(e) Procedures and rules

(1) The Secretary shall, within 60 days after February 17, 2009, by means of a notice of intent and subsequent solicitation of grant proposals—

(A) establish procedures by which applicants can obtain grants of not more than one-half of their documented costs;

(B) require as a condition of receiving funding under this subsection that demonstration projects utilize open protocols and standards (including Internet-based protocols and standards) if available and appropriate;

(C) establish procedures to ensure that there is no duplication or multiple payment for the same investment or costs, that the grant goes to the party making the actual expenditures for the qualifying Smart Grid investments, and that the grants made have a significant effect in encouraging and facilitating the development of a smart grid;

(D) establish procedures to ensure there will be public records of grants made, recipients, and qualifying Smart Grid investments which have received grants; and

(E) establish procedures to provide advance payment of moneys up to the full amount of the grant award.

(2) The Secretary shall have discretion and exercise reasonable judgment to deny grants for investments that do not qualify.

(f) Authorization of appropriations

There are authorized to be appropriated to the Secretary such sums as are necessary for the administration of this section and the grants to be made pursuant to this section for fiscal years 2008 through 2012.

(Pub. L. 110–140, title XIII, § 1306, Dec. 19, 2007, 121 Stat. 1789; Pub. L. 111–5, div. A, title IV, § 405(5)–(8), Feb. 17, 2009, 123 Stat. 144; Pub. L. 117–58, div. D, title I, § 40107(a), Nov. 15, 2021, 135 Stat. 940.)

Editorial Notes

REFERENCES IN TEXT

The Energy Policy and Conservation Act, referred to in subsec. (b)(1), is Pub. L. 94–163, Dec. 22, 1975, 89 Stat. 871. Part B of title III of the Act is classified generally to part A (§ 6291 et seq.) of subchapter III of chapter 77 of this title. For complete classification of this Act to the Code, see Short Title note set out under section 6201 of this title and Tables.

Section 2621(d)(17) of title 16, referred to in subsec. (c)(3), was redesignated section 2621(d)(19) by Pub. L. 111–5, div. A, title IV, § 408(a), Feb. 17, 2009, 123 Stat. 146.

AMENDMENTS

2021—Subsec. (b). Pub. L. 117–58, § 40107(a)(1)(A), substituted ''November 15, 2021'' for ''December 19, 2007'' in introductory provisions.

Subsec. (b)(9) to (14). Pub. L. 117–58, § 40107(a)(1)(B), (C), added pars. (9) to (13) and redesignated former par. (9) as (14).

Subsec. (d)(9) to (16). Pub. L. 117–58, § 40107(a)(2), added pars. (9) to (15) and redesignated former par. (9) as (16).

2009—Subsec. (a). Pub. L. 111–5, § 405(5), substituted ''grants of up to one-half (50 percent)'' for ''reimbursement of one-fifth (20 percent)''.

Subsec. (b)(9). Pub. L. 111–5, § 405(6), struck out last sentence which read as follows: ''In making such grants, the Secretary shall seek to reward innovation and early adaptation, even if success is not complete, rather than deployment of proven and commercially viable technologies.''

Subsec. (c)(1). Pub. L. 111–5, § 405(7), substituted ''utilize'' for ''are eligible for''.

Subsec. (e). Pub. L. 111–5, § 405(8), amended subsec. (e) generally. Prior to amendment, text related to establishment of procedures by which applicants who have made qualifying Smart Grid investments can seek and obtain reimbursement of one-fifth of documented expenditures.

Statutory Notes and Related Subsidiaries

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110–140, set out as a note under section 1824 of Title 2, The Congress.

WAGE RATE REQUIREMENTS

For provisions relating to rates of wages to be paid to laborers and mechanics on projects for construction, alteration, or repair work funded under div. D or an amendment by div. D of Pub. L. 117–58, including authority of Secretary of Labor, see section 18851 of this title.

§ 17387. Integrated energy systems

(a) In general

Not later than 180 days after December 27, 2020, the Secretary shall establish a research, development, and demonstration program to develop cost-effective integrated energy systems, including—

(1) development of computer modeling to design different configurations of integrated energy systems and to optimize system operation;

(2) research on system integration needed to plan, design, build, and operate integrated energy systems, including interconnection requirements with the electric grid;

(3) development of integrated energy systems for various applications, including—

(A) thermal energy generation and storage for buildings and manufacturing;

(B) electricity storage coupled with energy generation;

(C) desalination;

(D) production of liquid and gaseous fuels; and

(E) production of chemicals such as ammonia and ethylene;

(4) development of testing facilities for integrated energy systems; and

(5) research on incorporation of various technologies for integrated energy systems, including nuclear energy, renewable energy, storage, and carbon capture, utilization, and sequestration technologies.

