.

SEC. 5004. NUCLEAR SCIENCE TALENT EXPANSION PROGRAM FOR INSTITUTIONS OF HIGHER EDUCATION.

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

(1) to address the decline in the number of and resources available to nuclear science programs at institutions of higher education; and

(2) to increase the number of graduates with degrees in nuclear science, an area of strategic importance to the economic competitiveness and energy security of the United States.

(b) DEFINITION OF NUCLEAR SCIENCE.—In this section, the term "nuclear science" includes—

(1) nuclear science;

(2) nuclear engineering;

(3) nuclear chemistry;

(4) radio chemistry; and

(5) health physics.

(c) ESTABLISHMENT.—The Secretary shall establish, in accordance with this section, a program to expand and enhance institution of higher education nuclear science educational capabilities.

(d) NUCLEAR SCIENCE PROGRAM EXPANSION GRANTS FOR INSTITUTIONS OF HIGHER EDUCATION.—

(1) IN GENERAL.—The Secretary shall award up to 3 competitive grants for each fiscal year to institutions of higher education that establish new academic degree programs in nuclear science.

(2) PRIORITY.—In evaluating grants under this subsection, the Secretary shall give priority to proposals that involve partnerships with a National Laboratory or other eligible nuclear-related entity, as determined by the Secretary.

(3) CRITERIA.—Criteria for a grant awarded under this subsection shall be based on—

(A) the potential to attract new students to the program;

(B) academic rigor; and

(C) the ability to offer hands-on learning opportunities.

(4) DURATION AND AMOUNT.—

(A) DURATION.—A grant under this subsection may be up to 5 years in duration.

(B) AMOUNT.—An institution of higher education that receives a grant under this subsection shall be eligible for up to $1,000,000 for each year of the grant period.

(5) USE OF FUNDS.—An institution of higher education that receives a grant under this subsection may use the grant to—

(A) recruit and retain new faculty;

(B) develop core and specialized course content;

(C) encourage collaboration between faculty and researchers in the nuclear science field; and

(D) support outreach efforts to recruit students.

(e) NUCLEAR SCIENCE COMPETITIVENESS GRANTS FOR INSTITUTIONS OF HIGHER EDUCATION.—

(1) IN GENERAL.—The Secretary shall award up to 5 competitive grants for each fiscal year to institutions of higher education with existing academic degree programs that produce graduates in nuclear science.

(2) CRITERIA.—Criteria for a grant awarded under this subsection shall be based on the potential for increasing the number and academic quality of graduates in the nuclear sciences who enter into careers in nuclear-related fields.

(3) DURATION AND AMOUNT.—

(A) DURATION.—A grant under this subsection may be up to 5 years in duration.

(B) AMOUNT.—An institution of higher education that receives a grant under this subsection shall be eligible for up to $500,000 for each year of the grant period.

(4) USE OF FUNDS.—An institution of higher education that receives a grant under this subsection may use the grant to—

(A) increase the number of graduates in nuclear science that enter into careers in the nuclear science field;

(B) enhance the teaching of advanced nuclear technologies;

(C) aggressively pursue collaboration opportunities with industry and National Laboratories;

(D) bolster or sustain nuclear infrastructure and research facilities of the institution of higher education, such as research and training reactors or laboratories; and

(E) provide tuition assistance and stipends to undergraduate and graduate students.

(f) AUTHORIZATION OF APPROPRIATIONS.—

(1) NUCLEAR SCIENCE PROGRAM EXPANSION GRANTS FOR INSTITUTIONS OF HIGHER EDUCATION.—There are authorized to be appropriated to carry out subsection (d)—

(A) $3,500,000 for fiscal year 2008;

(B) $6,500,000 for fiscal year 2009; and

(C) $9,500,000 for fiscal year 2010.

(2) NUCLEAR SCIENCE COMPETITIVENESS GRANTS FOR INSTITUTIONS OF HIGHER EDUCATION.—There are authorized to be appropriated to carry out subsection (e)—

(A) $3,000,000 for fiscal year 2008;

(B) $5,500,000 for fiscal year 2009; and

(C) $8,000,000 for fiscal year 2010.

SEC. 5005. HYDROCARBON SYSTEMS SCIENCE TALENT EXPANSION PROGRAM FOR INSTITUTIONS OF HIGHER EDUCATION. 42 USC 16533.

