

(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

networks to achieve the objectives described in paragraph (2);

(C) ensures a reliable, resilient, affordable, safe, and secure electric grid; and

(D) acknowledges and accounts for different priorities, electric systems, and rate structures across States and regions.

(2) Objectives

The pathways established under paragraph (1) shall facilitate achievement of as many of the following objectives as practicable:

(A) Near real-time situational awareness of the electric system.

(B) Data visualization.

(C) Advanced monitoring and control of the advanced electric grid.

(D) Enhanced certainty of policies for investment in the electric grid.

(E) Increased innovation.

(F) Greater consumer empowerment.

(G) Enhanced grid resilience, reliability, and robustness.

(H) Improved—

(i) integration of distributed energy resources;

(ii) interoperability of the electric system; and

(iii) predictive modeling and capacity forecasting.

(I) Reduced cost of service for consumers.

(J) Diversification of generation sources.

(3) Steering committee

Not later than 90 days after December 27, 2020, the Secretary shall establish a steering committee to help develop the pathways under paragraph (1), to be composed of members appointed by the Secretary, consisting of persons with appropriate expertise representing a diverse range of interests in the public, private, and academic sectors, including representatives of—

(A) the Federal Energy Regulatory Commission;

(B) the National Laboratories;

(C) States;

(D) State regulatory authorities;

(E) transmission organizations;

(F) representatives of all sectors of the electric power industry;

(G) institutions of higher education;

(H) independent research institutes; and

(I) other entities.

(b) Technical assistance

The Secretary may provide technical assistance to States, Indian Tribes, or units of local government to adopt or implement one or more elements of the pathways developed under subsection (a)(1), including on a pilot basis.

(Pub. L. 116–260, div. Z, title VIII, §8008, 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.

§ 17391. Voluntary state, regional, and local electricity distribution planning

(a) In general

On the request of a State, regional organization, or electric utility, the Secretary of Energy shall provide assistance to States, regional organizations, and electric utilities to facilitate the development of State, regional, and local electricity distribution plans by—

(1) conducting a resource assessment and analysis of future demand and distribution requirements; and

(2) developing open source tools for State, regional, and local planning and operations.

(b) Risk and security analysis

The assessment under subsection (a)(1) shall include—

(1) the evaluation of the physical security, cybersecurity, and associated communications needs of an advanced distribution management system and the integration of distributed energy resources; and

(2) advanced use of grid architecture to analyze risks in an all-hazards approach that includes communications infrastructure, control systems architecture, and power systems architecture.

(c) Designation

The information collected for the assessment and analysis under subsection (a)(1)—

(1) shall be considered to be critical electric infrastructure information under section 8240–1 of title 16; and

(2) shall only be released in compliance with regulations implementing that section.

(d) Technical assistance

For the purpose of assisting in the development of State and regional electricity distribution plans, the Secretary shall provide technical assistance to—

(1) States;

(2) regional reliability entities; and

(3) other distribution asset owners and operators.

(e) Withdrawal

A State or any entity that has requested technical assistance under this section may withdraw the request for technical assistance at any time, and on such withdrawal, the Secretary shall terminate all assistance efforts.

(f) Effect

Nothing in this section authorizes the Secretary to require any State, regional organization, regional reliability entity, asset owner, or asset operator to adopt any model, tool, plan, analysis, or assessment.

(Pub. L. 116–260, div. Z, title VIII, §8010, Dec. 27, 2020, 134 Stat. 2588.)

Editorial Notes

CODIFICATION

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