(b) Strategic plan

(1) In general

Not later than 1 year after December 27, 2020, the Secretary shall submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a strategic plan that identifies opportunities, challenges, and standards needed for the development and commercial application of integrated energy systems. The strategic plan shall include—

(A) analysis of the potential benefits of development of integrated electric systems on the electric grid;

(B) analysis of the potential contributions of integrated energy systems to different grid architecture scenarios;

(C) research and development goals for various integrated energy systems, including those identified in subsection (a);

(D) assessment of policy and market barriers to the adoption of integrated energy systems;

(E) analysis of the technical and economic feasibility of adoption of different integrated energy systems; and

(F) a 10-year roadmap to guide the program established under subsection (a).

(2) Updates

Not less than once every 3 years for the duration of this research program, the Secretary shall submit an updated version of the strategic plan to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

(c) Program implementation

In carrying out the research, development, demonstration, and commercial application aims of subsection (a), the Secretary shall—

(1) implement the recommendations set forth in the strategic plan in subsection (b);

(2) coordinate across all relevant program offices at the Department, including—

(A) the Office of Energy Efficiency and Renewable Energy;

(B) the Office of Nuclear Energy; and

(C) the Office of Fossil Energy;

(3) leverage existing programs and resources of the Department; and

(4) prioritize activities that accelerate the development of integrated electricity generation, storage, and distribution systems with net zero greenhouse gas emissions.

(d) Integrated energy system defined

The term ''integrated energy system'' means a system composed of 2 or more co-located or jointly operated sub-systems of energy generation, energy storage, or other energy technologies.

(Pub. L. 110–140, title XIII, §1310, as added Pub. L. 116–260, div. Z, title VIII, §8003, Dec. 27, 2020, 134 Stat. 2581.)

§ 17388. Advisory committee

(a) In general

Not later than 180 days after December 27, 2020, the Secretary shall designate an existing advisory committee to advise the Secretary on the authorization of research, development, and demonstration projects under sections 17384 and 17384a of this title.

(b) Responsibility

The Secretary shall annually solicit from the advisory committee—

(1) comments to identify grid modernization technology needs;

(2) an assessment of the progress of the research activities on grid modernization; and

(3) assistance in annually updating grid modernization technology roadmaps.

(Pub. L. 110–140, title XIII, §1311, as added Pub. L. 116–260, div. Z, title VIII, §8005, Dec. 27, 2020, 134 Stat. 2585.)

§ 17389. Technology demonstration on the distribution grid

(a) In general

The Secretary shall establish a grant program to carry out eligible projects related to the modernization of the electric grid, including the application of technologies to improve observability, advanced controls, and prediction of system performance on the distribution system.

(b) Eligible projects

To be eligible for a grant under subsection (a), a project shall—

(1) be designed to improve the performance and efficiency of the future electric grid, while ensuring the continued provision of safe, secure, reliable, and affordable power; and

(2) demonstrate—

(A) secure integration and management of two or more energy resources, including distributed energy generation, combined heat and power, micro-grids, energy storage, electric vehicles, energy efficiency, demand response, and intelligent loads; and

(B) secure integration and interoperability of communications and information technologies.

(Pub. L. 116–260, div. Z, title VIII, §8007, Dec. 27, 2020, 134 Stat. 2586.)

Editorial Notes

CODIFICATION

Section was enacted as part of the Energy Act of 2020, and not as part of the Energy Independence and Security Act of 2007 which comprises this chapter.

Statutory Notes and Related Subsidiaries

APPLICATION

Provisions of section 3212 of this title applicable to construction, alteration, or repair work of demonstration projects funded by grants or contracts authorized under this section, see section 9006(b) of div. Z of Pub. L. 116–260, set out as a note under section 16237 of this title.

§ 17390. Voluntary model pathways

(a) Establishment of voluntary model pathways

(1) Establishment

Not later than 90 days after December 27, 2020, the Secretary of Energy (in this section referred to as the ''Secretary''), in consultation with the steering committee established under paragraph (3), shall initiate the development of voluntary model pathways for modernizing the electric grid through a collaborative, public-private effort that—

(A) produces illustrative policy pathways encompassing a diverse range of technologies that can be adapted for State and regional applications by regulators and policymakers;

(B) facilitates the modernization of the electric grid and associated communications