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

(1) to address the decline in the number of and resources available to hydrocarbon systems science programs at institutions of higher education; and

(2) to increase the number of graduates with degrees in hydrocarbon systems science, an area of strategic importance to the economic competitiveness and energy security of the United States.

(b) DEFINITION OF HYDROCARBON SYSTEMS SCIENCE.—In this section:

(1) IN GENERAL.—The term "hydrocarbon systems science" means a science involving natural gas or other petroleum exploration, development, or production.

(2) INCLUSIONS.—The term "hydrocarbon systems science" includes—

(A) petroleum or reservoir engineering;

(B) environmental geoscience;

(C) petrophysics;

(D) geophysics;

(E) geochemistry;

(F) petroleum geology;

(G) ocean engineering;

(H) environmental engineering; and

(I) computer science, as computer science relates to a science described in this subsection.

(c) ESTABLISHMENT.—The Secretary shall establish, in accordance with this section, a program to expand and enhance institution of higher education hydrocarbon systems science educational capabilities.

(d) HYDROCARBON SYSTEMS SCIENCE PROGRAM EXPANSION GRANTS FOR INSTITUTIONS OF HIGHER EDUCATION.—

(1) IN GENERAL.—The Secretary shall award up to 3 competitive grants for each fiscal year to institutions of higher education that establish new academic degree programs in hydrocarbon systems science.

(2) ELIGIBILITY.—In evaluating grants under this subsection, the Secretary shall give priority to proposals that involve partnerships with the National Laboratories, including the National Energy Technology Laboratory, or other hydrocarbon systems scientific entities, as determined by the Secretary.

(3) CRITERIA.—Criteria for a grant awarded under this subsection shall be based on—

(A) the potential to attract new students to the program;

(B) academic rigor; and

(C) the ability to offer hands-on learning opportunities.

(4) DURATION AND AMOUNT.—

(A) DURATION.—A grant under this subsection may be up to 5 years in duration.

(B) AMOUNT.—An institution of higher education that receives a grant under this subsection shall be eligible for up to $1,000,000 for each year of the grant period.

(5) USE OF FUNDS.—An institution of higher education that receives a grant under this subsection may use the grant to—

(A) recruit and retain new faculty;

(B) develop core and specialized course content;

(C) encourage collaboration between faculty and researchers in the hydrocarbon systems science field; and

(D) support outreach efforts to recruit students.

(e) HYDROCARBON SYSTEMS SCIENCE COMPETITIVENESS GRANTS FOR INSTITUTIONS OF HIGHER EDUCATION.—

(1) IN GENERAL.—The Secretary shall award up to 5 competitive grants for each fiscal year to institutions of higher

education with existing academic degree programs that produce graduates in hydrocarbon systems science.

(2) CRITERIA.—Criteria for a grant awarded under this subsection shall be based on the potential for increasing the number and academic quality of graduates in hydrocarbon systems sciences who enter into careers in natural gas and other petroleum exploration, development, and production related fields.

(3) DURATION AND AMOUNT.—

(A) DURATION.—A grant under this subsection may be up to 5 years in duration.

(B) AMOUNT.—An institution of higher education that receives a grant under this subsection shall be eligible for up to $500,000 for each year of the grant period.

(4) USE OF FUNDS.—An institution of higher education that receives a grant under this subsection may use the grant to—

(A) increase the number of graduates in the hydrocarbon systems sciences that enter into careers in the natural gas and other petroleum exploration, development, and production science fields;

(B) enhance the teaching of advanced natural gas and other petroleum exploration, development, and production technologies;

(C) aggressively pursue collaboration opportunities with industry and the National Laboratories, including the National Energy Technology Laboratory;

(D) bolster or sustain natural gas and other petroleum exploration, development, and production infrastructure and research facilities of the institution of higher education, such as research and training or laboratories; and

(E) provide tuition assistance and stipends to undergraduate and graduate students.

(f) AUTHORIZATION OF APPROPRIATIONS.—

(1) HYDROCARBON SYSTEMS SCIENCE PROGRAM EXPANSION GRANTS FOR INSTITUTIONS OF HIGHER EDUCATION.—There are authorized to be appropriated to carry out subsection (d)—

(A) $3,500,000 for fiscal year 2008;

(B) $6,500,000 for fiscal year 2009; and

(C) $9,500,000 for fiscal year 2010.

