TITLE I—GRID INFRASTRUCTURE AND RESILIENCY
Subtitle A—Grid Infrastructure Resilience and Reliability

SEC. 40101. PREVENTING OUTAGES AND ENHANCING THE RESILIENCE OF THE ELECTRIC GRID.

(a) DEFINITIONS.—In this section:

(1) DISRUPTIVE EVENT.—The term “disruptive event” means an event in which operations of the electric grid are disrupted, preventively shut off, or cannot operate safely due to extreme weather, wildfire, or a natural disaster.

(2) ELIGIBLE ENTITY.—The term “eligible entity” means—

(A) an electric grid operator;
(B) an electricity storage operator;
(C) an electricity generator;
(D) a transmission owner or operator;
(E) a distribution provider;
(F) a fuel supplier; and
(G) any other relevant entity, as determined by the Secretary.
(3) **Natural Disaster.**—The term “natural disaster” has the meaning given the term in section 602(a) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5195a(a)).

(4) **Power Line.**—The term “power line” includes a transmission line or a distribution line, as applicable.

(5) **Program.**—The term “program” means the program established under subsection (b).

(b) **Establishment of Program.**—Not later than 180 days after the date of enactment of this Act, the Secretary shall establish a program under which the Secretary shall make grants to eligible entities, States, and Indian Tribes in accordance with this section.

(c) **Grants to Eligible Entities.**—

(1) **In General.**—The Secretary may make a grant under the program to an eligible entity to carry out activities that—

(A) are supplemental to existing hardening efforts of the eligible entity planned for any given year; and

(B)(i) reduce the risk of any power lines owned or operated by the eligible entity causing a wildfire; or
(ii) increase the ability of the eligible entity to reduce the likelihood and consequences of disruptive events.

(2) APPLICATION.—

(A) IN GENERAL.—An eligible entity desiring a grant under the program shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

(B) REQUIREMENT.—As a condition of receiving a grant under the program, an eligible entity shall submit to the Secretary, as part of the application of the eligible entity submitted under subparagraph (A), a report detailing past, current, and future efforts by the eligible entity to reduce the likelihood and consequences of disruptive events.

(3) LIMITATION.—The Secretary may not award a grant to an eligible entity in an amount that is greater than the total amount that the eligible entity has spent in the previous 3 years on efforts to reduce the likelihood and consequences of disruptive events.

(4) PRIORITY.—In making grants to eligible entities under the program, the Secretary shall give priority to projects that, in the determination of the Sec-
Secretary, will generate the greatest community benefit (whether rural or urban) in reducing the likelihood and consequences of disruptive events.

(5) **Small Utilities Set Aside.**—The Secretary shall ensure that not less than 30 percent of the amounts made available to eligible entities under the program are made available to eligible entities that sell not more than 4,000,000 megawatt hours of electricity per year.

(d) **Grants to States and Indian Tribes.**—

(1) **In General.**—The Secretary, in accordance with this subsection, may make grants under the program to States and Indian Tribes, which each State or Indian Tribe may use to award grants to eligible entities.

(2) **Annual Application.**—

(A) **In General.**—For each fiscal year, to be eligible to receive a grant under this subsection, a State or Indian Tribe shall submit to the Secretary an application that includes a plan described in subparagraph (B).

(B) **Plan Required.**—A plan prepared by a State or Indian Tribe for purposes of an application described in subparagraph (A) shall—
(i) describe the criteria and methods that will be used by the State or Indian Tribe to award grants to eligible entities;

(ii) be adopted after notice and a public hearing; and

(iii) describe the proposed funding distributions and recipients of the grants to be provided by the State or Indian Tribe.

(3) DISTRIBUTION OF FUNDS.—

(A) IN GENERAL.—The Secretary shall provide grants to States and Indian Tribes under this subsection based on a formula determined by the Secretary, in accordance with subparagraph (B).

(B) REQUIREMENT.—The formula referred to in subparagraph (A) shall be based on the following factors:

(i) The total population of the State or Indian Tribe.

(ii) (I) The total area of the State or the land of the Indian Tribe; or

(II) the areas in the State or on the land of the Indian Tribe with a low ratio of electricity customers per mile of power lines.
(iii) The probability of disruptive events in the State or on the land of the Indian Tribe during the previous 10 years, as determined based on the number of federally declared disasters or emergencies in the State or on the land of the Indian Tribe, as applicable, including—

(I) disasters for which Fire Management Assistance Grants are provided under section 420 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5187);

(II) major disasters declared by the President under section 401 of that Act (42 U.S.C. 5170);

(III) emergencies declared by the President under section 501 of that Act (42 U.S.C. 5191); and

(IV) any other federally declared disaster or emergency in the State or on the land of the Indian Tribe.

