

**(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;
- (3) \$30,000,000 for fiscal year 2010;
- (4) \$31,000,000 for fiscal year 2011;
- (5) \$32,000,000 for fiscal year 2012; and
- (6) \$33,000,000 for fiscal year 2013.

(Pub. L. 110-69, title V, § 5011, Aug. 9, 2007, 121 Stat. 620; Pub. L. 111-358, title IX, § 902(e), Jan. 4, 2011, 124 Stat. 4045.)

## AMENDMENTS

2011—Subsec. (j)(4) to (6). Pub. L. 111-358 added pars. (4) to (6).

**§ 16538. Advanced Research Projects Agency—Energy****(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 (n)(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 and applied sciences;
- (B) translating scientific discoveries and cutting-edge inventions into technological innovations; and
- (C) accelerating transformational technological advances in areas that industry by it-

self 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.

**(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 advanced manufacturing process and technologies for the domestic manufacturing of novel energy technologies; and

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

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

(5) pursuant to subsection (c)(2)(C)—

(A) ensuring that applications for funding disclose the extent of current and prior efforts, including monetary investments as appropriate, in pursuit of the technology area for which funding is being requested;

(B) adopting measures to ensure that, in making awards, program managers adhere to the purposes of subsection (c)(2)(C); and

(C) providing as part of the annual report required by subsection (h)(1) a summary of the instances of and reasons for ARPA-E funding projects in technology areas already being undertaken by industry.

**(f) Awards**

In carrying out this section, the Director may provide awards in the form of grants, contracts, cooperative agreements, cash prizes, and other transactions.

**(g) Personnel****(1) In general**

The Director shall establish and maintain within ARPA-E a staff with sufficient qualifications and expertise to enable ARPA-E to carry out the responsibilities of ARPA-E under this section in conjunction with other operations of the Department.

**(2) Program directors****(A) In general**

The Director shall designate employees to serve as program directors for the programs established pursuant to the responsibilities established for ARPA-E under subsection (e).

**(B) Responsibilities**

A program director 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 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) identifying innovative cost-sharing arrangements for ARPA-E projects, including through use of the authority provided under section 16352(b)(3) of this title;

(vi) monitoring the progress of projects supported under the program;

(vii) identifying mechanisms for commercial application of successful energy technology development projects, including through establishment of partnerships between awardees and commercial entities; and

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

**(C) Term**

The term of a program manager shall be not more than 3 years and may be renewed.

**(3) 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;

(ii) fix the basic pay of such personnel at a rate to be determined by the Director at rates not in excess of Level II of the Executive Schedule (EX-II) without regard to the civil service laws; and

(iii) pay any employee appointed under this subpart<sup>1</sup> payments in addition to basic pay, except that the total amount of additional payments paid to an employee under this subpart<sup>1</sup> for any 12-month period shall not exceed the least of the following amounts:

(I) \$25,000.

(II) The amount equal to 25 percent of the annual rate of basic pay of the employee.

(III) The amount of the limitation that is applicable for a calendar year under section 5307(a)(1) of title 5.

**(B) Number**

The Director shall appoint 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 August 9, 2007, that are provided to the Secretary to hire administrative, financial, and clerical staff as necessary to carry out this section.

**(h) 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, 2010, and October 1, 2013, 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.

**(i) 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.

<sup>1</sup> So in original.

**(2) Technology Transfer Coordinator**

To the extent appropriate, the Director may coordinate technology transfer efforts with the Technology Transfer Coordinator appointed under section 16391 of this title.

**(j) Federal demonstration of technologies**

The Director shall seek opportunities to partner with purchasing and procurement programs of Federal agencies to demonstrate energy technologies resulting from activities funded through ARPA-E.

**(k) 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.

**(l) ARPA-E evaluation****(1) In general**

After ARPA-E has been in operation for 6 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, and the manner in which those lessons may apply to the operation of other programs of the Department.

**(3) Availability**

On completion of the evaluation, the evaluation shall be made available to Congress and the public.

**(m) 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.

**(n) 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),<sup>2</sup> 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;
- (B) such sums as are necessary for each of fiscal years 2009 and 2010;
- (C) \$300,000,000 for fiscal year 2011;
- (D) \$306,000,000 for fiscal year 2012; and
- (E) \$312,000,000 for fiscal year 2013.

**(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) 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 5 percent of the amount shall be used for technology transfer and outreach activities, consistent with the goal described in subsection (c)(2)(D) and within the responsibilities of program directors described in subsection (g)(2)(B)(vii); and
- (C) no funds may be used for construction of new buildings or facilities during the 5-year period beginning on August 9, 2007.