(2) HYDROCARBON SYSTEMS SCIENCE COMPETITIVENESS GRANTS FOR INSTITUTIONS OF HIGHER EDUCATION.—There are authorized to be appropriated to carry out subsection (e)—

(A) $3,000,000 for fiscal year 2008;

(B) $5,500,000 for fiscal year 2009; and

(C) $8,000,000 for fiscal year 2010.

SEC. 5006. DEPARTMENT OF ENERGY EARLY CAREER AWARDS FOR SCIENCE. ENGINEERING, AND MATHEMATICS RESEARCHERS.

42 USC 16534.

(a) GRANT AWARDS.—The Director of the Office of Science of the Department (referred to in this section as the "Director") shall carry out a program to award grants to scientists and engineers at an early career stage at institutions of higher education and organizations described in subsection (c) to conduct research in fields relevant to the mission of the Department.

(b) AMOUNT AND DURATION.—

(1) AMOUNT.—The amount of a grant awarded under this section shall be—

(A) not less than $80,000; and

(B) not more than $125,000.

(2) DURATION.—The term of a grant awarded under this section shall be not more than 5 years.

(c) ELIGIBILITY.—

(1) IN GENERAL.—To be eligible to receive a grant under this section, an individual shall, as determined by the Director—

(A) subject to paragraph (2), have completed a doctorate or other terminal degree not more than 10 years before the date on which the proposal for a grant is submitted under subsection (e)(1);

(B) have demonstrated promise in a science, engineering, or mathematics field relevant to the missions of the Department; and

(C) be employed—

(i) in a tenure track-position as an assistant professor or equivalent title at an institution of higher education in the United States;

(ii) at an organization in the United States that is a nonprofit, nondegree-granting research organization such as a museum, observatory, or research laboratory; or

(iii) as a scientist at a National Laboratory.

(2) WAIVER.—Notwithstanding paragraph (1)(A), the Director may determine that an individual who has completed a doctorate more than 10 years before the date of submission of a proposal under subsection (e)(1) is eligible to receive a grant under this section if the individual was unable to conduct research for a period of time because of extenuating circumstances, including military service or family responsibilities, as determined by the Director.

(d) SELECTION.—Grant recipients shall be selected on a competitive, merit-reviewed basis.

(e) SELECTION PROCESS AND CRITERIA.—

(1) PROPOSAL.—To be eligible to receive a grant under this section, an individual shall submit to the Director a proposal at such time, in such manner, and containing such information as the Director may require.

(2) EVALUATION.—In evaluating the proposals submitted under paragraph (1), the Director shall take into consideration, at a minimum—

(A) the intellectual merit of the proposed project;

(B) the innovative or transformative nature of the proposed research;

(C) the extent to which the proposal integrates research and education, including undergraduate education in science and engineering disciplines; and

(D) the potential of the applicant for leadership at the frontiers of knowledge.

(f) DIVERSITY REQUIREMENT.—

(1) IN GENERAL.—In awarding grants under this section, the Director shall endeavor to ensure that the grant recipients represent a variety of types of institutions of higher education and nonprofit, nondegree-granting research organizations.

(2) REQUIREMENT.—In support of the goal described in paragraph (1), the Director shall broadly disseminate information regarding the deadlines applicable to, and manner in which to submit, proposals for grants under this section, including by conducting outreach activities for—

(A) part B institutions, as defined in section 322 of the Higher Education Act of 1965 (20 U.S.C. 1061); and

(B) minority institutions, as defined in section 365 of that Act (20 U.S.C. 1067k).

(g) REPORT ON RECRUITING AND RETAINING EARLY CAREER SCIENCE AND ENGINEERING RESEARCHERS AT NATIONAL LABORATORIES.—

(1) IN GENERAL.—Not later than 90 days after the date of enactment of this Act, the Director shall submit to the Committee on Science and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report describing efforts of the Director to recruit and retain young scientists and engineers at early career stages at the National Laboratories.

(2) INCLUSIONS.—The report under paragraph (1) shall include—

(A) a description of applicable Department and National Laboratory policies and procedures, including policies and procedures relating to financial incentives, awards, promotions, time reserved for independent research, access to equipment or facilities, and other forms of recognition, designed to attract and retain young scientists and engineers;

(B) an evaluation of the impact of the incentives described in subparagraph (A) on—

(i) the careers of young scientists and engineers at the National Laboratories; and

(ii) the quality of the research at the National Laboratories and in Department programs;

(C) a description of barriers, if any, that exist with respect to efforts to recruit and retain young scientists and engineers, including the limited availability of full-time equivalent positions, legal and procedural requirements, and pay grading systems; and

(D) the amount of funding devoted to efforts to recruit and retain young researchers, and the source of the funds.

