AMENDMENT NO._____ Calendar No._____

Purpose: In the nature of a substitute.

IN THE SENATE OF THE UNITED STATES—116th Cong., 1st Sess.

S. 1602

To amend the United States Energy Storage Competitiveness Act of 2007 to establish a research, development, and demonstration program for grid-scale energy storage systems, and for other purposes.

Referred to the Committee on _____ and ordered to be printed

Ordered to lie on the table and to be printed

AMENDMENT IN THE NATURE OF A SUBSTITUTE intended to be proposed by _____

Viz:

Strike all after the enacting clause and insert the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Better Energy Storage Technology Act'' or the ''BEST Act''.

SEC. 2. DEFINITIONS.

In this Act:

(1) DEPARTMENT.—The term ''Department'' means the Department of Energy.

(2) ENERGY STORAGE SYSTEM.—The term ''energy storage system'' means any system, equipment, facility, or technology that—

(A) is capable of absorbing or converting energy, storing the energy for a period of time, and dispatching the energy; and

(B)(i) uses mechanical, electrochemical, thermal, electrolysis, or other processes to convert and store electric energy that was generated at an earlier time for use at a later time; or

(ii) stores energy in an electric, thermal, or gaseous state for direct use for heating or cooling at a later time in a manner that avoids the need to use electricity or other fuel sources at that later time, such as a grid-enabled water heater.

(3) NATIONAL LABORATORY.—The term ''National Laboratory'' has the meaning given the term in section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801).

(4) SECRETARY.—The term ''Secretary'' means the Secretary of Energy, unless otherwise specified.

SEC. 3. ENERGY STORAGE SYSTEM RESEARCH, DEVELOPMENT, AND DEPLOYMENT PROGRAM.

(a) 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 ''Energy Storage System Research, Development, and Deployment Program'' (referred to in this section as the ''program'').

(b) INITIAL PROGRAM OBJECTIVES.—The program shall focus on research, development, and deployment of—

(1) energy storage systems designed to further the development of technologies—

(A) for large-scale commercial deployment;

(B) for deployment at cost targets established by the Secretary;

(C) for hourly and subhourly durations required to provide reliability services to the grid;

(D) for daily durations, which have—

(i) the capacity to discharge energy for a minimum of 6 hours; and

(ii) a system lifetime of at least 20 years under regular operation;

(E) for weekly or monthly durations, which have—

(i) the capacity to discharge energy for 10 to 100 hours, at a minimum; and

(ii) a system lifetime of at least 20 years under regular operation; and

(F) for seasonal durations, which have—

(i) the capability to address seasonal variations in supply and demand; and

(ii) a system lifetime of at least 20 years under regular operation;

(2) distributed energy storage technologies and applications, including building-grid integration;

(3) transportation energy storage technologies and applications, including vehicle-grid integration;

(4) cost-effective systems and methods for—

(A) the reclamation, recycling, and disposal of energy storage materials, including lithium, cobalt, nickel, and graphite; and

(B) the reuse and repurposing of energy storage system technologies;

(5) advanced control methods for energy storage systems;

(6) pumped hydroelectric energy storage systems to advance—

(A) adoption of innovative technologies, including—

(i) adjustable-speed, ternary, and other new pumping and generating equipment designs;

(ii) modular systems;

(iii) closed-loop systems, including mines and quarries; and

(iv) other critical equipment and materials for pumped hydroelectric energy storage, as determined by the Secretary; and

(B) reductions of equipment costs, civil works costs, and construction times for pumped hydroelectric energy storage projects, with the goal of reducing those costs by 50 percent;

(7) models and tools to demonstrate the benefits of energy storage to—

(A) power and water supply systems;

(B) electric generation portfolio optimization; and

(C) expanded deployment of other renewable energy technologies, including in hybrid energy storage systems; and

(8) energy storage use cases from individual and combination technology applications, including

value from various-use cases and energy storage services.

(c) TESTING AND VALIDATION.—In coordination with 1 or more National Laboratories, the Secretary shall accelerate the development, standardized testing, and validation of energy storage systems under the program by developing testing and evaluation methodologies for—

(1) storage technologies, controls, and power electronics for energy storage systems under a variety of operating conditions;

(2) standardized and grid performance testing for energy storage systems, materials, and technologies during each stage of development, beginning with the research stage and ending with the deployment stage;

(3) reliability, safety, and durability testing under standard and evolving duty cycles; and

(4) accelerated life testing protocols to predict estimated lifetime metrics with accuracy.

