116TH CONGRESS
2D SESSION

H. R. 4447

IN THE SENATE OF THE UNITED STATES

OCTOBER 19, 2020

Received; read twice and referred to the Committee on Energy and Natural Resources

AN ACT

To establish an energy storage and microgrid grant and technical assistance program.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

(a) SHORT TITLE.—This Act may be cited as the ''Clean Economy Jobs and Innovation Act''.

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

TITLE I—ENERGY EFFICIENCY

Subtitle A—Buildings

PART 1—BUILDING ENERGY CODES

SEC. 1101. GREATER ENERGY EFFICIENCY IN BUILDING CODES.

(a) DEFINITIONS.—Section 303 of the Energy Conservation and Production Act (42 U.S.C. 6832) is amended—

(1) by striking paragraph (14) and inserting the following:

''(14) MODEL BUILDING ENERGY CODE.—The term 'model building energy code' means a voluntary building energy code or standard developed and updated by interested persons, such as the code or standard developed by—

''(A) the Council of American Building Officials, or its legal successor, International Code Council, Inc.;

''(B) the American Society of Heating, Refrigerating, and Air-Conditioning Engineers; or

''(C) other appropriate organizations.''; and

(2) by adding at the end the following:

''(17) IECC.—The term 'IECC' means the International Energy Conservation Code.

''(18) INDIAN TRIBE.—The term 'Indian tribe' has the meaning given the term in section 4 of the Native American Housing Assistance and Self-Determination Act of 1996 (25 U.S.C. 4103).''.

(b) STATE BUILDING ENERGY EFFICIENCY CODES.—Section 304 of the Energy Conservation and Production Act (42 U.S.C. 6833) is amended to read as follows:

''SEC. 304. UPDATING STATE BUILDING ENERGY EFFICIENCY CODES.

''(a) VOLUNTARY CODES AND STANDARDS.—Notwithstanding any other provision of this section, any model building code or standard established under section 304 shall not be binding on a State, local government, or Indian tribe as a matter of Federal law.

''(b) ACTION BY SECRETARY.—The Secretary shall—

''(1) encourage and support the adoption of building energy codes by States, Indian tribes, and, as appropriate, by local governments that meet or exceed the model building energy codes, or achieve equivalent or greater energy savings; and

''(2) support full compliance with the State and local codes.

''(c) STATE AND INDIAN TRIBE CERTIFICATION OF BUILDING ENERGY CODE UPDATES.—

''(1) REVIEW AND UPDATING OF CODES BY EACH STATE AND INDIAN TRIBE.—

''(A) IN GENERAL.—Not later than 2 years after the date of publication of a revision to a model building energy code, each State or Indian tribe shall certify whether the State or Indian tribe, respectively, has reviewed and updated the energy provisions of the building code of the State or Indian tribe, respectively.

''(B) DEMONSTRATION.—The certification shall include a demonstration of whether the energy savings for the code provisions that are in effect throughout the territory of the State or Indian tribe meet or exceed the energy savings of the updated model building energy code.

"(C) NO MODEL BUILDING ENERGY CODE UPDATE.—If a model building energy code is not updated by a target date established under section 307(b)(2)(E), each State or Indian tribe shall, not later than 2 years after the specified date, certify whether the State or Indian tribe, respectively, has reviewed and updated the energy provisions of the building code of the State or Indian tribe, respectively, to meet or exceed the target in section 307(b)(2).

"(2) VALIDATION BY SECRETARY.—Not later than 90 days after a State or Indian tribe certification under paragraph (1), the Secretary shall—

"(A) determine whether the code provisions of the State or Indian tribe, respectively, meet the criteria specified in paragraph (1); and

"(B) if the determination is positive, validate the certification.

"(d) IMPROVEMENTS IN COMPLIANCE WITH BUILDING ENERGY CODES.—

"(1) REQUIREMENT.—

"(A) IN GENERAL.—Not later than 3 years after the date of a certification under subsection (c), each State and Indian tribe shall

certify whether the State and Indian tribe, respectively, has—

''(i) achieved full compliance under paragraph (3) with the applicable certified State and Indian tribe building energy code or with the associated model building energy code; or

''(ii) made significant progress under paragraph (4) toward achieving compliance with the applicable certified State and Indian tribe building energy code or with the associated model building energy code.

''(B) REPEAT CERTIFICATIONS.—If the State or Indian tribe certifies progress toward achieving compliance, the State or Indian tribe shall repeat the certification until the State or Indian tribe certifies that the State or Indian tribe has achieved full compliance, respectively.

''(2) MEASUREMENT OF COMPLIANCE.—A certification under paragraph (1) shall include documentation of the rate of compliance based on—

''(A) independent inspections of a random sample of the buildings covered by the code in the preceding year; or

''(B) an alternative method that yields an accurate measure of compliance.

''(3) ACHIEVEMENT OF COMPLIANCE.—A State or Indian tribe shall be considered to achieve full compliance under paragraph (1) if—

''(A) at least 90 percent of building space covered by the code in the preceding year substantially meets all the requirements of the applicable code specified in paragraph (1), or achieves equivalent or greater energy savings level; or

''(B) the estimated excess energy use of buildings that did not meet the applicable code specified in paragraph (1) in the preceding year, compared to a baseline of comparable buildings that meet this code, is not more than 5 percent of the estimated energy use of all buildings covered by this code during the preceding year.

''(4) SIGNIFICANT PROGRESS TOWARD ACHIEVEMENT OF COMPLIANCE.—A State or Indian tribe shall be considered to have made significant progress toward achieving compliance for purposes of paragraph (1) if the State or Indian tribe—

"(A) has developed and is implementing a plan for achieving compliance during the 8-year-period beginning on the date of enactment of the Clean Economy Jobs and Innovation Act, including annual targets for compliance and active training and enforcement programs; and

"(B) has met the most recent target under subparagraph (A).

"(5) VALIDATION BY SECRETARY.—Not later than 90 days after a State or Indian tribe certification under paragraph (1), the Secretary shall—

"(A) determine whether the State or Indian tribe has demonstrated meeting the criteria of this subsection, including accurate measurement of compliance; and

"(B) if the determination is positive, validate the certification.

"(e) STATES OR INDIAN TRIBES THAT DO NOT ACHIEVE COMPLIANCE.—

"(1) REPORTING.—A State or Indian tribe that has not made a certification required under subsection (c) or (d) by the applicable deadline shall submit to the Secretary a report describing—

''(A) the status of the State or Indian tribe with respect to meeting the requirements and submitting the certification; and

''(B) a plan for meeting the requirements and submitting the certification.

''(2) FEDERAL SUPPORT.—For any State or Indian tribe for which the Secretary has not validated a certification by a deadline under subsection (c) or (d), the lack of the certification may be a consideration for Federal support authorized under this section for code adoption and compliance activities.

''(3) LOCAL GOVERNMENT.—In any State or Indian tribe for which the Secretary has not validated a certification under subsection (c) or (d), a local government may be eligible for Federal support under subsections (f) and (g) by meeting the certification requirements of subsections (c) and (d).

''(4) REPORTS BY SECRETARY.—

''(A) IN GENERAL.—Not later than December 31, 2021, and not less frequently than once every 3 years thereafter, the Secretary shall submit to Congress and publish a report describing—

''(i) the status of model building energy codes;

"(ii) the status of code adoption and compliance in the States and Indian tribes;

"(iii) implementation of this section; and

"(iv) improvements in energy savings over time as result of the targets established under section 307(b)(2).

"(B) IMPACTS.—The report shall include estimates of impacts of past action under this section, and potential impacts of further action, on—

"(i) upfront financial and construction costs, cost benefits and returns (using investment analysis), and lifetime energy use for buildings;

"(ii) resulting energy costs to individuals and businesses; and

"(iii) resulting overall annual building ownership and operating costs.

"(f) TECHNICAL ASSISTANCE TO STATES AND INDIAN TRIBES.—The Secretary shall provide technical assistance to States and Indian tribes to implement the goals and requirements of this section, including procedures and technical analysis for States and Indian tribes—

''(1) to improve and implement State residential and commercial building energy codes;

''(2) to demonstrate that the code provisions of the States and Indian tribes achieve equivalent or greater energy savings than the model building energy codes and targets;

''(3) to document the rate of compliance with a building energy code; and

''(4) to otherwise promote the design and construction of energy- and water-efficient buildings.