(h) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary, acting through the Director, to carry out this section $25,000,000 for each of fiscal years 2008 through 2010.

SEC. 5007. AUTHORIZATION OF APPROPRIATIONS FOR DEPARTMENT OF ENERGY FOR BASIC RESEARCH.

Section 971(b) of the Energy Policy Act of 2005 (42 U.S.C. 16311(b)) is amended—

(1) in paragraph (2), by striking "and" at the end;

(2) in paragraph (3), by striking the period at the end and inserting "; and"; and

(3) by adding at the end the following:

"(4) $5,814,000,000 for fiscal year 2010.".

42 USC 16535.

SEC. 5008. DISCOVERY SCIENCE AND ENGINEERING INNOVATION INSTITUTES.

Establishment.

(a) IN GENERAL.—The Secretary shall establish distributed, multidisciplinary institutes (referred to in this section as "Institutes") centered at National Laboratories to apply fundamental science and engineering discoveries to technological innovations relating to—

(1) the missions of the Department; and

(2) the global competitiveness of the United States.

(b) TOPICAL AREAS.—The Institutes shall support scientific and engineering research and education activities on critical emerging technologies determined by the Secretary to be essential to global competitiveness, including activities relating to—

(1) sustainable energy technologies;

(2) multiscale materials and processes;

(3) micro- and nano-engineering;

(4) computational and information engineering; and

(5) genomics and proteomics.

(c) PARTNERSHIPS.—In carrying out this section, the Secretary shall establish partnerships between the Institutes and—

(1) institutions of higher education—

(A) to train undergraduate and graduate science and engineering students;

(B) to develop innovative undergraduate and graduate educational curricula; and

(C) to conduct research within the topical areas described in subsection (b); and

(2) private industry to develop innovative technologies within the topical areas described in subsection (b).

(d) GRANTS.—

(1) IN GENERAL.—For each fiscal year, the Secretary may select not more than 3 Institutes to receive a grant under this section.

(2) MERIT-BASED SELECTION.—The selection of Institutes under paragraph (1) shall be—

(A) merit-based; and

(B) made through an open, competitive selection process.

(3) TERM.—An Institute shall receive a grant under this section for not more than 3 fiscal years.

Contracts.
Deadline.
Reports.

(e) REVIEW.—The Secretary shall offer to enter into an agreement with the National Academy of Sciences under which the Academy shall, by not later than 3 years after the date of enactment of this Act—

(1) review the performance of the Institutes under this section; and

(2) submit to Congress and the Secretary a report describing the results of the review.

(f) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to provide grants to each Institute selected under this section $10,000,000 for each of fiscal years 2008 through 2010.

42 USC 16536.

SEC. 5009. PROTECTING AMERICA'S COMPETITIVE EDGE (PACE) GRADUATE FELLOWSHIP PROGRAM.

(a) DEFINITION OF ELIGIBLE STUDENT.—In this section, the term "eligible student" means a student who attends an institution

of higher education that offers a doctoral degree in a field relevant to a mission area of the Department.

(b) ESTABLISHMENT.—The Secretary shall establish a graduate fellowship program for eligible students pursuing a doctoral degree in a mission area of the Department.

(c) SELECTION.—

(1) IN GENERAL.—The Secretary shall award fellowships to eligible students under this section through a competitive merit review process, involving written and oral interviews, that will result in a wide distribution of awards throughout the United States, as determined by the Secretary.

(2) CRITERIA.—The Secretary shall establish selection criteria for awarding fellowships under this section that require an eligible student—

(A) to pursue a field of science or engineering of importance to a mission area of the Department;

(B) to demonstrate to the Secretary—

(i) the capacity of the eligible student to understand technical topics relating to the fellowship that can be derived from the first principles of the technical topics;

(ii) imagination and creativity;

(iii) leadership skills in organizations or intellectual endeavors, demonstrated through awards and past experience; and

(iv) excellent verbal and communication skills to explain, defend, and demonstrate an understanding of technical subjects relating to the fellowship; and

(C) to be a citizen or legal permanent resident of the United States.