(Pub. L. 110-69, title V, §5012, Aug. 9, 2007, 121 Stat. 621; Pub. L. 111-358, title IX, §904, Jan. 4, 2011, 124 Stat. 4045.)

## REFERENCES IN TEXT

Level II of the Executive Schedule, referred to in subsec. (g)(3)(A)(ii), is set out in section 5313 of Title 5, Government Organization and Employees.

Par. (5), referred to in subsec. (n)(2), was redesignated par. (4) of this section and former par. (4) was struck out by Pub. L. 111-358, title IX, §904(10)(B), (C), Jan. 4, 2011, 124 Stat. 4048.

## AMENDMENTS

2011—Subsec. (a)(3). Pub. L. 111-358, §904(1), substituted "subsection (n)(1)" for "subsection (m)(1)".

Subsec. (c)(2)(A). Pub. L. 111-358, §904(2), inserted "and applied" after "advances in fundamental".

Subsec. (e)(3)(C). Pub. L. 111-358, §904(3)(A)(i), added subpar. (C) and struck out former subpar. (C) which read as follows: "research and development of manufacturing processes for novel energy technologies; and".

Subsec. (e)(5). Pub. L. 111-358, §904(3)(A)(ii)-(C), added par. (5).

Subsec. (f). Pub. L. 111-358, §904(5), added subsec. (f). Former subsec. (f) redesignated (g).

Subsec. (g). Pub. L. 111-358, §904(4), redesignated subsec. (f) as (g). Former subsec. (g) redesignated (h).

Subsec. (g)(1). Pub. L. 111-358, §904(6)(B), added par. (1). Former par. (1) redesignated (2).

Subsec. (g)(2). Pub. L. 111-358, §904(6)(A),(C)(i), redesignated par. (1) as (2) and substituted "Program directors" for "Program managers" in heading.

Subsec. (g)(2)(A). Pub. L. 111-358, §904(6)(C)(ii), substituted "program directors for" for "program managers for each of".

<sup>2</sup> See References in Text note below.

Subsec. (g)(2)(B). Pub. L. 111-358, §904(6)(C)(iii)(I), substituted “program director” for “program manager” in introductory provisions.

Subsec. (g)(2)(B)(iv). Pub. L. 111-358, §904(6)(C)(iii)(II), struck out “, with advice under subsection (j) as appropriate,” after “basis of merit” in introductory provisions.

Subsec. (g)(2)(B)(v) to (viii). Pub. L. 111-358, §904(6)(C)(iii)(III)–(VI), added cls. (v) and (vii) and redesignated former cls. (v) and (vi) as (vi) and (viii), respectively.

Subsec. (g)(2)(C). Pub. L. 111-358, §904(6)(C)(iv), inserted “not more than” after “shall be”.

Subsec. (g)(3). Pub. L. 111-358, §904(6)(A), redesignated par. (2) as (3).

Subsec. (g)(3)(A)(ii), (iii). Pub. L. 111-358, §904(6)(D)(i), added cls. (ii) and (iii) and struck out former cl. (ii) which read as follows: “fix the compensation of such personnel at a rate to be determined by the Director.”

Subsec. (g)(3)(B). Pub. L. 111-358, §904(6)(D)(ii), substituted “not more than 120” for “not less than 70, and not more than 120.”

Subsec. (h). Pub. L. 111-358, §904(4), redesignated subsec. (g) as (h). Former subsec. (h) redesignated (i).

Subsec. (h)(2). Pub. L. 111-358, §904(7), substituted “2010” for “2008” and “2013” for “2011”.

Subsec. (i). Pub. L. 111-358, §904(4), redesignated subsec. (h) as (i). Former subsec. (i) redesignated (j).

Subsec. (j). Pub. L. 111-358, §904(8), added subsec. (j) and struck out former subsec. (j). Prior to amendment, text read as follows: “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.”

Pub. L. 111-358, §904(4), redesignated subsec. (i) as (j). Former subsec. (j) redesignated (k).

Subsecs. (k), (l). Pub. L. 111-358, §904(4), redesignated subsecs. (j) and (k) as (k) and (l), respectively. Former subsec. (l) redesignated (m).

Subsec. (l)(1). Pub. L. 111-358, §904(9)(A), substituted “6 years” for “4 years”.

Subsec. (l)(2)(B). Pub. L. 111-358, §904(9)(B), inserted “, and the manner in which those lessons may apply to the operation of other programs of the Department” after “ARPA-E”.

Subsecs. (m), (n). Pub. L. 111-358, §904(4), redesignated subsecs. (l) and (m) as (m) and (n), respectively.

Subsec. (n)(2)(C) to (E). Pub. L. 111-358, §904(10)(A), added subpars. (C) to (E).