''(g) AVAILABILITY OF INCENTIVE FUNDING.—

''(1) IN GENERAL.—The Secretary shall provide incentive funding to States and Indian tribes—

''(A) to implement the requirements of this section;

''(B) to improve and implement residential and commercial building energy codes, including increasing and verifying compliance with the codes and training of State, tribal, and local building code officials to implement and enforce the codes; and

''(C) to promote building energy and water efficiency through the use of the codes and standards.

''(2) ADDITIONAL FUNDING.—Additional funding shall be provided under this subsection for implementation of a plan to achieve and document full compliance with residential and commercial building energy codes under subsection (d)—

''(A) to a State or Indian tribe for which the Secretary has validated a certification under subsection (c) or (d); and

''(B) in a State or Indian tribe that is not eligible under subparagraph (A), to a local government that is eligible under this section.

''(3) TRAINING.—Of the amounts made available under this subsection, the State or Indian tribe may use amounts required, but not to exceed $750,000 for a State, to train State and local building code officials to implement and enforce codes described in paragraph (2).

''(4) LOCAL GOVERNMENTS.—States may share grants under this subsection with local governments that implement and enforce the codes.

''(h) STRETCH CODES AND ADVANCED STANDARDS.—

''(1) IN GENERAL.—The Secretary shall provide technical and financial support for the development

of stretch codes and advanced standards for residential and commercial buildings for use as—

"(A) an option for adoption as a building energy code by local, tribal, or State governments; and

"(B) guidelines for energy-efficient building design.

"(2) TARGETS.—The stretch codes and advanced standards shall be designed—

"(A) to achieve substantial energy savings compared to the model building energy codes; and

"(B) to meet targets under section 307(b), if available, at least 3 to 6 years in advance of the target years.

"(i) STUDIES.—The Secretary, in consultation with building science experts from the National Laboratories and institutions of higher education, designers and builders of energy-efficient residential and commercial buildings, code officials, code and standards developers, and other stakeholders, shall undertake a study of the feasibility, impact, economics, and merit of—

"(1) code and standards improvements that would require that buildings be designed, sited, and constructed in a manner that makes the buildings

more adaptable in the future to become zero-net-energy after initial construction, as advances are achieved in energy-saving technologies;

''(2) code procedures to incorporate measured lifetimes, not just first-year energy use, in trade-offs and performance calculations;

''(3) legislative options for increasing energy savings from building energy codes and standards, including additional incentives for effective State and local action, and verification of compliance with and enforcement of a code or standard other than by a State or local government; and

''(4) code and standards improvements that consider energy efficiency and water efficiency and, to the maximum extent practicable, consider energy efficiency and water efficiency in an integrated manner.

''(j) EFFECT ON OTHER LAWS.—Nothing in this section or section 307 supersedes or modifies the application of sections 321 through 346 of the Energy Policy and Conservation Act (42 U.S.C. 6291 et seq.).

''(k) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section and section 307 $200,000,000, to remain available until expended.''.

(c) FEDERAL BUILDING ENERGY EFFICIENCY STANDARDS.—Section 305 of the Energy Conservation and Production Act (42 U.S.C. 6834) is amended by striking ''voluntary building energy code'' each place it appears in subsections (a)(2)(B) and (b) and inserting ''model building energy code''.

(d) MODEL BUILDING ENERGY CODES.—

(1) IN GENERAL.—Section 307 of the Energy Conservation and Production Act (42 U.S.C. 6836) is amended to read as follows:

''SEC. 307. SUPPORT FOR MODEL BUILDING ENERGY CODES.

''(a) IN GENERAL.—The Secretary shall support the updating of model building energy codes.

''(b) TARGETS.—

''(1) IN GENERAL.—The Secretary shall support the updating of the model building energy codes to enable the achievement of aggregate energy savings targets established under paragraph (2).

''(2) TARGETS.—

''(A) IN GENERAL.—The Secretary shall work with State, Indian tribes, local governments, code and standards developers (such as the entities described in section 303(14)), and other interested parties to support the updating

of model building energy codes by establishing 1 or more national aggregate energy savings targets to achieve the purposes of this section.

''(B) SEPARATE TARGETS.—The Secretary shall establish separate targets for commercial and residential buildings.

''(C) BASELINES.—The baseline for updating model building energy codes shall be the 2009 IECC for residential buildings and ASHRAE Standard 90.1–2010 for commercial buildings.

''(D) CODE CYCLES.—The targets established under subparagraph (A) shall align with the respective code development cycles determined by the model building energy code-setting and standards development organizations described in section 303(14).

''(E) SPECIFIC YEARS.—

''(i) IN GENERAL.—Targets for specific years shall be established and revised by the Secretary through rulemaking and coordinated with code and standards developers (such as the entities described in section 303(14)) at a level that—

"(I) is at the maximum level of energy efficiency that is technologically feasible and lifecycle cost effective, while accounting for the economic considerations under paragraph (4);

"(II) is higher than the preceding target;

"(III) promotes the achievement of commercial and residential high-performance buildings (as defined in section 401 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17061)) through high performance energy efficiency; and

"(IV) takes into consideration the variations in climate zones used in model building energy codes.

"(ii) INITIAL TARGETS.—Not later than 1 year after the date of enactment of this clause, the Secretary shall establish initial targets under this subparagraph.

"(iii) DIFFERENT TARGET YEARS.—Subject to clause (i), prior to the applicable year, the Secretary may set a later tar-

get year for any of the model building energy codes described in subparagraph (A) if the Secretary determines that a target cannot be met.

''(iv) SMALL BUSINESS.—When establishing targets under this paragraph through rulemaking, the Secretary shall ensure compliance with the Small Business Regulatory Enforcement Fairness Act of 1996 (5 U.S.C. 601 note; Public Law 104–121).

''(3) APPLIANCE STANDARDS AND OTHER FACTORS AFFECTING BUILDING ENERGY USE.—In establishing building code targets under paragraph (2), the Secretary shall develop and adjust the targets in recognition of potential savings and costs relating to—

''(A) efficiency gains made in appliances, lighting, windows, insulation, and building envelope sealing;

''(B) advancement of distributed generation and on-site renewable power generation technologies;

''(C) equipment improvements for heating, cooling, and ventilation systems;

"(D) building management systems and smart technologies to reduce energy use; and

"(E) other technologies, practices, and building systems that the Secretary considers appropriate regarding building plug load and other energy uses.

"(4) ECONOMIC CONSIDERATIONS.—In establishing and revising building code targets under paragraph (2), the Secretary shall consider the economic feasibility of achieving the proposed targets established under this section and the potential costs and savings for consumers and building owners, including a return on investment analysis.

"(c) TECHNICAL ASSISTANCE TO MODEL BUILDING ENERGY CODE-SETTING AND STANDARDS DEVELOPMENT ORGANIZATIONS.—

"(1) IN GENERAL.—The Secretary shall, on a timely basis, provide technical assistance to model building energy code-setting and standards development organizations consistent with the goals of this section.

"(2) ASSISTANCE.—The assistance shall include, as requested by the organizations, technical assistance in—

''(A) evaluating code or standards proposals or revisions;

''(B) building energy and water analysis and design tools;

''(C) building demonstrations;

''(D) developing definitions of energy use intensity and building types for use in model building energy codes to evaluate the efficiency impacts of the model building energy codes;

''(E) performance-based standards;

''(F) evaluating economic considerations under subsection (b)(4); and

''(G) developing model building energy codes by Indian tribes in accordance with tribal law.

''(3) AMENDMENT PROPOSALS.—The Secretary may submit timely model building energy code amendment proposals to the model building energy code-setting and standards development organizations, with supporting evidence, sufficient to enable the model building energy codes to meet the targets established under subsection (b)(2).

''(4) ANALYSIS METHODOLOGY.—The Secretary shall make publicly available the entire calculation methodology (including input assumptions and data)

used by the Secretary to estimate the energy savings of code or standard proposals and revisions.

