CODIFICATION

May 8, 2008, referred to in subsec. (a), was in the original ''the date of enactment of the National Forests, Parks, Public Land, and Reclamation Projects Authorization Act of 2008'' and was translated as meaning the date of enactment of the Consolidated Natural Resources Act of 2008, Pub. L. 110–229, which amended this section generally, to reflect the probable intent of Congress. The National Forests, Parks, Public Land, and Reclamation Projects Authorization Act of 2008, was S. 2616, 110th Congress, introduced in the Senate on Feb. 8, 2008, with action thereon indefinitely postponed. The provisions of section 601 of that bill generally amended section 917 of Pub. L. 109–58 (this section) and was a predecessor version of section 601 of Pub. L. 109–229.

AMENDMENTS

2008—Pub. L. 110–229 amended section generally. Prior to amendment, section related to grants for the establishment of a network of Advanced Energy Efficiency Technology Transfer Centers.

PART B—DISTRIBUTED ENERGY AND ELECTRIC ENERGY SYSTEMS

§ 16211. Distributed energy and electric energy systems

(a) In general

The Secretary shall carry out programs of research, development, demonstration, and commercial application on distributed energy resources and systems reliability and efficiency, to improve the reliability and efficiency of distributed energy resources and systems, integrating advanced energy technologies with grid connectivity, including activities described in this part. The programs shall address advanced energy technologies and systems and advanced grid reliability technologies.

(b) Authorization of appropriations

(1) Distributed energy and electric energy systems activities

There are authorized to be appropriated to the Secretary to carry out distributed energy and electric energy systems activities, including activities authorized under this part—

(A) $240,000,000 for fiscal year 2007;

(B) $255,000,000 for fiscal year 2008; and

(C) $273,000,000 for fiscal year 2009.

(2) Power delivery research initiative

There are authorized to be appropriated to the Secretary to carry out the Power Delivery Research Initiative under subsection [1] 16215(e) of this title such sums as may be necessary for each of fiscal years 2007 through 2009.

(c) Micro-cogeneration energy technology

From amounts authorized under subsection (b), $20,000,000 for each of fiscal years 2007 and 2008 shall be available to carry out activities under section 16213 of this title.

(d) High-voltage transmission lines

From amounts authorized under subsection (b), $2,000,000 for fiscal year 2007 shall be available to carry out activities under section 16215(g) of this title.

(Pub. L. 109–58, title IX, § 921, Aug. 8, 2005, 119 Stat. 864.)

[1] So in original. Probably should be ''section''.

§ 16212. High power density industry program

(a) In general

The Secretary shall establish a comprehensive research, development, demonstration, and commercial application to improve the energy efficiency of high power density facilities, including data centers, server farms, and telecommunications facilities.

(b) Technologies

The program shall consider technologies that provide significant improvement in thermal controls, metering, load management, peak load reduction, or the efficient cooling of electronics.

(Pub. L. 109–58, title IX, § 922, Aug. 8, 2005, 119 Stat. 864.)

§ 16213. Micro-cogeneration energy technology

(a) In general

The Secretary shall make competitive, merit-based grants to consortia for the development of micro-cogeneration energy technology.

(b) Uses

The consortia shall explore—

(1) the use of small-scale combined heat and power in residential heating appliances;

(2) the use of excess power to operate other appliances within the residence; and

(3) the supply of excess generated power to the power grid.

(Pub. L. 109–58, title IX, § 923, Aug. 8, 2005, 119 Stat. 865.)

§ 16214. Distributed energy technology demonstration programs

(a) Coordinating consortia program

The Secretary may provide financial assistance to coordinating consortia of interdisciplinary participants for demonstrations designed to accelerate the use of distributed energy technologies (such as fuel cells, microturbines, reciprocating engines, thermally activated technologies, and combined heat and power systems) in high-energy intensive commercial applications.