(d) PERIODIC EVALUATION OF PROGRAM OBJECTIVES.—Not less frequently than once every calendar year, the Secretary shall evaluate and, if necessary, update the program objectives to ensure that the program continues to advance energy storage systems toward widespread

commercial deployment by lowering the costs and increasing the duration of energy storage resources.

(e) ENERGY STORAGE STRATEGIC PLAN.—

(1) IN GENERAL.—The Secretary shall develop a 10-year strategic plan for the program, and update the plan, in accordance with this subsection.

(2) CONTENTS.—The strategic plan developed under paragraph (1) shall—

(A) be coordinated with and integrated across other relevant offices in the Department;

(B) to the extent practicable, include metrics that can be used to evaluate storage technologies;

(C) identify Department programs that—

(i) support the research and development activities described in subsection (b) and the demonstration projects under section 4; and

(ii)(I) do not support the activities or projects described in clause (i); but

(II) are important to the development of energy storage systems and the mission of the Department, as determined by the Secretary;

(D) include expected timelines for—

(i) the accomplishment of relevant objectives under current programs of the Department relating to energy storage systems; and

(ii) the commencement of any new initiatives within the Department relating to energy storage systems to accomplish those objectives; and

(E) incorporate relevant activities described in the Grid Modernization Initiative Multi-Year Program Plan.

(3) SUBMISSION TO CONGRESS.—Not later than 180 days after the date of enactment of this Act, the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committees on Energy and Commerce and Science, Space, and Technology of the House of Representatives the strategic plan developed under paragraph (1).

(4) UPDATES TO PLAN.—The Secretary—

(A) shall annually review the strategic plan developed under paragraph (1); and

(B) may periodically revise the strategic plan as appropriate.

(f) LEVERAGING OF RESOURCES.—The program may be led by a specific office of the Department, but shall be cross-cutting in nature, so that in carrying out activities under the program, the Secretary (or a designee of the Secretary charged with leading the program) shall leverage existing Federal resources, including, at a minimum, the expertise and resources of—

(1) the Office of Electricity Delivery and Energy Reliability;

(2) the Office of Energy Efficiency and Renewable Energy, including the Water Power Technologies Office; and

(3) the Office of Science, including—

(A) the Basic Energy Sciences Program;

(B) the Advanced Scientific Computing Research Program;

(C) the Biological and Environmental Research Program; and

(4) the Electricity Storage Research Initiative established under section 975 of the Energy Policy Act of 2005 (42 U.S.C. 16315).

(g) PROTECTING PRIVACY AND SECURITY.—In carrying out this section, the Secretary shall identify, incorporate, and follow best practices for protecting the privacy of individuals and businesses and the respective sensitive

data of the individuals and businesses, including by managing privacy risk and implementing the Fair Information Practice Principles of the Federal Trade Commission for the collection, use, disclosure, and retention of individual electric consumer information in accordance with the Office of Management and Budget Circular A–130 (or successor circulars).

SEC. 4. ENERGY STORAGE DEMONSTRATION PROJECTS; PILOT GRANT PROGRAM.

(a) DEMONSTRATION PROJECTS.—Not later than September 30, 2023, the Secretary shall, to the maximum extent practicable, enter into agreements to carry out not fewer than 5 energy storage system demonstration projects, including at least 1 energy storage system demonstration project designed to further the development of technologies described in subparagraph (E) or (F) of section 3(b)(1).

(b) ENERGY STORAGE PILOT GRANT PROGRAM.—

(1) DEFINITION OF ELIGIBLE ENTITY.—In this subsection, the term ''eligible entity'' means—

(A) a State energy office (as defined in section 124(a) of the Energy Policy Act of 2005 (42 U.S.C. 15821(a)));

(B) an Indian tribe (as defined in section 4 of the Native American Housing Assistance

and Self-Determination Act of 1996 (25 U.S.C. 4103);

(C) a tribal organization (as defined in section 3765 of title 38, United States Code);

(D) an institution of higher education (as defined in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001));

(E) an electric utility, including—

(i) an electric cooperative;

(ii) a political subdivision of a State, such as a municipally owned electric utility, or any agency, authority, corporation, or instrumentality of a State political subdivision; and

(iii) an investor-owned utility; and

(F) a private energy storage company that is a small business concern (within the meaning of section 3 of the Small Business Act (15 U.S.C. 632)).