''(d) DETERMINATION.—

''(1) REVISION OF MODEL BUILDING ENERGY CODES.—If the provisions of the IECC or ASHRAE Standard 90.1 regarding building energy use are proposed to be revised, the Secretary shall make a preliminary determination, by not later than 90 days after the date of receipt of the proposed revision, and a final determination by not later than 15 months after the date of publication of the revision, regarding whether the revision will—

''(A) improve energy efficiency in buildings, as compared to the existing model building energy code; and

''(B) meet the applicable targets under subsection (b)(2).

''(2) CODES OR STANDARDS NOT MEETING TARGETS.—

''(A) PRELIMINARY DETERMINATION BY SECRETARY.—If the Secretary makes a preliminary determination under paragraph (1)(B) that a code or standard does not meet an applicable target under subsection (b)(2), the Secretary shall contemporaneously provide to the

developer of the model building energy code or standard not fewer than 2 proposed changes that would result in a model building energy code that meets the applicable target, together with supporting evidence, taking into consideration—

"(i) whether the modified code is technically feasible and lifecycle cost effective;

"(ii) available appliances, technologies, materials, and construction practices; and

"(iii) the economic considerations under subsection (b)(4).

"(B) DETERMINATION OR ELECTION BY DEVELOPER.—Not later than 270 days after the date of receipt of proposed changes of the Secretary under subparagraph (A), a developer shall—

"(i) determine whether—

"(I) to publish a new revised code accepting the proposed changes; or

"(II) to reject the proposed changes; or

"(ii) if the developer elects not to make a determination under clause (i),

publish a notice of that election, together with the proposed changes.

"(C) FINAL DETERMINATION BY SECRETARY.—

"(i) IN GENERAL.—A final determination by the Secretary shall be made on the model building energy code or standard, as modified by the changes proposed by the Secretary under subparagraph (A).

"(ii) ADDITIONAL DETERMINATIONS.—If a model building energy code or standards developer makes an election pursuant to subparagraph (B)(ii), the Secretary shall make the following final determinations for purposes of this subsection:

"(I) A final determination regarding whether the code or standard of the developer, absent any changes proposed by the Secretary under subparagraph (A), will—

"(aa) improve energy efficiency in buildings, as compared to the existing model building energy code; and

''(bb) meet the applicable targets under subsection (b)(2).

''(II) A final determination regarding whether the code or standard of the developer, as modified by the changes proposed by the Secretary under subparagraph (A), would—

''(aa) improve energy efficiency in buildings, as compared to the existing model building energy code; and

''(bb) meet the applicable targets under subsection (b)(2).

''(e) ADMINISTRATION.—In carrying out this section, the Secretary shall—

''(1) publish notice of targets and supporting analysis and determinations under this section in the Federal Register to provide an explanation of and the basis for such actions, including any supporting modeling, data, assumptions, protocols, and cost-benefit analysis, including return on investment; and

''(2) provide an opportunity for public comment on targets and supporting analysis and determinations under this section.''.

(2) CONFORMING AMENDMENT.—The table of contents for the Energy Conservation and Production Act is amended by amending the item relating to section 307 to read as follows:

''Sec. 307. Support for model building energy codes.''.

SEC. 1102. COST-EFFECTIVE CODES IMPLEMENTATION FOR EFFICIENCY AND RESILIENCE.

(a) IN GENERAL.—Title III of the Energy Conservation and Production Act (42 U.S.C. 6831 et seq.) is amended by adding at the end the following:

''SEC. 309. COST-EFFECTIVE CODES IMPLEMENTATION FOR EFFICIENCY AND RESILIENCE.

''(a) DEFINITIONS.—In this section:

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

''(A) a relevant State agency, as determined by the Secretary, such as a State building code agency or State energy office; and

''(B) a partnership.

''(2) PARTNERSHIP.—The term 'partnership' means a partnership between an eligible entity described in paragraph (1)(A) and 1 or more of the following entities:

''(A) Local building code agencies.

''(B) Codes and standards developers.

''(C) Associations of builders and design and construction professionals.

''(D) Local and utility energy efficiency programs.

''(E) Consumer, energy efficiency, and environmental advocates.

''(F) Other entities, as determined by the Secretary.

''(3) SECRETARY.—The term 'Secretary' means the Secretary of Energy.

''(b) ESTABLISHMENT.—

''(1) IN GENERAL.—The Secretary shall establish within the Building Technologies Office of the Department of Energy a program under which the Secretary shall award grants on a competitive basis to eligible entities to enable sustained cost-effective implementation of updated building energy codes.

''(2) UPDATED BUILDING ENERGY CODE.—An update to a building energy code under this section shall include any update made available after the existing building energy code, even if it is not the most recent updated code available.

''(c) CRITERIA; PRIORITY.—In awarding grants under subsection (b), the Secretary shall—

''(1) consider—

''(A) prospective energy savings and plans to measure the savings;

''(B) the long-term sustainability of those measures and savings;

''(C) prospective benefits, and plans to assess the benefits, including benefits relating to—

''(i) resilience and peak load reduction;

''(ii) occupant safety and health; and

''(iii) environmental performance;

''(D) the demonstrated capacity of the eligible entity to carry out the proposed project; and

''(E) the need of the eligible entity for assistance; and

''(2) give priority to applications from partnerships.

''(d) ELIGIBLE ACTIVITIES.—

''(1) IN GENERAL.—An eligible entity awarded a grant under this section may use the grant funds—

''(A) to create or enable State or regional partnerships to provide training and materials to—

"(i) builders, contractors and subcontractors, architects, and other design and construction professionals, relating to meeting updated building energy codes in a cost-effective manner; and

"(ii) building code officials, relating to improving implementation of and compliance with building energy codes;

"(B) to collect and disseminate quantitative data on construction and codes implementation, including code pathways, performance metrics, and technologies used;

"(C) to develop and implement a plan for highly effective codes implementation, including measuring compliance;

"(D) to address various implementation needs in rural, suburban, and urban areas;

"(E) to implement updates in energy codes for—

"(i) new residential and commercial buildings (including multifamily buildings); and

"(ii) additions and alterations to existing residential and commercial buildings (including multifamily buildings); and

"(F) to make an addition or alteration to, or to install, replace, or provide maintenance to, an air filtration and purification system of an HVAC system to meet exigencies related to the airborne epidemic transmissions of SARS–4CoV–2 or coronavirus disease 2019 (COVID–19).

"(2) RELATED TOPICS.—Training and materials provided using a grant under this section may include information on the relationship between energy codes and—

"(A) cost-effective, high-performance, and zero-net-energy buildings;

"(B) improving resilience, health, and safety;

"(C) water savings and other environmental impacts; and

"(D) the economic impacts of energy codes.

"(e) PREVAILING WAGES.—All laborers and mechanics employed by contractors or subcontractors in the performance of construction, alteration, or repair work assisted, in whole or in part, by a grant under this section shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by

the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40. With respect to the labor standards in this subsection, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40.

''(f) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out this section—

''(1) $25,000,000 for each of fiscal years 2021 through 2030; and

''(2) for fiscal year 2031 and each fiscal year thereafter, such sums as are necessary.''.

(b) CONFORMING AMENDMENTS.—

(1) TABLE OF CONTENTS.—The table of contents for the Energy Conservation and Production Act is amended by inserting after the item relating to section 308 the following:

''Sec. 309. Cost-effective codes implementation for efficiency and resilience.''.

(2) DEFINITIONS.—Section 303 of the Energy Conservation and Production Act (42 U.S.C. 6832) is amended, in the matter preceding paragraph (1), by striking ''As used in'' and inserting ''Except as otherwise provided, in''.

SEC. 1103. COMMERCIAL BUILDING ENERGY CONSUMPTION INFORMATION SHARING.

(a) IN GENERAL.—Not later than 120 days after the date of enactment of this Act, the Administrator of the Energy Information Administration (referred to in this section as the ''Administrator'') and the Administrator of the Environmental Protection Agency shall sign, and submit to Congress, an information sharing agreement (referred to in this section as the ''agreement'') relating to commercial building energy consumption data.