(d) AWARDS.—

(1) AMOUNT.—A fellowship awarded under this section shall—

(A) provide an annual living stipend; and

(B) cover—

(i) graduate tuition at an institution of higher education described in subsection (a); and

(ii) incidental expenses associated with curricula and research at the institution of higher education (including books, computers, and software).

(2) DURATION.—A fellowship awarded under this section shall be up to 3 years duration within a 5-year period.

(3) PORTABILITY.—A fellowship awarded under this section shall be portable with the eligible student.

(e) ADMINISTRATION.—The Secretary, acting through the Director of Science, Engineering, and Mathematics Education—

(1) shall administer the program established under this section; and

(2) may enter into a contract with a nonprofit entity to administer the program, including the selection and award of fellowships.

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

(1) $7,500,000 for fiscal year 2008;

(2) $12,000,000 for fiscal year 2009, including nonexpiring fellowships for the preceding fiscal year; and

(3) $20,000,000 for fiscal year 2010, including nonexpiring fellowships for preceding fiscal years.

SEC. 5010. SENSE OF CONGRESS REGARDING CERTAIN RECOMMENDATIONS AND REVIEWS.

It is the sense of Congress that—

(1) the Department of Energy should implement the recommendations contained in the report of the Government Accountability Office numbered 04–639; and

(2) the Secretary of Energy should annually conduct reviews in accordance with title IX of the Education Amendments of 1972 (20 U.S.C. 1681 et seq.) of at least 2 recipients of grants provided by the Department of Energy.

42 USC 16537.

SEC. 5011. DISTINGUISHED SCIENTIST PROGRAM.

(a) PURPOSE.—The purpose of this section is to promote scientific and academic excellence through collaborations between institutions of higher education and National Laboratories.

(b) ESTABLISHMENT.—The Secretary shall establish a program to support the joint appointment of distinguished scientists by institutions of higher education and National Laboratories.

(c) QUALIFICATIONS.—To be eligible for appointment as a distinguished scientist under this section, an individual, by reason of professional background and experience, shall be able to bring international recognition to the appointing institution of higher education or National Laboratory in the field of scientific endeavor of the individual.

(d) SELECTION.—A distinguished scientist appointed under this section shall be selected through an open, competitive process.

(e) APPOINTMENT.—

(1) INSTITUTION OF HIGHER EDUCATION.—An appointment by an institution of higher education under this section shall be filled within the tenure allotment of the institution of higher education, at a minimum rank of professor.

(2) NATIONAL LABORATORY.—An appointment by a National Laboratory under this section shall be at the rank of the highest grade of distinguished scientist or technical staff of the National Laboratory.

(f) DURATION.—An appointment under this section shall—

(1) be for a term of 6 years; and

(2) consist of 2 3-year funding allotments.

(g) USE OF FUNDS.—Funds made available under this section may be used for—

(1) the salary of the distinguished scientist and support staff;

(2) undergraduate, graduate, and post-doctoral appointments;

(3) research-related equipment;

(4) professional travel; and

(5) such other requirements as the Secretary determines to be necessary to carry out the purpose of the program.

(h) REVIEW.—

(1) IN GENERAL.—The appointment of a distinguished scientist under this section shall be reviewed at the end of the first 3-year allotment for the distinguished scientist through an open peer-review process to determine whether the appointment is meeting the purpose of this section under subsection (a).

(2) FUNDING.—Funding of the appointment of the distinguished scientist for the second 3-year allotment shall be determined based on the review conducted under paragraph (1).

(i) COST SHARING.—To be eligible for assistance under this section, an appointing institution of higher education shall pay at least 50 percent of the total costs of the appointment.

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

(1) $15,000,000 for fiscal year 2008;

(2) $20,000,000 for fiscal year 2009; and

(3) $30,000,000 for fiscal year 2010.

SEC. 5012. ADVANCED RESEARCH PROJECTS AGENCY—ENERGY. 42 USC 16538.

(a) DEFINITIONS.—In this section:

(1) ARPA-E.—The term "ARPA–E" means the Advanced Research Projects Agency—Energy established by subsection (b).

(2) DIRECTOR.—The term "Director" means the Director of ARPA-E appointed under subsection (d).

(3) FUND.—The term "Fund" means the Energy Transformation Acceleration Fund established under subsection (m)(1).