(iv) The number and severity, measured by population and economic impacts, of disruptive events experienced by the State
or Indian Tribe on or after January 1, 2011.

(v) The total amount, on a per capita basis, of public and private expenditures during the previous 10 years to carry out mitigation efforts to reduce the likelihood and consequences of disruptive events in the State or on the land of the Indian Tribe, with States or Indian Tribes with higher per capita expenditures receiving additional weight or consideration as compared to States or Indian Tribes with lower per capita expenditures.

(C) Annual update of data used in distribution of funds.—Beginning 1 year after the date of enactment of this Act, the Secretary shall annually update—

(i) all data relating to the factors described in subparagraph (B); and

(ii) all other data used in distributing grants to States and Indian Tribes under this subsection.

(4) Oversight.—The Secretary shall ensure that each grant provided to a State or Indian Tribe under the program is allocated, pursuant to the ap-
(5) PRIORITY.—In making grants to eligible entities using funds made available to the applicable State or Indian Tribe under the program, the State or Indian Tribe shall give priority to projects that, in the determination of the State or Indian Tribe, will generate the greatest community benefit (whether rural or urban) in reducing the likelihood and consequences of disruptive events.

(6) SMALL UTILITIES SET ASIDE.—A State or Indian Tribe receiving a grant under the program shall ensure that, of the amounts made available to eligible entities from funds made available to the State or Indian Tribe under the program, the percentage made available to eligible entities that sell not more than 4,000,000 megawatt hours of electricity per year is not less than the percentage of all customers in the State or Indian Tribe that are served by those eligible entities.

(7) TECHNICAL ASSISTANCE AND ADMINISTRATIVE EXPENSES.—Of the amounts made available to a State or Indian Tribe under the program each fis-
cal year, the State or Indian Tribe may use not more than 5 percent for—

(A) providing technical assistance under subsection (g)(1)(A); and

(B) administrative expenses associated with the program.

(8) **MATCHING REQUIREMENT.**—Each State and Indian Tribe shall be required to match 15 percent of the amount of each grant provided to the State or Indian Tribe under the program.

(e) **USE OF GRANTS.**—

(1) **IN GENERAL.**—A grant awarded to an eligible entity under the program may be used for activities, technologies, equipment, and hardening measures to reduce the likelihood and consequences of disruptive events, including—

(A) weatherization technologies and equipment;

(B) fire-resistant technologies and fire prevention systems;

(C) monitoring and control technologies;

(D) the undergrounding of electrical equipment;

(E) utility pole management;
(F) the relocation of power lines or the reconductoring of power lines with low-sag, advanced conductors;

(G) vegetation and fuel-load management;

(H) the use or construction of distributed energy resources for enhancing system adaptive capacity during disruptive events, including—

(i) microgrids; and

(ii) battery-storage subcomponents;

(I) adaptive protection technologies;

(J) advanced modeling technologies;

(K) hardening of power lines, facilities, substations, of other systems; and

(L) the replacement of old overhead conductors and underground cables.

(2) **Prohibitions and Limitations.**—

(A) IN GENERAL.—A grant awarded to an eligible entity under the program may not be used for—

(i) construction of a new—

(I) electric generating facility; or

(II) large-scale battery-storage facility that is not used for enhancing system adaptive capacity during disruptive events; or
(ii) cybersecurity.

(B) Certain investments eligible for recovery.—

(i) In general.—An eligible entity may not seek cost recovery for the portion of the cost of any system, technology, or equipment that is funded through a grant awarded under the program.

(ii) Savings provision.—Nothing in this subparagraph prohibits an eligible entity from recovering through traditional or incentive-based ratemaking any portion of an investment in a system, technology, or equipment that is not funded by a grant awarded under the program.

(C) Application limitations.—An eligible entity may not submit an application for a grant provided by the Secretary under subsection (c) and a grant provided by a State or Indian Tribe pursuant to subsection (d) during the same application cycle.

(f) Distribution of funding.—Of the amounts made available to carry out the program for a fiscal year,
(1) 50 percent is used to award grants to eligible entities under subsection (c); and

(2) 50 percent is used to make grants to States and Indian Tribes under subsection (d).

(g) TECHNICAL AND OTHER ASSISTANCE.—

(1) IN GENERAL.—The Secretary, States, and Indian Tribes may—

(A) provide technical assistance and facilitate the distribution and sharing of information to reduce the likelihood and consequences of disruptive events; and

(B) promulgate consumer-facing information and resources to inform the public of best practices and resources relating to reducing the likelihood and consequences of disruptive events.