(b) CONTENT OF AGREEMENT.—The agreement shall—

(1) provide that the Administrator shall have access to building-specific data in the Portfolio Manager database of the Environmental Protection Agency;

(2) describe the manner in which the Administrator shall incorporate appropriate data (including the data described in subsection (c)) into any Commercial Buildings Energy Consumption Survey (referred to in this section as ''CBECS'') published after the date of enactment of this Act for the purpose of analyzing and estimating building population, size, location, activity, energy usage, and any other relevant building characteristic; and

(3) describe and compare—

(A) the methodologies that the Energy Information Administration, the Environmental Protection Agency, and State and local government managers use to maximize the quality, reliability, and integrity of data collected through CBECS, the Portfolio Manager database of the Environmental Protection Agency, and State and local building energy disclosure laws (including regulations), respectively, and the manner in which those methodologies can be improved; and

(B) consistencies and variations in data for buildings that were captured in the 2012 CBECS cycle and in the Portfolio Manager database of the Environmental Protection Agency.

(c) DATA.—The data referred in subsection (b)(2) includes data that—

(1) is collected through the Portfolio Manager database of the Environmental Protection Agency;

(2) is required to be publicly available on the internet under State and local government building energy disclosure laws (including regulations); and

(3) includes information on private sector buildings that are not less than 250,000 square feet.

(d) PROTECTION OF INFORMATION.—In carrying out the agreement, the Administrator and the Administrator of the Environmental Protection Agency shall protect information in accordance with—

(1) section 552(b)(4) of title 5, United States Code (commonly known as the 'Freedom of Information Act');

(2) subchapter III of chapter 35 of title 44, United States Code; and

(3) any other applicable law (including regulations).

PART 2—WORKER TRAINING AND CAPACITY BUILDING

SEC. 1111. BUILDING TRAINING AND ASSESSMENT CENTERS.

(a) IN GENERAL.—The Secretary of Energy shall provide grants to institutions of higher education (as defined in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001)) and Tribal Colleges or Universities (as defined in section 316(b) of that Act (20 U.S.C. 1059c(b))) to establish building training and assessment centers—

(1) to identify opportunities for optimizing energy efficiency and environmental performance in buildings;

(2) to promote the application of emerging concepts and technologies in commercial and institutional buildings;

(3) to train engineers, architects, building scientists, building energy permitting and enforcement officials, and building technicians in energy-efficient design and operation;

(4) to assist institutions of higher education and Tribal Colleges or Universities in training building technicians;

(5) to promote research and development for the use of alternative energy sources and distributed generation to supply heat and power for buildings, particularly energy-intensive buildings;

(6) to coordinate with and assist State-accredited technical training centers, community colleges, and Tribal Colleges or Universities and ensure appropriate services are provided under this section to each region of the United States; and

(7) to identify diverse candidates and firms when procuring for the design and construction of training and assessment centers.

(b) COORDINATION AND NONDUPLICATION.—

(1) IN GENERAL.—The Secretary of Energy shall coordinate the program with the industrial re-

search and assessment centers program and with other Federal programs to avoid duplication of effort.

(2) COLLOCATION.—To the maximum extent practicable, building, training, and assessment centers established under this section shall be collocated with Industrial Assessment Centers.

(c) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $10,000,000, to remain available until expended.

SEC. 1112. CAREER SKILLS TRAINING.

(a) DEFINITION OF ELIGIBLE ENTITY.—In this section, the term ''eligible entity'' means a nonprofit partnership that—

(1) includes the equal participation of industry, including public or private employers, and labor organizations, including joint labor-management training programs;

(2) may include workforce investment boards, community-based organizations, qualified service and conservation corps, educational institutions, small businesses, cooperatives, State and local veterans agencies, and veterans service organizations; and

(3) demonstrates—

(A) experience in implementing and operating worker skills training and education programs;

(B) the ability to identify and involve in training programs carried out under this section, target populations of individuals who would benefit from training and be actively involved in activities relating to energy efficiency and renewable energy industries; and

(C) the ability to help individuals achieve economic self-sufficiency.

(b) ESTABLISHMENT.—The Secretary of Energy shall award grants to eligible entities to pay the Federal share of associated career skills training programs under which students concurrently receive classroom instruction and on-the-job training for the purpose of obtaining an industry-related certification to install energy efficient buildings technologies, including technologies described in subsection (b)(3) of section 307 of the Energy Conservation and Production Act (42 U.S.C. 6836).

(c) FEDERAL SHARE.—The Federal share of the cost of carrying out a career skills training program described in subsection (a) shall be 50 percent.

(d) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $10,000,000, to remain available until expended.

PART 3—SCHOOL BUILDINGS

SEC. 1121. COORDINATION OF ENERGY RETROFITTING ASSISTANCE FOR SCHOOLS.

Section 392 of the Energy Policy and Conservation Act (42 U.S.C. 6371a) is amended by adding at the end the following:

''(e) COORDINATION OF ENERGY RETROFITTING ASSISTANCE FOR SCHOOLS.—

''(1) DEFINITION OF SCHOOL.—Notwithstanding section 391(6), for the purposes of this subsection, the term 'school' means—

''(A) an elementary school or secondary school (as defined in section 9101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801));

''(B) an institution of higher education (as defined in section 102(a) of the Higher Education Act of 1965 (20 U.S.C. 1002(a)));

''(C) a school of the defense dependents' education system under the Defense Dependents' Education Act of 1978 (20 U.S.C. 921 et

seq.) or established under section 2164 of title 10, United States Code;

"(D) a school operated by the Bureau of Indian Affairs;

"(E) a tribally controlled school (as defined in section 5212 of the Tribally Controlled Schools Act of 1988 (25 U.S.C. 2511)); and

"(F) a Tribal College or University (as defined in section 316(b) of the Higher Education Act of 1965 (20 U.S.C. 1059c(b))).

"(2) ESTABLISHMENT OF CLEARINGHOUSE.—The Secretary, acting through the Office of Energy Efficiency and Renewable Energy, shall establish a clearinghouse to disseminate information regarding available Federal programs and financing mechanisms that may be used to help initiate, develop, and finance energy efficiency, distributed generation, and energy retrofitting projects for schools.

"(3) REQUIREMENTS.—In carrying out paragraph (2), the Secretary shall—

"(A) consult with appropriate Federal agencies to develop a list of Federal programs and financing mechanisms that are, or may be, used for the purposes described in paragraph (2); and

''(B) coordinate with appropriate Federal agencies to develop a collaborative education and outreach effort to streamline communications and promote available Federal programs and financing mechanisms described in subparagraph (A), which may include the development and maintenance of a single online resource that includes contact information for relevant technical assistance in the Office of Energy Efficiency and Renewable Energy that States, local education agencies, and schools may use to effectively access and use such Federal programs and financing mechanisms.''.

SEC. 1122. GRANTS FOR ENERGY EFFICIENCY IMPROVEMENTS AND RENEWABLE ENERGY IMPROVEMENTS AT PUBLIC SCHOOL FACILITIES.

(a) DEFINITIONS.—In this section:

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

(A) one local educational agency; and

(B) one or more—

(i) schools;

(ii) nonprofit organizations;

(iii) for-profit organizations; or

(iv) community partners that have the knowledge and capacity to partner and assist with energy improvements.

(2) ENERGY IMPROVEMENTS.—The term ''energy improvements'' means—

(A) any improvement, repair, or renovation, to a school that will result in a direct reduction in school energy costs including but not limited to improvements to building envelope, air conditioning, ventilation, heating system, domestic hot water heating, compressed air systems, distribution systems, lighting, power systems and controls;

(B) any improvement, repair, renovation, or installation that leads to an improvement in teacher and student health including but not limited to indoor air quality, daylighting, ventilation, electrical lighting, and acoustics; and

(C) the installation of renewable energy technologies (such as wind power, photovoltaics, solar thermal systems, geothermal energy, hydrogen-fueled systems, biomass-based systems, biofuels, anaerobic digesters, and hydropower) involved in the improvement, repair, or renovation to a school.