(b) ESTABLISHMENT.—There is established the Advanced Research Projects Agency—Energy within the Department to overcome the long-term and high-risk technological barriers in the development of energy technologies.

(c) GOALS.—

(1) IN GENERAL.—The goals of ARPA-E shall be—

(A) to enhance the economic and energy security of the United States through the development of energy technologies that result in—

(i) reductions of imports of energy from foreign sources;

(ii) reductions of energy-related emissions, including greenhouse gases; and

(iii) improvement in the energy efficiency of all economic sectors; and

(B) to ensure that the United States maintains a technological lead in developing and deploying advanced energy technologies.

(2) MEANS.—ARPA-E shall achieve the goals established under paragraph (1) through energy technology projects by—

(A) identifying and promoting revolutionary advances in fundamental sciences;

(B) translating scientific discoveries and cutting-edge inventions into technological innovations; and

(C) accelerating transformational technological advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty.

(d) DIRECTOR.—

(1) APPOINTMENT.—There shall be in the Department of Energy a Director of ARPA-E, who shall be appointed by the President, by and with the advice and consent of the Senate. President.

(2) QUALIFICATIONS.—The Director shall be an individual who, by reason of professional background and experience, is especially qualified to advise the Secretary on, and manage research programs addressing, matters pertaining to long-term

and high-risk technological barriers to the development of energy technologies.

(3) RELATIONSHIP TO SECRETARY.—The Director shall report to the Secretary.

(4) RELATIONSHIP TO OTHER PROGRAMS.—No other programs within the Department shall report to the Director.

(e) RESPONSIBILITIES.—The responsibilities of the Director shall include—

(1) approving all new programs within ARPA-E;

(2) developing funding criteria and assessing the success of programs through the establishment of technical milestones;

(3) administering the Fund through awards to institutions of higher education, companies, research foundations, trade and industry research collaborations, or consortia of such entities, which may include federally-funded research and development centers, to achieve the goals described in subsection (c) through targeted acceleration of—

(A) novel early-stage energy research with possible technology applications;

(B) development of techniques, processes, and technologies, and related testing and evaluation;

(C) research and development of manufacturing processes for novel energy technologies; and

(D) coordination with nongovernmental entities for demonstration of technologies and research applications to facilitate technology transfer; and

(4) terminating programs carried out under this section that are not achieving the goals of the programs.

(f) PERSONNEL.—

(1) PROGRAM MANAGERS.—

(A) IN GENERAL.—The Director shall designate employees to serve as program managers for each of the programs established pursuant to the responsibilities established for ARPA-E under subsection (e).

(B) RESPONSIBILITIES.—A program manager of a program shall be responsible for—

(i) establishing research and development goals for the program, including through the convening of workshops and conferring with outside experts, and publicizing the goals of the program to the public and private sectors;

(ii) soliciting applications for specific areas of particular promise, especially areas that the private sector or the Federal Government are not likely to undertake alone;

(iii) building research collaborations for carrying out the program;

(iv) selecting on the basis of merit, with advice under subsection (j) as appropriate, each of the projects to be supported under the program after considering—

(I) the novelty and scientific and technical merit of the proposed projects;

(II) the demonstrated capabilities of the applicants to successfully carry out the proposed project;

(III) the consideration by the applicant of future commercial applications of the project,

including the feasibility of partnering with 1 or more commercial entities; and

(IV) such other criteria as are established by the Director;

(v) monitoring the progress of projects supported under the program; and

(vi) recommending program restructure or termination of research partnerships or whole projects.

(C) TERM.—The term of a program manager shall be 3 years and may be renewed.

(2) HIRING AND MANAGEMENT.—

(A) IN GENERAL.—The Director shall have the authority to—

(i) make appointments of scientific, engineering, and professional personnel without regard to the civil service laws; and

(ii) fix the compensation of such personnel at a rate to be determined by the Director.

(B) NUMBER.—The Director shall appoint not less than 70, and not more than 120, personnel under this section.

(C) PRIVATE RECRUITING FIRMS.—The Secretary, or the Director serving as an agent of the Secretary, may contract with private recruiting firms for the hiring of qualified technical staff to carry out this section.

(D) ADDITIONAL STAFF.—The Director may use all authorities in existence on the date of enactment of this Act that are provided to the Secretary to hire administrative, financial, and clerical staff as necessary to carry out this section.