Subsec. (n)(4). Pub. L. 111-358, §904(10)(B), (C), redesignated par. (5) as (4) and struck out former par. (4). Prior to amendment, text read as follows: “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.”

Subsec. (n)(4)(B). Pub. L. 111-358, §904(10)(D), substituted “5 percent” for “2.5 percent” and inserted “, consistent with the goal described in subsection (c)(2)(D) and within the responsibilities of program directors described in subsection (g)(2)(B)(vii)” after “outreach activities”.

Subsec. (n)(5). Pub. L. 111-358, §904(10)(C), redesignated par. (5) as (4).

## CHAPTER 150—NATIONAL AERONAUTICS AND SPACE PROGRAMS, 2005

### § 16601. Transferred

#### CODIFICATION

Section, Pub. L. 109-155, §2, Dec. 30, 2005, 119 Stat. 2897, which related to definitions, was transferred and is set out as a note under section 10101 of Title 51, National and Commercial Space Programs.

## SUBCHAPTER I—GENERAL PRINCIPLES AND REPORTS

### §§ 16611, 16611a. Repealed or Omitted

#### CODIFICATION

Section 16611, Pub. L. 109-155, title I, §101, Dec. 30, 2005, 119 Stat. 2897, which related to responsibilities, policies, and plans, was repealed in part and omitted in part. Subsecs. (a) and (b) were repealed and reenacted as sections 20301 and 20302, respectively, of Title 51, National and Commercial Space Programs, by Pub. L. 111-314, §§3, 6, Dec. 18, 2010, 124 Stat. 3328, 3444, which Act enacted Title 51. Subsecs. (c) to (g), requiring certain reports and studies by past dates, were omitted from the Code following the enactment of Title 51. Subsec. (h)(1) was repealed and reenacted as subsec. (a) of section 30103 of Title 51. Subsec. (h)(2), providing sense of Congress regarding budget evaluation, was omitted from the Code following the enactment of Title 51. Subsec. (i) was repealed and reenacted as subsec. (b) of section 30103 of Title 51. Subsec. (j), providing for independent review of strategic need for aeronautics test facilities, was omitted from the Code following the enactment of Title 51.

Section 16611a, Pub. L. 110-69, title II, §2001, Aug. 9, 2007, 121 Stat. 582, which related to NASA’s contribution to innovation, was repealed in part and omitted in part. Subsecs. (a), (b), (c), and (e) were repealed and reenacted as subsecs. (a), (b), (c), and (d), respectively, of section 20303 of Title 51 by Pub. L. 111-314, §§3, 6, Dec. 18, 2010, 124 Stat. 3328, 3444, which Act enacted Title 51. Subsec. (d), which provided sense of Congress regarding NASA funding, and subsec. (f), requiring report by Administrator regarding assessments of educational program effectiveness not later than one year after Aug. 9, 2007, were omitted from the Code following the enactment of Title 51.

### § 16611b. Repealed. Pub. L. 111-314, §6, Dec. 18, 2010, 124 Stat. 3444

Section, Pub. L. 110-161, div. B, title III, Dec. 26, 2007, 121 Stat. 1919, related to NASA annual budget justification. See subsec. (c) of section 30103 of Title 51, National and Commercial Space Programs.

#### ESTIMATES OF RECEIPTS AND COLLECTIONS AND PROPOSED USE OF FUNDS FROM LEASES OF NON-EXCESS PROPERTY

Pub. L. 111-8, div. B, title III, Mar. 11, 2009, 123 Stat. 589, which provided in part that each annual budget request shall include an annual estimate of gross receipts and collections and proposed use of all funds collected pursuant to section 315 of the National Aeronautics and Space Act of 1958 ([former] 42 U.S.C. 2459j), was repealed and reenacted as subsec. (d) of section 30103 of Title 51, National and Commercial Space Programs, by Pub. L. 111-314, §§3, 6, Dec. 18, 2010, 124 Stat. 3328, 3444, which Act enacted Title 51.

### § 16612. Transferred

#### CODIFICATION

Section, Pub. L. 109-155, title I, §102, Dec. 30, 2005, 119 Stat. 2905, which related to national awareness campaign to encourage young Americans to enter the fields of science, mathematics, and engineering, budget information, space communications plan, Joint Dark Energy Mission, and Office of Science and Technology Policy, and related reports, was transferred and is set out as a note preceding section 40901 of Title 51, National and Commercial Space Programs.

### §§ 16613 to 16615. Repealed. Pub. L. 111-314, §6, Dec. 18, 2010, 124 Stat. 3444

Section 16613, Pub. L. 109-155, title I, §103, Dec. 30, 2005, 119 Stat. 2907, related to baselines and cost con-