(b) AUTHORITY.—From amounts made available for grants under this section, the Secretary of Energy shall provide competitive grants to eligible entities to make energy improvements authorized by this section.

(c) PRIORITY.—In making grants under this section, the Secretary shall give priority to eligible entities that have renovation, repair, and improvement funding needs and are—

(1) a high-need local educational agency, as defined in section 2102 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6602); or

(2) a local educational agency designated with a metrocentric locale code of 41, 42, or 43, as determined by the National Center for Education Statistics (NCES), in conjunction with the Bureau of the Census, using the NCES system for classifying local educational agencies.

(d) COMPETITIVE CRITERIA.—The competitive criteria used by the Secretary shall include the following:

(1) The fiscal capacity of the eligible entity to meet the needs for improvements of school facilities without assistance under this section, including the ability of the eligible entity to raise funds through the use of local bonding capacity and otherwise.

(2) The likelihood that the local educational agency or eligible entity will maintain, in good condition, any facility whose improvement is assisted.

(3) The potential energy efficiency and safety benefits from the proposed energy improvements.

(e) APPLICATIONS.—To be eligible to receive a grant under this section, an applicant must submit to the Secretary an application that includes each of the following:

(1) A needs assessment of the current condition of the school and facilities that are to receive the energy improvements.

(2) A draft work plan of what the applicant hopes to achieve at the school and a description of the energy improvements to be carried out.

(3) A description of the applicant's capacity to provide services and comprehensive support to make the energy improvements.

(4) An assessment of the applicant's expected needs for operation and maintenance training funds, and a plan for use of those funds, if any.

(5) An assessment of the expected energy efficiency and safety benefits of the energy improvements.

(6) A cost estimate of the proposed energy improvements.

(7) An identification of other resources that are available to carry out the activities for which funds are requested under this section, including the availability of utility programs and public benefit funds.

(f) USE OF GRANT AMOUNTS.—

(1) IN GENERAL.—The recipient of a grant under this section shall use the grant amounts only to make the energy improvements contemplated in the application, subject to the other provisions of this subsection.

(2) OPERATION AND MAINTENANCE TRAINING.—The recipient may use up to 5 percent for operation and maintenance training for energy efficiency and renewable energy improvements (such as maintenance staff and teacher training, education, and preventative maintenance training).

(3) AUDIT.—The recipient may use funds for a third-party investigation and analysis for energy improvements (such as energy audits and existing building commissioning).

(4) CONTINUING EDUCATION.—The recipient may use up to 1 percent of the grant amounts to develop a continuing education curriculum relating to energy improvements.

(g) CONTRACTING REQUIREMENTS.—

(1) DAVIS-BACON.—Any laborer or mechanic employed by any contractor or subcontractor in the performance of work on any energy improvements funded by a grant under this section shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor under subchapter IV of chapter 31 of title 40, United States Code (commonly referred to as the Davis-Bacon Act).

(2) COMPETITION.—Each applicant that receives funds shall ensure that, if the applicant carries out repair or renovation through a contract, any such contract process—

(A) ensures the maximum number of qualified bidders, including small, minority, and women-owned businesses, through full and open competition; and

(B) gives priority to businesses located in, or resources common to, the State or the geographical area in which the project is carried out.

(h) REPORTING.—Each recipient of a grant under this section shall submit to the Secretary, at such time as the Secretary may require, a report describing the use of such funds for energy improvements, the estimated cost

savings realized by those energy improvements, the results of any audit, the use of any utility programs and public benefit funds and the use of performance tracking for energy improvements (such as the Department of Energy: Energy Star program or LEED for Existing Buildings).

(i) BEST PRACTICES.—The Secretary shall develop and publish guidelines and best practices for activities carried out under this section.

(j) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $100,000,000 for each of fiscal years 2021 through 2025.

PART 4—NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

SEC. 1132. RESEARCH FOR EFFECTIVENESS AND STANDARDS.

The Director of the National Institute of Standards and Technology shall—

(1) collect data following wildfires in the wildland-urban interface related to the influence of building materials on structural fires and how wind, terrain, and moisture affect wildland fires; and

(2) contribute to the scientific basis for analyzing economic outcomes of wildland-urban interface fire mitigation by conducting research on and developing metrics for the—

(A) relative contribution of moisture, weather, terrain, and infrastructure;

(B) losses and erosion of the forest floor resulting from wildfires in the wildland urban interface; and

(C) the performance of current designs, materials, and technologies used for—

(i) residential structures;

(ii) public and Federal government buildings;

(iii) electric grid infrastructure; and

(iv) other critical infrastructure.

Subtitle B—Industrial Efficiency and Competitiveness

PART 1—MANUFACTURING ENERGY EFFICIENCY

SEC. 1201. PURPOSES.

The purposes of this part are—

(1) to establish a clear and consistent authority for industrial efficiency programs of the Department of Energy;

(2) to accelerate the deployment of technologies and practices that will increase industrial energy efficiency and improve productivity;

(3) to accelerate the development and demonstration of technologies that will assist the deploy-

ment goals of the industrial efficiency programs of the Department of Energy and increase manufacturing efficiency;

(4) to stimulate domestic economic growth and improve industrial productivity and competitiveness;

(5) to meet the future workforce needs of industry; and

(6) to strengthen partnerships between Federal and State governmental agencies and the private and academic sectors.

SEC. 1202. FUTURE OF INDUSTRY PROGRAM AND INDUSTRIAL RESEARCH AND ASSESSMENT CENTERS.

(a) FUTURE OF INDUSTRY PROGRAM.—Section 452 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17111) is amended—

(1) by striking the section heading and inserting the following: ''**FUTURE OF INDUSTRY PROGRAM**'';

(2) in subsection (a)(2)—

(A) by redesignating subparagraph (E) as subparagraph (F); and

(B) by inserting after subparagraph (D) the following:

''(E) water and wastewater treatment facilities, including systems that treat municipal, industrial, and agricultural waste; and'';

(3) by striking subsection (e); and

(4) by redesignating subsection (f) as subsection (e).

(b) INDUSTRIAL RESEARCH AND ASSESSMENT CENTERS.—Subtitle D of title IV of the Energy Independence and Security Act of 2007 (42 U.S.C. 17111 et seq.) is amended by adding at the end the following:

''SEC. 454. INDUSTRIAL RESEARCH AND ASSESSMENT CENTERS.

''(a) DEFINITIONS.—In this section:

''(1) ENERGY SERVICE PROVIDER.—The term 'energy service provider' means—

''(A) any business providing technology or services to improve the energy efficiency, water efficiency, power factor, or load management of a manufacturing site or other industrial process in an energy-intensive industry (as defined in section 452(a)); and

''(B) any utility operating under a utility energy service project.

''(2) INDUSTRIAL RESEARCH AND ASSESSMENT CENTER.—The term 'industrial research and assessment center' means—

''(A) an institution of higher education-based industrial research and assessment center that is funded by the Secretary under subsection (b); and

''(B) an industrial research and assessment center at a trade school, community college, or union training program that is funded by the Secretary under subsection (f).

''(b) INSTITUTION OF HIGHER EDUCATION-BASED INDUSTRIAL RESEARCH AND ASSESSMENT CENTERS.—

''(1) IN GENERAL.—The Secretary shall provide funding to institution of higher education-based industrial research and assessment centers.

''(2) PURPOSE.—The purpose of each institution of higher education-based industrial research and assessment center shall be—

''(A) to identify opportunities for optimizing energy efficiency and environmental performance, including implementation of—

''(i) smart manufacturing;

''(ii) energy management systems;

''(iii) sustainable manufacturing; and

"(iv) information technology advancements for supply chain analysis, logistics, system monitoring, industrial and manufacturing processes, and other purposes;

"(B) to promote applications of emerging concepts and technologies in small- and medium-sized manufacturers (including water and wastewater treatment facilities and federally owned manufacturing facilities);

"(C) to promote research and development for the use of alternative energy sources to supply heat, power, and new feedstocks for energy-intensive industries;

"(D) to coordinate with appropriate Federal and State research offices;

"(E) to provide a clearinghouse for industrial process and energy efficiency technical assistance resources; and

"(F) to coordinate with State-accredited technical training centers and community colleges, while ensuring appropriate services to all regions of the United States.