(2) ESTABLISHMENT.—The Secretary shall establish a competitive grant program under which the Secretary shall award grants to eligible entities to carry out demonstration projects for pilot energy storage systems.

(3) SELECTION REQUIREMENTS.—In selecting eligible entities to receive a grant under paragraph (2), the Secretary shall, to the maximum extent practicable—

(A) ensure regional diversity among eligible entities awarded grants, including ensuring participation of eligible entities that are rural States and States with high energy costs;

(B) ensure that grants are awarded for demonstration projects that—

(i) expand on the existing technology demonstration programs of the Department;

(ii) are designed to achieve 1 or more of the objectives described in paragraph (4); and

(iii) inject or withdraw energy from the bulk power system, electric distribution system, building energy system, or microgrid (grid-connected or islanded mode) where the project is located; and

(C) give consideration to proposals from eligible entities for securing energy storage through competitive procurement or contract for service.

(4) OBJECTIVES.—Each demonstration project carried out by a grant awarded under paragraph (2) shall have 1 or more of the following objectives:

(A) To improve the security of critical infrastructure and emergency response systems.

(B) To improve the reliability of transmission and distribution systems, particularly in rural areas, including high-energy-cost rural areas.

(C) To optimize transmission or distribution system operation and power quality to defer or avoid costs of replacing or upgrading electric grid infrastructure, including transformers and substations.

(D) To supply energy at peak periods of demand on the electric grid or during periods of significant variation of electric grid supply.

(E) To reduce peak loads of homes and businesses.

(F) To improve and advance power conversion systems.

(G) To provide ancillary services for grid stability and management.

(H) To integrate renewable energy resource production.

(I) To increase the feasibility of microgrids (grid-connected or islanded mode).

(J) To enable the use of stored energy in forms other than electricity to support the natural gas system and other industrial processes.

(K) To integrate fast charging of electric vehicles.

(L) To improve energy efficiency.

(c) REPORTS.—Not less frequently than once every 2 years for the duration of the programs under subsections (a) and (b), the Secretary shall submit to Congress and make publicly available a report describing the performance of those programs.

(d) NO PROJECT OWNERSHIP INTEREST.—The Federal Government shall not hold any equity or other ownership interest in any energy storage system that is part of a project under this section unless the holding is agreed to by each participant of the project.

SEC. 5. LONG-DURATION DEMONSTRATION INITIATIVE AND JOINT PROGRAM.

(a) DEFINITIONS.—In this section:

(1) DIRECTOR OF ARPA–E.—The term ''Director of ARPA–E'' has the meaning given the term in section 5012(a) of the America COMPETES Act (42 U.S.C. 16538(a)).

(2) DIRECTOR OF ESTCP.—The term ''Director of ESTCP'' means the Secretary of Defense, acting through the Director of the Environmental Security Technology Certification Program of the Department of Defense.

(3) INITIATIVE.—The term ''Initiative'' means the demonstration initiative established under subsection (b).

(4) JOINT PROGRAM.—The term ''Joint Program'' means the joint program established under subsection (d).

(5) SECRETARY.—The term ''Secretary'' means the Secretary of Energy, acting through the Director of ARPA–E.

(b) ESTABLISHMENT OF INITIATIVE.—Not later than 180 days after the date of enactment of this Act, the Secretary shall establish a demonstration initiative composed of demonstration projects focused on the development of long-duration energy storage technologies.

(c) SELECTION OF PROJECTS.—To the maximum extent practicable, in selecting demonstration projects to participate in the Initiative, the Secretary shall—

(1) ensure a range of technology types;

(2) ensure regional diversity among projects; and

(3) consider bulk power level, distribution power level, behind-the-meter, microgrid (grid-connected or islanded mode), and off-grid applications.

(d) JOINT PROGRAM.—

(1) ESTABLISHMENT.—As part of the Initiative, the Secretary, in consultation with the Director of ESTCP, shall establish within the Department of Energy a joint program to carry out projects—

(A) to demonstrate promising long-duration energy storage technologies at different scales; and

(B) to help new, innovative long-duration energy storage technologies become commercially viable.

