

S. 2332, Grid Modernization Act of 2019

Authorizes new DOE demonstration programs for grid modernization through storage, micro-grids, and distribution-level investments in technologies like EV chargers and advanced distributed generation. Requires DOE to provide a series of "off-the-shelf" tools to local and state grid regulators to accelerate the adoption of new technology and grid controls. These tools would reflect the diversity of states and include grid architectural analysis, performance metrics for new technology, and distribution network planning.

Grid Storage Program: The Secretary shall conduct an RD&D program for electric grid energy storage that addresses the principal challenges identified in the 2013 DOE Strategic Plan for Grid Energy Storage. *Authorized Appropriations:* \$50 million for each of fiscal years 2020 through 2028 for the program.

Technology Demonstration Program: The Secretary shall establish a grant program for demonstration of eligible projects related to grid modernization. To obtain a grant, the proposed project must meet the following guidelines:

- Be designed to improve the performance and efficiency of the future electric grid, while ensuring the continued safety, security, reliability, and affordability of power;
- Demonstrate the secure integration and management of at least 2 energy resources (including distributed energy generation, combined heat and power, micro-grids, energy storage, electric vehicles, energy efficiency, demand response, and intelligent loads);
- Demonstrate the secure integration and interoperability of communications and information technologies; and
- Meet the standards for safety, security, reliability, and affordability – specifically adhering to section 545(a) of the Energy Security and Independence Act of 2007.

Micro-Grid/Hybrid Micro-Grid Program: The Secretary shall establish a program to promote the development of hybrid micro-grid systems for isolated communities and micro-grid systems to increase the resilience of critical infrastructure. This shall be carried out in a collaborative process that includes relevant stakeholders.

Grid Architecture, Scenario Development, and Modeling: The Secretary shall develop model grid infrastructure and future scenarios for the electric grid to examine the impacts of different combinations of resources, including different quantities of distributed energy resources and large-scale, central generation on the electric grid.

Voluntary Model Pathways: Not later than 90 days after enactment, the Secretary shall initiate the development of voluntary model pathways for modernizing the electric grid through a collaborative, public-private effort. The Secretary shall create a steering committee to assist with pathway development.

Appropriations: \$200 million for each fiscal years 2020 through 2028 are authorized to be appropriated to the Secretary for the technology demonstration program, micro-grid/hybrid micro-grid program, grid architecture, scenario development, and modeling, and the voluntary model pathways.

Cosponsors: Senators Heinrich and Hirono

Legislative History: This legislation was introduced as a part of the Energy and Natural Resources Act of 2017 (S. 1460) during the 115th Congress and received a full committee hearing by the Senate ENR on 9/19/2017.

This legislation was also introduced as a part of the Energy Policy Modernization Act of 2015 (S. 2012) during the 114th Congress. As a part of this package, this legislation was reported favorably by Senate ENR on 9/09/2015 and was passed by the Senate as amended by a vote of 85-12.