"(c) COORDINATION.—To increase the value and capabilities of the industrial research and assessment centers, the centers shall—

''(1) coordinate with Manufacturing Extension Partnership Centers of the National Institute of Standards and Technology;

''(2) coordinate with the Federal Energy Management Program and the Building Technologies Program of the Department of Energy to provide building assessment services to manufacturers;

''(3) increase partnerships with the National Laboratories of the Department of Energy to leverage the expertise, technologies, and research and development capabilities of the National Laboratories for national industrial and manufacturing needs;

''(4) increase partnerships with energy service providers and technology providers to leverage private sector expertise and accelerate deployment of new and existing technologies and processes for energy efficiency, power factor, and load management;

''(5) identify opportunities for reducing greenhouse gas emissions and other air emissions; and

''(6) promote sustainable manufacturing practices for small- and medium-sized manufacturers.

''(d) OUTREACH.—The Secretary shall provide funding for—

''(1) outreach activities by the industrial research and assessment centers to inform small- and

medium-sized manufacturers of the information, technologies, and services available; and

''(2) coordination activities by each industrial research and assessment center to leverage efforts with—

''(A) Federal and State efforts;

''(B) the efforts of utilities and energy service providers;

''(C) the efforts of regional energy efficiency organizations; and

''(D) the efforts of other industrial research and assessment centers.

''(e) CENTERS OF EXCELLENCE.—

''(1) ESTABLISHMENT.—The Secretary shall establish a Center of Excellence at not more than 5 of the highest-performing industrial research and assessment centers, as determined by the Secretary.

''(2) DUTIES.—A Center of Excellence shall coordinate with and advise the industrial research and assessment centers located in the region of the Center of Excellence, including—

''(A) by mentoring new directors and staff of the industrial research and assessment centers with respect to—

''(i) the availability of resources; and

"(ii) best practices for carrying out assessments, including through the participation of the staff of the Center of Excellence in assessments carried out by new industrial research and assessment centers;

"(B) by providing training to staff and students at the industrial research and assessment centers on new technologies, practices, and tools to expand the scope and impact of the assessments carried out by the centers;

"(C) by assisting the industrial research and assessment centers with specialized technical opportunities, including by providing a clearinghouse of available expertise and tools to assist the centers and clients of the centers in assessing and implementing those opportunities;

"(D) by identifying and coordinating with regional, State, local, and utility energy efficiency programs for the purpose of facilitating efforts by industrial research and assessment centers to connect industrial facilities receiving assessments from those centers with regional, State, local, and utility energy efficiency programs that could aid the industrial facilities in

implementing any recommendations resulting from the assessments;

''(E) by facilitating coordination between the industrial research and assessment centers and other Federal programs described in paragraphs (1) through (3) of subsection (c); and

''(F) by coordinating the outreach activities of the industrial research and assessment centers under subsection (d)(1).

''(3) FUNDING.—Subject to the availability of appropriations, for each fiscal year, out of any amounts made available to carry out this section under subsection (i), the Secretary shall use not less than $500,000 to support each Center of Excellence.

''(f) EXPANSION OF INDUSTRIAL RESEARCH AND ASSESSMENT CENTERS.—

''(1) IN GENERAL.—The Secretary shall provide funding to establish additional industrial research and assessment centers at trade schools, community colleges, and union training programs.

''(2) PURPOSE.—

''(A) IN GENERAL.—Subject to subparagraph (B), to the maximum extent practicable, an industrial research and assessment center established under paragraph (1) shall have the

same purpose as an institution of higher education-based industrial research center that is funded by the Secretary under subsection (b)(1).

''(B) CONSIDERATION OF CAPABILITIES.—In evaluating or establishing the purpose of an industrial research and assessment center established under paragraph (1), the Secretary shall take into consideration the varying capabilities of trade schools, community colleges, and union training programs.

''(g) WORKFORCE TRAINING.—

''(1) INTERNSHIPS.—The Secretary shall pay the Federal share of associated internship programs under which students work with or for industries, manufacturers, and energy service providers to implement the recommendations of industrial research and assessment centers.

''(2) APPRENTICESHIPS.—The Secretary shall pay the Federal share of associated apprenticeship programs under which—

''(A) students work with or for industries, manufacturers, and energy service providers to implement the recommendations of industrial research and assessment centers; and

''(B) employees of facilities that have received an assessment from an industrial research and assessment center work with or for an industrial research and assessment center to gain knowledge on engineering practices and processes to improve productivity and energy savings.

''(3) FEDERAL SHARE.—The Federal share of the cost of carrying out internship programs described in paragraph (1) and apprenticeship programs described in paragraph (2) shall be 50 percent.

''(h) SMALL BUSINESS LOANS.—The Administrator of the Small Business Administration shall, to the maximum extent practicable, expedite consideration of applications from eligible small business concerns for loans under the Small Business Act (15 U.S.C. 631 et seq.) to implement recommendations developed by the industrial research and assessment centers.

''(i) FUNDING.—There is authorized to be appropriated to the Secretary to carry out this section $30,000,000 for each fiscal year, to remain available until expended.''.

(c) CLERICAL AMENDMENTS.—The table of contents of the Energy Independence and Security Act of 2007 (42 U.S.C. prec. 17001) is amended—

(1) in the item relating to section 452, by striking ''Energy-intensive industries program'' and inserting ''Future of industry program''; and

(2) by adding at the end of the items relating to subtitle D of title IV the following:

''Sec. 454. Industrial research and assessment centers.''.

SEC. 1203. SUSTAINABLE MANUFACTURING INITIATIVE.

(a) IN GENERAL.—Part E of title III of the Energy Policy and Conservation Act (42 U.S.C. 6341 et seq.) is amended by adding at the end the following:

''SEC. 376. SUSTAINABLE MANUFACTURING INITIATIVE.

''(a) IN GENERAL.—As part of the Office of Energy Efficiency and Renewable Energy of the Department of Energy, the Secretary, on the request of a manufacturer, shall carry out onsite technical assessments to identify opportunities for—

''(1) maximizing the energy efficiency of industrial processes and cross-cutting systems;

''(2) preventing pollution and minimizing waste;

''(3) improving efficient use of water in manufacturing processes;

''(4) conserving natural resources; and

''(5) achieving such other goals as the Secretary determines to be appropriate.

''(b) COORDINATION.—To implement any recommendations resulting from an onsite technical assessment carried out under subsection (a) and to accelerate the adoption of new and existing technologies and processes that improve energy efficiency, the Secretary shall coordinate with—

''(1) the Advanced Manufacturing Office of the Department of Energy;

''(2) the Building Technologies Office of the Department of Energy;

''(3) the Federal Energy Management Program of the Department of Energy; and

''(4) the private sector and other appropriate agencies, including the National Institute of Standards and Technology.

''(c) RESEARCH AND DEVELOPMENT PROGRAM FOR SUSTAINABLE MANUFACTURING AND INDUSTRIAL TECHNOLOGIES AND PROCESSES.—As part of the industrial efficiency programs of the Department of Energy, the Secretary shall carry out a joint industry-government partnership program to research, develop, and demonstrate new sustainable manufacturing and industrial technologies and

processes that maximize the energy efficiency of industrial plants, reduce pollution, and conserve natural resources.''.

(b) CLERICAL AMENDMENT.—The table of contents of the Energy Policy and Conservation Act (42 U.S.C. prec. 6201) is amended by adding at the end of the items relating to part E of title III the following:

''Sec. 376. Sustainable manufacturing initiative.''.

SEC. 1204. CONFORMING AMENDMENTS.

(a) Section 106 of the Energy Policy Act of 2005 (42 U.S.C. 15811) and the item relating to such section in the table of contents of such Act are repealed.

(b) Sections 131, 132, 133, 2103, and 2107 of the Energy Policy Act of 1992 (42 U.S.C. 6348, 6349, 6350, 13453, 13456) and the items relating to such section in the table of contents of such Act are repealed.