(2) MEMORANDUM OF UNDERSTANDING.—Not later than 200 days after the date of enactment of this Act, the Secretary shall enter into a memorandum of understanding with the Director of ESTCP to administer the Joint Program.

(3) INFRASTRUCTURE.—In carrying out the Joint Program, the Secretary and the Director of ESTCP shall—

(A) use existing test-bed infrastructure at—

(i) Department of Energy facilities; and

(ii) Department of Defense installations; and

(B) develop new infrastructure for identified projects, if appropriate.

(4) GOALS AND METRICS.—The Secretary and the Director of ESTCP shall develop goals and metrics for technological progress under the Joint Program consistent with energy resilience and energy security policies.

(5) SELECTION OF PROJECTS.—

(A) IN GENERAL.—To the maximum extent practicable, in selecting projects to participate in the Joint Program, the Secretary and the Director of ESTCP shall—

(i) ensure that projects are carried out under conditions that represent a variety of environments with different physical conditions and market constraints; and

(ii) ensure an appropriate balance of—

(I) larger, higher-cost projects; and

(II) smaller, lower-cost projects.

(B) PRIORITY.—In carrying out the Joint Program, the Secretary and the Director of ESTCP shall give priority to demonstration projects that—

(i) make available to the public project information that will accelerate deployment of long-duration energy storage technologies; and

(ii) will be carried out in the field.

SEC. 6. TECHNICAL AND PLANNING ASSISTANCE PROGRAM.

(a) DEFINITIONS.—In this section:

(1) ELIGIBLE ENTITY.—The term ''eligible entity'' means—

(A) an electric cooperative;

(B) a political subdivision of a State, such as a municipally owned electric utility, or any agency, authority, corporation, or instrumentality of a State political subdivision;

(C) a not-for-profit entity that is in a partnership with not less than 6 entities described in subparagraph (A) or (B); and

(D) an investor-owned utility.

(2) PROGRAM.—The term ''program'' means the technical and planning assistance program established under subsection (b)(1).

(b) ESTABLISHMENT.—

(1) IN GENERAL.—The Secretary shall establish a technical and planning assistance program to assist eligible entities in identifying, evaluating, planning, designing, and developing processes to procure energy storage systems.

(2) ASSISTANCE AND GRANTS.—Under the program, the Secretary shall—

(A) provide technical and planning assistance, including disseminating information, directly to eligible entities; and

(B) award grants to eligible entities to contract to obtain technical and planning assistance from outside experts.

(3) FOCUS.—In carrying out the program, the Secretary shall focus on energy storage system projects that have the greatest potential for—

(A) strengthening the reliability and resiliency of energy infrastructure;

(B) reducing the cost of energy storage systems;

(C) improving the feasibility of microgrids (grid-connected or islanded mode), particularly in rural areas, including high energy cost rural areas;

(D) reducing consumer electricity costs; or

(E) maximizing local job creation.

(c) TECHNICAL AND PLANNING ASSISTANCE.—

(1) IN GENERAL.—Technical and planning assistance provided under the program shall include assistance with 1 or more of the following activities relating to energy storage systems:

(A) Identification of opportunities to use energy storage systems.

(B) Feasibility studies to assess the potential for development of new energy storage systems or improvement of existing energy storage systems.

(C) Assessment of technical and economic characteristics, including a cost-benefit analysis.

(D) Utility interconnection.

(E) Permitting and siting issues.

(F) Business planning and financial analysis.

(G) Engineering design.

(H) Resource adequacy planning.

(I) Resilience planning and valuation.

(2) EXCLUSION.—Technical and planning assistance provided under the program shall not be used to pay any person for influencing or attempting

to influence an officer or employee of any Federal, State, or local agency, a Member of Congress, an employee of a Member of Congress, a State or local legislative body, or an employee of a State or local legislative body.

(d) INFORMATION DISSEMINATION.—The information disseminated under subsection (b)(2)(A) shall include—

(1) information relating to the topics described in subsection (c)(1), including case studies of successful examples;

(2) computational tools or software for assessment, design, and operation and maintenance of energy storage systems;

(3) public databases that track existing and planned energy storage systems;

(4) best practices for the utility and grid operator business processes associated with the topics described in subsection (c)(1); and

(5) relevant State policies or regulations associated with the topics described in subsection (c)(1).