(2) USE OF FUNDS BY THE SECRETARY.—Of the amounts made available to the Secretary to carry out the program each fiscal year, the Secretary may use not more than 5 percent for—

(A) providing technical assistance under paragraph (1)(A); and

(B) administrative expenses associated with the program.

(h) MATCHING REQUIREMENT.—
(1) **IN GENERAL.**—Except as provided in paragraph (2), an eligible entity that receives a grant under this section shall be required to match 100 percent of the amount of the grant.

(2) **EXCEPTION FOR SMALL UTILITIES.**—An eligible entity that sells not more than 4,000,000 megawatt hours of electricity per year shall be required to match \( \frac{1}{3} \) of the amount of the grant.

(i) **BIENNIAL REPORT TO CONGRESS.**—

(1) **IN GENERAL.**—Not later than 2 years after the date of enactment of this Act, and every 2 years thereafter through 2026, the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Energy and Commerce of the House of Representatives a report describing the program.

(2) **REQUIREMENTS.**—The report under paragraph (1) shall include information and data on—

(A) the costs of the projects for which grants are awarded to eligible entities;

(B) the types of activities, technologies, equipment, and hardening measures funded by those grants; and
(C) the extent to which the ability of the power grid to withstand disruptive events has increased.

(j) Authorization of Appropriations.—There is authorized to be appropriated to the Secretary to carry out the program $5,000,000,000 for the period of fiscal years 2022 through 2026.
SEC. 40103. ELECTRIC GRID RELIABILITY AND RESILIENCE RESEARCH, DEVELOPMENT, AND DEMONSTRATION.

(a) Definition of Federal Financial Assistance.—In this section, the term “Federal financial assistance” has the meaning given the term in section 200.1 of title 2, Code of Federal Regulations.

(b) Energy Infrastructure Federal Financial Assistance Program.—

(1) Definitions.—In this subsection:

(A) Eligible entity.—The term “eligible entity” means each of—

(i) a State;

(ii) a combination of 2 or more States;

(iii) an Indian Tribe;

(iv) a unit of local government; and

(v) a public utility commission.

(B) Program.—The term “program” means the competitive Federal financial assistance program established under paragraph (2).

(2) Establishment.—Not later than 180 days after the date of enactment of this Act, the Secretary
shall establish a program, to be known as the “Program Upgrading Our Electric Grid and Ensuring Reliability and Resiliency”, to provide, on a competitive basis, Federal financial assistance to eligible entities to carry out the purpose described in paragraph (3).

(3) PURPOSE.—The purpose of the program is to coordinate and collaborate with electric sector owners and operators—

(A) to demonstrate innovative approaches to transmission, storage, and distribution infrastructure to harden and enhance resilience and reliability; and

(B) to demonstrate new approaches to enhance regional grid resilience, implemented through States by public and rural electric cooperative entities on a cost-shared basis.

(4) APPLICATIONS.—To be eligible to receive Federal financial assistance under the program, an eligible entity shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require, including a description of—

(A) how the Federal financial assistance would be used;
(B) the expected beneficiaries, and

(C) in the case of a proposal from an eligible entity described in paragraph (1)(A)(ii), how the proposal would improve regional energy infrastructure.

(5) Selection.—The Secretary shall select eligible entities to receive Federal financial assistance under the program on a competitive basis.


(7) Authorization of Appropriations.—There is authorized to be appropriated to the Secretary to carry out this subsection, $5,000,000,000 for the period of fiscal years 2022 through 2026.

(c) Energy Improvement in Rural or Remote Areas.—

(1) Definition of Rural or Remote Area.—In this subsection, the term “rural or remote area” means a city, town, or unincorporated area that has a population of not more than 10,000 inhabitants.

(2) Required Activities.—The Secretary shall carry out activities to improve in rural or remote areas of the United States—
(A) the resilience, safety, reliability, and
availability of energy; and

(B) environmental protection from adverse
impacts of energy generation.

(3) FEDERAL FINANCIAL ASSISTANCE.—The Sec-
retary, in consultation with the Secretary of the Inte-
rior, may provide Federal financial assistance to
rural or remote areas for the purpose of—

(A) overall cost-effectiveness of energy gen-
eration, transmission, or distribution systems;

(B) siting or upgrading transmission and
distribution lines;

(C) reducing greenhouse gas emissions from
energy generation by rural or remote areas;

(D) providing or modernizing electric gen-
eration facilities;

(E) developing microgrids; and

(F) increasing energy efficiency.