(c) Section 2101(a) of the Energy Policy Act of 1992 (42 U.S.C. 13451(a)) is amended in the third sentence by striking ''sections 2102, 2103, 2104, 2105, 2106, 2107, and 2108'' and inserting ''sections 2102, 2104, 2105, 2106, and 2108 of this Act and section 376 of the Energy Policy and Conservation Act,''.

PART 2—EXTENDED PRODUCT SYSTEM REBATE PROGRAM

SEC. 1211. EXTENDED PRODUCT SYSTEM REBATE PROGRAM.

(a) DEFINITIONS.—In this section:

(1) ELECTRIC MOTOR.—The term ''electric motor'' has the meaning given the term in section 431.12 of title 10, Code of Federal Regulations (as in effect on the date of enactment of this Act).

(2) ELECTRONIC CONTROL.—The term ''electronic control'' means—

(A) a power converter; or

(B) a combination of a power circuit and control circuit included on 1 chassis.

(3) EXTENDED PRODUCT SYSTEM.—The term ''extended product system'' means an electric motor and any required associated electronic control and driven load that—

(A) offers variable speed or multispeed operation;

(B) offers partial load control that reduces input energy requirements (as measured in kilowatt-hours) as compared to identified base levels set by the Secretary of Energy; and

(C)(i) has greater than 1 horsepower; and

(ii) uses an extended product system technology, as determined by the Secretary of Energy.

(4) QUALIFIED EXTENDED PRODUCT SYSTEM.—

(A) IN GENERAL.—The term ''qualified extended product system'' means an extended product system that—

(i) includes an electric motor and an electronic control; and

(ii) reduces the input energy (as measured in kilowatt-hours) required to operate the extended product system by not less than 5 percent, as compared to identified base levels set by the Secretary of Energy.

(B) INCLUSIONS.—The term ''qualified extended product system'' includes commercial or industrial machinery or equipment that—

(i)(I) did not previously make use of the extended product system prior to the redesign described in subclause (II); and

(II) incorporates an extended product system that has greater than 1 horsepower into redesigned machinery or equipment; and

(ii) was previously used prior to, and was placed back into service during, calendar year 2021 or 2022.

(b) ESTABLISHMENT.—Not later than 180 days after the date of enactment of this Act, the Secretary of Energy shall establish a program to provide rebates for expenditures made by qualified entities for the purchase or installation of a qualified extended product system.

(c) QUALIFIED ENTITIES.—

(1) ELIGIBILITY REQUIREMENTS.—A qualified entity under this section shall be—

(A) in the case of a qualified extended product system described in subsection (a)(4)(A), the purchaser of the qualified extended product that is installed; and

(B) in the case of a qualified extended product system described in subsection (a)(4)(B), the manufacturer of the commercial or industrial machinery or equipment that incorporated the extended product system into that machinery or equipment.

(2) APPLICATION.—To be eligible to receive a rebate under this section, a qualified entity shall submit to the Secretary of Energy—

(A) an application in such form, at such time, and containing such information as the Secretary of Energy may require; and

(B) a certification that includes demonstrated evidence—

(i) that the entity is a qualified entity; and

(ii)(I) in the case of a qualified entity described in paragraph (1)(A)—

(aa) that the qualified entity installed the qualified extended product system during the 2 fiscal years following the date of enactment of this Act;

(bb) that the qualified extended product system meets the requirements of subsection (a)(4)(A); and

(cc) showing the serial number, manufacturer, and model number from the nameplate of the installed motor of the qualified entity on which the qualified extended product system was installed; or

(II) in the case of a qualified entity described in paragraph (1)(B), demonstrated evidence—

(aa) that the qualified extended product system meets the requirements of subsection (a)(4)(B); and

(bb) showing the serial number, manufacturer, and model number from the nameplate of the installed motor of the qualified entity with which the extended product system is integrated.

(d) AUTHORIZED AMOUNT OF REBATE.—

(1) IN GENERAL.—The Secretary of Energy may provide to a qualified entity a rebate in an amount equal to the product obtained by multiplying—

(A) an amount equal to the sum of the nameplate rated horsepower of—

(i) the electric motor to which the qualified extended product system is attached; and

(ii) the electronic control; and

(B) $25.

(2) MAXIMUM AGGREGATE AMOUNT.—A qualified entity shall not be entitled to aggregate rebates under this section in excess of $25,000 per calendar year.

(e) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $5,000,000 for each of the first 2 full fiscal years following the date of enactment of this Act, to remain available until expended.

PART 3—TRANSFORMER REBATE PROGRAM

SEC. 1221. ENERGY EFFICIENT TRANSFORMER REBATE PROGRAM.

(a) DEFINITIONS.—In this section:

(1) QUALIFIED ENERGY EFFICIENT TRANSFORMER.—The term ''qualified energy efficient transformer'' means a transformer that meets or exceeds the applicable energy conservation standards described in the tables in subsection (b)(2) and paragraphs (1) and (2) of subsection (c) of section 431.196 of title 10, Code of Federal Regulations (as in effect on the date of enactment of this Act).

(2) QUALIFIED ENERGY INEFFICIENT TRANSFORMER.—The term ''qualified energy inefficient transformer'' means a transformer with an equal number of phases and capacity to a transformer described in any of the tables in subsection (b)(2) and paragraphs (1) and (2) of subsection (c) of section 431.196 of title 10, Code of Federal Regulations (as

in effect on the date of enactment of this Act) that—

(A) does not meet or exceed the applicable energy conservation standards described in paragraph (1); and

(B)(i) was manufactured between January 1, 1987, and December 31, 2008, for a transformer with an equal number of phases and capacity as a transformer described in the table in subsection (b)(2) of section 431.196 of title 10, Code of Federal Regulations (as in effect on the date of enactment of this Act); or

(ii) was manufactured between January 1, 1992, and December 31, 2011, for a transformer with an equal number of phases and capacity as a transformer described in the table in paragraph (1) or (2) of subsection (c) of that section (as in effect on the date of enactment of this Act).

(3) QUALIFIED ENTITY.—The term ''qualified entity'' means an owner of industrial or manufacturing facilities, commercial buildings, or multifamily residential buildings, a utility, or an energy service company that fulfills the requirements of subsection (d).

(b) ESTABLISHMENT.—Not later than 90 days after the date of enactment of this Act, the Secretary of Energy shall establish a program to provide rebates to qualified entities for expenditures made by the qualified entity for the replacement of a qualified energy inefficient transformer with a qualified energy efficient transformer.

(c) REQUIREMENTS.—To be eligible to receive a rebate under this section, an entity shall submit to the Secretary of Energy an application in such form, at such time, and containing such information as the Secretary of Energy may require, including demonstrated evidence—

(1) that the entity purchased a qualified energy efficient transformer;

(2) of the core loss value of the qualified energy efficient transformer;

(3) of the age of the qualified energy inefficient transformer being replaced;

(4) of the core loss value of the qualified energy inefficient transformer being replaced—

(A) as measured by a qualified professional or verified by the equipment manufacturer, as applicable; or

(B) for transformers described in subsection (a)(2)(B)(i), as selected from a table of default values as determined by the Secretary

of Energy in consultation with applicable industry; and

(5) that the qualified energy inefficient transformer has been permanently decommissioned and scrapped.

(d) AUTHORIZED AMOUNT OF REBATE.—The amount of a rebate provided under this section shall be—

(1) for a 3-phase or single-phase transformer with a capacity of not less than 10 and not greater than 2,500 kilovolt-amperes, twice the amount equal to the difference in Watts between the core loss value (as measured in accordance with paragraphs (2) and (4) of subsection (c)) of—

(A) the qualified energy inefficient transformer; and

(B) the qualified energy efficient transformer; or

(2) for a transformer described in subsection (a)(2)(B)(i), the amount determined using a table of default rebate values by rated transformer output, as measured in kilovolt-amperes, as determined by the Secretary of Energy in consultation with applicable industry.

(e) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section

$5,000,000 for each of fiscal years 2021 and 2022, to remain available until expended.

(f) TERMINATION OF EFFECTIVENESS.—The authority provided by this section terminates on December 31, 2022.