(e) APPLICATIONS.—

(1) IN GENERAL.—The Secretary shall seek applications for the program—

(A) on a competitive, merit-reviewed basis; and

(B) on a periodic basis, but not less frequently than once every 12 months.

(2) APPLICATION.—An eligible entity desiring to apply for the program shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require, including whether the eligible entity is applying for—

(A) direct technical or planning assistance under subsection (b)(2)(A); or

(B) a grant under subsection (b)(2)(B).

(3) PRIORITIES.—In selecting eligible entities for technical and planning assistance under the program, the Secretary shall give priority to eligible entities described in subparagraphs (A) and (B) of subsection (a)(1).

(f) REPORTS.—The Secretary shall submit to Congress and make available to the public—

(1) not less frequently than once every 2 years, a report describing the performance of the program, including a synthesis and analysis of any information the Secretary requires grant recipients to pro-

vide to the Secretary as a condition of receiving a grant; and

(2) on termination of the program, an assessment of the success of, and education provided by, the measures carried out by eligible entities under the program.

(g) COST-SHARING.—Activities under this section shall be subject to the cost-sharing requirements under section 988 of the Energy Policy Act of 2005 (42 U.S.C. 16352).

SEC. 7. ENERGY STORAGE MATERIALS RECYCLING PRIZE COMPETITION.

Section 1008 of the Energy Policy Act of 2005 (42 U.S.C. 16396) is amended by adding at the end the following:

''(g) ENERGY STORAGE MATERIALS RECYCLING PRIZE COMPETITION.—

''(1) DEFINITION OF CRITICAL ENERGY STORAGE MATERIALS.—In this subsection, the term 'critical energy storage materials' includes—

''(A) lithium;

''(B) cobalt;

''(C) nickel;

''(D) graphite; and

"(E) any other material determined by the Secretary to be critical to the continued growing supply of energy storage resources.

"(2) PRIZE AUTHORITY.—

"(A) IN GENERAL.—As part of the program established under subsection (a), the Secretary shall establish an award program, to be known as the 'Energy Storage Materials Recycling Prize Competition' (referred to in this subsection as the 'program'), under which the Secretary shall carry out prize competitions and make awards to advance the recycling of critical energy storage materials.

"(B) FREQUENCY.—To the maximum extent practicable, the Secretary shall carry out a competition under the program not less frequently than once every calendar year.

"(3) ELIGIBILITY.—

"(A) IN GENERAL.—To be eligible to win a prize under the program, an individual or entity—

"(i) shall have complied with the requirements of the competition as described in the announcement for that competition

published in the Federal Register by the Secretary under paragraph (6);

"(ii) in the case of a private entity, shall be incorporated in the United States and maintain a primary place of business in the United States;

"(iii) in the case of an individual, whether participating singly or in a group, shall be a citizen of, or an alien lawfully admitted for permanent residence in, the United States.

"(B) EXCLUSIONS.—The following entities and individuals shall not be eligible to win a prize under the program:

"(i) A Federal entity.

"(ii) A Federal employee (including an employee of a National Laboratory) acting within the scope of employment.

"(4) AWARDS.—In carrying out the program, the Secretary shall award cash prizes, in amounts to be determined by the Secretary, to each individual or entity selected through a competitive process to develop advanced methods or technologies to recycle critical energy storage materials from energy storage systems.

''(5) CRITERIA.—

''(A) IN GENERAL.—The Secretary shall establish objective, merit-based criteria for awarding the prizes in each competition carried out under the program.

''(B) REQUIREMENTS.—The criteria established under subparagraph (A) shall prioritize advancements in methods or technologies that present the greatest potential for large-scale commercial deployment.

''(C) CONSULTATION.—In establishing criteria under subparagraph (A), the Secretary shall consult with appropriate members of private industry involved in the commercial deployment of energy storage systems.

''(6) ADVERTISING AND SOLICITATION OF COMPETITORS.—

''(A) IN GENERAL.—The Secretary shall announce each prize competition under the program by publishing a notice in the Federal Register.

''(B) REQUIREMENTS.—Each notice published under subparagraph (A) shall describe the essential elements of the competition, such as—

"(i) the subject of the competition;

"(ii) the duration of the competition;

"(iii) the eligibility requirements for participation in the competition;

"(iv) the process for participants to register for the competition;

"(v) the amount of the prize; and

"(vi) the criteria for awarding the prize.