(4) AUTHORIZATION OF APPROPRIATIONS.—
There is authorized to be appropriated to the Sec-
retary to carry out this subsection, $1,000,000,000 for
the period of fiscal years 2022 through 2026.
(1) IN GENERAL.—The Secretary, in collaboration with the Secretary of Homeland Security, the Federal Energy Regulatory Commission, the North American Electric Reliability Corporation, and interested energy infrastructure stakeholders, shall develop common analytical frameworks, tools, metrics, and data to assess the resilience, reliability, safety, and security of energy infrastructure in the United States, including by developing and storing an inventory of easily transported high-voltage recovery transformers and other required equipment.

(2) ASSESSMENT AND REPORT.—

(A) ASSESSMENT.—The Secretary shall carry out an assessment of—

(i) with respect to the inventory of high-voltage recovery transformers, new transformers, and other equipment proposed to be developed and stored under paragraph (1)—

(I) the policies, technical specifications, and logistical and program structures necessary to mitigate the risks associated with the loss of high-voltage recovery transformers;
(II) the technical specifications for high-voltage recovery transformers;

(III) where inventory of high-voltage recovery transformers should be stored;

(IV) the quantity of high-voltage recovery transformers necessary for the inventory;

(V) how the stored inventory of high-voltage recovery transformers would be secured and maintained;

(VI) how the high-voltage recovery transformers may be transported;

(VII) opportunities for developing new flexible advanced transformer designs; and

(VIII) whether new Federal regulations or cost-sharing requirements are necessary to carry out the storage of high-voltage recovery transformers; and

(ii) any efforts carried out by industry as of the date of the assessment—

(I) to share transformers and equipment;
(II) to develop plans for next generation transformers; and

(III) to plan for surge and long-term manufacturing of, and long-term standardization of, transformer designs.

(B) PROTECTION OF INFORMATION.—Information that is provided to, generated by, or collected by the Secretary under subparagraph (A) shall be considered to be critical electric infrastructure information under section 215A of the Federal Power Act (16 U.S.C. 824o–1).

(C) REPORT.—Not later than 180 days after the date of enactment of this Act, the Secretary shall submit to Congress a report describing the results of the assessment carried out under subparagraph (A).
SEC. 40107. DEPLOYMENT OF TECHNOLOGIES TO ENHANCE GRID FLEXIBILITY.

(a) In General.—Section 1306 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17386) is amended—

(1) in subsection (b)—

(A) in the matter preceding paragraph (1), by striking “the date of enactment of this Act” and inserting “the date of enactment of the Infrastructure Investment and Jobs Act”;

(B) by redesignating paragraph (9) as paragraph (14); and

(C) by inserting after paragraph (8) the following:

“(9) In the case of data analytics that enable software to engage in Smart Grid functions, the documented purchase costs of the data analytics.

“(10) In the case of buildings, the documented expenses for devices and software, including for in-
stallation, that allow buildings to engage in demand flexibility or Smart Grid functions.

“(11) In the case of utility communications, operational fiber and wireless broadband communications networks to enable data flow between distribution system components.

“(12) In the case of advanced transmission technologies such as dynamic line rating, flow control devices, advanced conductors, network topology optimization, or other hardware, software, and associated protocols applied to existing transmission facilities that increase the operational transfer capacity of a transmission network, the documented expenditures to purchase and install those advanced transmission technologies.

“(13) In the case of extreme weather or natural disasters, the ability to redirect or shut off power to minimize blackouts and avoid further damage.”; and

(2) in subsection (d)—

(A) by redesignating paragraph (9) as paragraph (16); and

(B) by inserting after paragraph (8) the following:

“(9) The ability to use data analytics and software-as-service to provide flexibility by improving the
visibility of the electrical system to grid operators that can help quickly rebalance the electrical system with autonomous controls.

“(10) The ability to facilitate the aggregation or integration of distributed energy resources to serve as assets for the grid.

“(11) The ability to provide energy storage to meet fluctuating electricity demand, provide voltage support, and integrate intermittent generation sources, including vehicle-to-grid technologies.

“(12) The ability of hardware, software, and associated protocols applied to existing transmission facilities to increase the operational transfer capacity of a transmission network.

“(13) The ability to anticipate and mitigate impacts of extreme weather or natural disasters on grid resiliency.

“(14) The ability to facilitate the integration of renewable energy resources, electric vehicle charging infrastructure, and vehicle-to-grid technologies.

“(15) The ability to reliably meet increased demand from electric vehicles and the electrification of appliances and other sectors.”.

(b) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary to carry out
the Smart Grid Investment Matching Grant Program established under section 1306(a) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17386(a)) $3,000,000,000 for fiscal year 2022, to remain available through September 30, 2026.