(b) Small-scale portable power program

(1) In general

The Secretary shall—

(A) establish a research, development, and demonstration program to develop working models of small scale portable power devices; and

(B) to the fullest extent practicable, identify and utilize the resources of universities that have shown expertise with respect to advanced portable power devices for either civilian or military use.

(2) Organization

The universities identified and utilized under paragraph (1)(B) are authorized to establish an organization to promote small scale portable power devices.

(3) Definition

For purposes of this subsection, the term ''small scale portable power device'' means a

field-deployable portable mechanical or electromechanical device that can be used for applications such as communications, computation, mobility enhancement, weapons systems, optical devices, cooling, sensors, medical devices, and active biological agent detection systems.

(Pub. L. 109–58, title IX, §924, Aug. 8, 2005, 119 Stat. 865.)

§ 16215. Electric transmission and distribution programs

(a) Program

The Secretary shall establish a comprehensive research, development, and demonstration program to ensure the reliability, efficiency, and environmental integrity of electrical transmission and distribution systems, which shall include—

(1) advanced energy delivery technologies, energy storage technologies, materials, and systems, giving priority to new transmission technologies, including composite conductor materials and other technologies that enhance reliability, operational flexibility, or power-carrying capability;

(2) advanced grid reliability and efficiency technology development;

(3) technologies contributing to significant load reductions;

(4) advanced metering, load management, and control technologies;

(5) technologies to enhance existing grid components;

(6) the development and use of high-temperature superconductors to—

(A) enhance the reliability, operational flexibility, or power-carrying capability of electric transmission or distribution systems; or

(B) increase the efficiency of electric energy generation, transmission, distribution, or storage systems;

(7) integration of power systems, including systems to deliver high-quality electric power, electric power reliability, and combined heat and power;

(8) supply of electricity to the power grid by small scale, distributed and residential-based power generators;

(9) the development and use of advanced grid design, operation, and planning tools;

(10) any other infrastructure technologies, as appropriate; and

(11) technology transfer and education.

(b) Program plan

(1) In general

Not later than 1 year after August 8, 2005, the Secretary, in consultation with other appropriate Federal agencies, shall prepare and submit to Congress a 5-year program plan to guide activities under this section.

(2) Consultation

In preparing the program plan, the Secretary shall consult with—

(A) utilities;

(B) energy service providers;

(C) manufacturers;

(D) institutions of higher education;

(E) other appropriate State and local agencies;

(F) environmental organizations;

(G) professional and technical societies; and

(H) any other persons the Secretary considers appropriate.

(c) Implementation

The Secretary shall consider implementing the program under this section using a consortium of participants from industry, institutions of higher education, and National Laboratories.

(d) Report

Not later than 2 years after the submission of the plan under subsection (b), the Secretary shall submit to Congress a report—

(1) describing the progress made under this section; and

(2) identifying any additional resources needed to continue the development and commercial application of transmission and distribution of infrastructure technologies.

(e) Power delivery research initiative

(1) In general

The Secretary shall establish a research, development, and demonstration initiative specifically focused on power delivery using components incorporating high temperature superconductivity.

(2) Goals

The goals of the Initiative shall be—

(A) to establish world-class facilities to develop high temperature superconductivity power applications in partnership with manufacturers and utilities;

(B) to provide technical leadership for establishing reliability for high temperature superconductivity power applications, including suitable modeling and analysis;

(C) to facilitate the commercial transition toward direct current power transmission, storage, and use for high power systems using high temperature superconductivity; and

(D) to facilitate the integration of very low impedance high temperature superconducting wires and cables in existing electric networks to improve system performance, power flow control, and reliability.

(3) Inclusions

The Initiative shall include—

(A) feasibility analysis, planning, research, and design to construct demonstrations of superconducting links in high power, direct current, and controllable alternating current transmission systems;

(B) public-private partnerships to demonstrate deployment of high temperature superconducting cable into testbeds simulating a realistic transmission grid and under varying transmission conditions, including actual grid insertions; and

(C) testbeds developed in cooperation with National Laboratories, industries, and institutions of higher education to—

(i) demonstrate those technologies;