(g) REPORTS AND ROADMAPS.—

(1) ANNUAL REPORT.—As part of the annual budget request submitted for each fiscal year, the Director shall provide to the relevant authorizing and appropriations committees of Congress a report describing projects supported by ARPA-E during the previous fiscal year.

(2) STRATEGIC VISION ROADMAP.—Not later than October 1, 2008, and October 1, 2011, the Director shall provide to the relevant authorizing and appropriations committees of Congress a roadmap describing the strategic vision that ARPA-E will use to guide the choices of ARPA-E for future technology investments over the following 3 fiscal years.

(h) COORDINATION AND NONDUPLICATION.—

(1) IN GENERAL.—To the maximum extent practicable, the Director shall ensure that the activities of ARPA-E are coordinated with, and do not duplicate the efforts of, programs and laboratories within the Department and other relevant research agencies.

(2) TECHNOLOGY TRANSFER COORDINATOR.—To the extent appropriate, the Director may coordinate technology transfer efforts with the Technology Transfer Coordinator appointed under section 1001 of the Energy Policy Act of 2005 (42 U.S.C. 16391).

(i) FEDERAL DEMONSTRATION OF TECHNOLOGIES.—The Secretary shall make information available to purchasing and procurement programs of Federal agencies regarding the potential to demonstrate technologies resulting from activities funded through ARPA-E.

(j) ADVICE.—

(1) ADVISORY COMMITTEES.—The Director may seek advice on any aspect of ARPA-E from—

(A) an existing Department of Energy advisory committee; and

(B) a new advisory committee organized to support the programs of ARPA-E and to provide advice and assistance on—

(i) specific program tasks; or

(ii) overall direction of ARPA-E.

(2) ADDITIONAL SOURCES OF ADVICE.—In carrying out this section, the Director may seek advice and review from—

(A) the President's Committee of Advisors on Science and Technology; and

(B) any professional or scientific organization with expertise in specific processes or technologies under development by ARPA-E.

(k) ARPA-E EVALUATION.—

(1) IN GENERAL.—After ARPA-E has been in operation for 4 years, the Secretary shall offer to enter into a contract with the National Academy of Sciences under which the National Academy shall conduct an evaluation of how well ARPA-E is achieving the goals and mission of ARPA-E.

(2) INCLUSIONS.—The evaluation shall include—

(A) the recommendation of the National Academy of Sciences on whether ARPA-E should be continued or terminated; and

(B) a description of lessons learned from operation of ARPA-E.

Public information.

(3) AVAILABILITY.—On completion of the evaluation, the evaluation shall be made available to Congress and the public.

(l) EXISTING AUTHORITIES.—The authorities granted by this section are—

(1) in addition to existing authorities granted to the Secretary; and

(2) are not intended to supersede or modify any existing authorities.

(m) FUNDING.—

(1) FUND.—There is established in the Treasury of the United States a fund, to be known as the "Energy Transformation Acceleration Fund", which shall be administered by the Director for the purposes of carrying out this section.

(2) AUTHORIZATION OF APPROPRIATIONS.—Subject to paragraphs (4) and (5), there are authorized to be appropriated to the Director for deposit in the Fund, without fiscal year limitation—

(A) $300,000,000 for fiscal year 2008; and

(B) such sums as are necessary for each of fiscal years 2009 and 2010.

(3) SEPARATE BUDGET AND APPROPRIATION.—

(A) BUDGET REQUEST.—The budget request for ARPA-E shall be separate from the rest of the budget of the Department.

(B) APPROPRIATIONS.—Appropriations to the Fund shall be separate and distinct from the rest of the budget for the Department.

(4) LIMITATION.—No amounts may be appropriated for ARPA-E for fiscal year 2008 unless the amount appropriated

for the activities of the Office of Science of the Department for fiscal year 2008 exceeds the amount appropriated for the Office for fiscal year 2007, as adjusted for inflation in accordance with the Consumer Price Index published by the Bureau of Labor Statistics of the Department of Labor.

(5) ALLOCATION.—Of the amounts appropriated for a fiscal year under paragraph (2)—

(A) not more than 50 percent of the amount shall be used to carry out subsection (e)(3)(D);

(B) at least 2.5 percent of the amount shall be used for technology transfer and outreach activities; and

(C) no funds may be used for construction of new buildings or facilities during the 5-year period beginning on the date of enactment of this Act.