"(7) JUDGES.—

"(A) IN GENERAL.—For each prize competition under the program, the Secretary shall assemble a panel of qualified judges to select the winner or winners of the competition on the basis of the criteria established under paragraph (5).

"(B) SELECTION.—The judges for each competition shall include appropriate members of private industry involved in the commercial deployment of energy storage systems.

"(C) CONFLICTS.—An individual may not serve as a judge in a prize competition under the program if the individual, the spouse of the individual, any child of the individual, or any

other member of the household of the individual—

"(i) has a personal or financial interest in, or is an employee, officer, director, or agent of, any entity that is a registered participant in the prize competition for which the individual will serve as a judge; or

"(ii) has a familial or financial relationship with a registered participant in the prize competition for which the individual will serve as a judge.

"(8) REPORT TO CONGRESS.—Not later than 60 days after the date on which the first prize is awarded under the program, and annually thereafter, the Secretary shall submit to Congress a report that—

"(A) identifies each award recipient;

"(B) describes the advanced methods or technologies developed by each award recipient; and

"(C) specifies actions being taken by the Department toward commercial application of all methods or technologies with respect to

which a prize has been awarded under the program.

''(9) ANTI-DEFICIENCY ACT.—The Secretary shall carry out the program in accordance with section 1341 of title 31, United States Code (commonly referred to as the 'Anti-Deficiency Act').

''(10) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection $10,000,000 for each of fiscal years 2020 through 2024, to remain available until expended.''.

SEC. 8. REGULATORY ACTIONS TO ENCOURAGE ENERGY STORAGE DEPLOYMENT.

(a) DEFINITIONS.—In this section:

(1) COMMISSION.—The term ''Commission'' means the Federal Energy Regulatory Commission.

(2) ELECTRIC STORAGE RESOURCE.—The term ''electric storage resource'' means a resource capable of receiving electric energy from the grid and storing that electric energy for later injection back into the grid.

(b) REGULATORY ACTION.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Commission

shall issue a regulation to identify the eligibility of, and process for, electric storage resources—

(A) to receive cost recovery through Commission-regulated rates for the transmission of electric energy in interstate commerce; and

(B) that receive cost recovery under subparagraph (A) to receive compensation for other services (such as the sale of energy, capacity, or ancillary services) without regard to whether those services are provided concurrently with the transmission service described in subparagraph (A).

(2) PROHIBITION OF DUPLICATE RECOVERY.—Any regulation issued under paragraph (1) shall preclude the receipt of unjust and unreasonable double recovery for electric storage resources providing services described in subparagraphs (A) and (B) of that paragraph.

(c) ELECTRIC STORAGE RESOURCES TECHNICAL CONFERENCE.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Commission shall convene a technical conference on the potential for electric storage resources to improve the operation of electric systems.

(2) REQUIREMENTS.—The technical conference under paragraph (1) shall—

(A) identify opportunities for further consideration of electric storage resources in regional and interregional transmission planning processes within the jurisdiction of the Commission;

(B) identify all energy, capacity, and ancillary service products, market designs, or rules that—

(i) are within the jurisdiction of the Commission; and

(ii) enable and compensate for the use of electric storage resources that improve the operation of electric systems;

(C) examine additional products, market designs, or rules that would enable and compensate for the use of electric storage resources for improving the operation of electric systems; and

(D) examine the functional value of electric storage resources at the transmission and distribution system interface for purposes of providing electric system reliability.

SEC. 9. COORDINATION.

To the maximum extent practicable, the Secretary shall coordinate the activities under this Act (including activities conducted pursuant to the amendments made by this Act) among the offices and employees of the Department, other Federal agencies, and other relevant entities—

(1) to ensure appropriate collaboration; and

(2) to avoid unnecessary duplication of those activities.

SEC. 10. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated—

(1) to carry out section 3, $100,000,000 for each of fiscal years 2020 through 2024, to remain available until expended;

(2) to carry out section 4, $100,000,000 for each of fiscal years 2020 through 2024, to remain available until expended;

(3) to carry out section 5, $50,000,000 for each of fiscal years 2020 through 2024, to remain available until expended; and

(4) to carry out section 6, $20,000,000 for each of fiscal years 2020 through 2024, to remain available until expended.