Subtitle C—Federal Agency Energy Efficiency

SEC. 1301. ENERGY-EFFICIENT AND ENERGY-SAVING INFORMATION TECHNOLOGIES.

(a) IN GENERAL.—Subtitle C of title V of the Energy Independence and Security Act of 2007 (Public Law 110–140; 121 Stat. 1661) is amended by adding at the end the following:

"SEC. 530. ENERGY-EFFICIENT AND ENERGY-SAVING INFORMATION TECHNOLOGIES.

''(a) DEFINITIONS.—In this section:

''(1) DIRECTOR.—The term 'Director' means the Director of the Office of Management and Budget.

''(2) INFORMATION TECHNOLOGY.—The term 'information technology' has the meaning given that term in section 11101 of title 40, United States Code.

''(b) DEVELOPMENT OF IMPLEMENTATION STRATEGY.—Not later than 1 year after the date of enactment

of this section, each Federal agency shall coordinate with the Director, the Secretary, and the Administrator of the Environmental Protection Agency to develop an implementation strategy (that includes best practices and measurement and verification techniques) for the maintenance, purchase, and use by the Federal agency of energy-efficient and energy-saving information technologies at or for federally owned and operated facilities, taking into consideration the performance goals established under subsection (d).

''(c) ADMINISTRATION.—In developing an implementation strategy under subsection (b), each Federal agency shall consider—

''(1) advanced metering infrastructure;

''(2) energy-efficient data center strategies and methods of increasing asset and infrastructure utilization;

''(3) advanced power management tools;

''(4) building information modeling, including building energy management;

''(5) secure telework and travel substitution tools; and

''(6) mechanisms to ensure that the agency realizes the energy cost savings brought about through increased efficiency and utilization.

''(d) PERFORMANCE GOALS.—

''(1) IN GENERAL.—Not later than 180 days after the date of enactment of this section, the Director, in consultation with the Secretary, shall establish performance goals for evaluating the efforts of Federal agencies in improving the maintenance, purchase, and use of energy-efficient and energy-saving information technology at or for federally owned and operated facilities.

''(2) BEST PRACTICES.—The Chief Information Officers Council established under section 3603 of title 44, United States Code, shall recommend best practices for the attainment of the performance goals, which shall include Federal agency consideration of, to the extent applicable by law, the use of—

''(A) energy savings performance contracting; and

''(B) utility energy services contracting.

''(e) REPORTS.—

''(1) AGENCY REPORTS.—Each Federal agency shall include in the report of the agency under section 527 a description of the efforts and results of the agency under this section.

''(2) OMB GOVERNMENT EFFICIENCY REPORTS AND SCORECARDS.—Effective beginning not later than October 1, 2021, the Director shall include in the annual report and scorecard of the Director required under section 528 a description of the efforts and results of Federal agencies under this section.''.

(b) CONFORMING AMENDMENT.—The table of contents for the Energy Independence and Security Act of 2007 is amended by adding after the item relating to section 529 the following:

''Sec. 530. Energy-efficient and energy-saving information technologies.''.

SEC. 1302. ENERGY EFFICIENT DATA CENTERS.

Section 453 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17112) is amended—

(1) in subsection (b)—

(A) in paragraph (2)(D)(iv), by striking ''determined by the organization'' and inserting ''proposed by the stakeholders''; and

(B) by striking paragraph (3); and

(2) by striking subsections (c) through (g) and inserting the following:

''(c) STAKEHOLDER INVOLVEMENT.—The Secretary and the Administrator shall carry out subsection (b) in collaboration with information technology industry and other key stakeholders, with the goal of producing results that accurately reflect the most relevant and useful infor-

mation. In such collaboration, the Secretary and the Administrator shall pay particular attention to organizations that—

''(1) have members with expertise in energy efficiency and in the development, operation, and functionality of data centers, information technology equipment, and software, such as representatives of hardware manufacturers, data center operators, and facility managers;

''(2) obtain and address input from Department of Energy National Laboratories or any college, university, research institution, industry association, company, or public interest group with applicable expertise;

''(3) follow—

''(A) commonly accepted procedures for the development of specifications; and

''(B) accredited standards development processes; and

''(4) have a mission to promote energy efficiency for data centers and information technology.

''(d) MEASUREMENTS AND SPECIFICATIONS.—The Secretary and the Administrator shall consider and assess the adequacy of the specifications, measurements, best practices, and benchmarks described in subsection (b) for

use by the Federal Energy Management Program, the Energy Star Program, and other efficiency programs of the Department of Energy or the Environmental Protection Agency.

''(e) STUDY.—The Secretary, in collaboration with the Administrator, shall, not later than 4 years after the date of enactment of the Clean Economy Jobs and Innovation Act, make available to the public an update to the report of the Lawrence Berkeley National Laboratory entitled 'United States Data Center Energy Usage Report' and dated June, 2016 (prepared as an update to the Report to Congress on Server and Data Center Energy Efficiency, published on August 2, 2007, under section 1 of Public Law 109–431 (120 Stat. 2920)), that includes—

''(1) a comparison and gap analysis of the estimates and projections contained in the report with new data regarding the period from 2015 through 2020;

''(2) an analysis considering the impact of information technologies, including virtualization and cloud computing, in the public and private sectors;

''(3) an evaluation of the impact of the combination of cloud platforms, mobile devices, social media, and big data on data center energy usage;

''(4) an evaluation of water usage in data centers and recommendations for reductions in such water usage; and

''(5) updated projections and recommendations for best practices through fiscal year 2025.

''(f) DATA CENTER ENERGY PRACTITIONER PROGRAM.—The Secretary, in collaboration with key stakeholders and the Director of the Office of Management and Budget, shall maintain a data center energy practitioner program that leads to the certification of energy practitioners qualified to evaluate the energy usage and efficiency opportunities in federally owned and operated data centers. Each Federal agency shall consider having the data centers of the agency evaluated every 4 years, in accordance with section 543(f) of the National Energy Conservation Policy Act, by energy practitioners certified pursuant to such program.

''(g) OPEN DATA INITIATIVE.—The Secretary, in collaboration with key stakeholders and the Office of Management and Budget, shall establish an open data initiative relating to energy usage at federally owned and operated data centers, with the purpose of making such data available and accessible in a manner that encourages further data center innovation, optimization, and consolida-

tion. In establishing the initiative, the Secretary shall consider the use of the online Data Center Maturity Model.

''(h) INTERNATIONAL SPECIFICATIONS AND METRICS.—The Secretary, in collaboration with key stakeholders, shall actively participate in efforts to harmonize global specifications and metrics for data center energy and water efficiency.

''(i) DATA CENTER UTILIZATION METRIC.—The Secretary, in collaboration with key stakeholders, shall facilitate in the development of an efficiency metric that measures the energy efficiency of a data center (including equipment and facilities).

''(j) PROTECTION OF PROPRIETARY INFORMATION.—The Secretary and the Administrator shall not disclose any proprietary information or trade secrets provided by any individual or company for the purposes of carrying out this section or the programs and initiatives established under this section.''.

Subtitle D—Regulatory Provisions

PART 1—FEDERAL GREEN BUILDINGS

SEC. 1401. HIGH-PERFORMANCE GREEN FEDERAL BUILDINGS.

Section 436(h) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17092(h)) is amended—

(1) in the subsection heading, by striking ''SYSTEM'' and inserting ''SYSTEMS'';

(2) by striking paragraph (1) and inserting the following:

''(1) IN GENERAL.—Based on an ongoing review, the Federal Director shall identify and shall provide to the Secretary pursuant to section 305(a)(3)(D) of the Energy Conservation and Production Act (42 U.S.C. 6834(a)(3)(D)) a list of those certification systems that the Director identifies as the most likely to encourage a comprehensive and environmentally sound approach to certification of green buildings.''; and

(3) in paragraph (2)—

(A) in the matter preceding subparagraph (A), by striking ''system'' and inserting ''systems'';

(B) by striking subparagraph (A) and inserting the following:

''(A) an ongoing review provided to the Secretary pursuant to section 305(a)(3)(D) of the Energy Conservation and Production Act (42 U.S.C. 6834(a)(3)(D)), which shall—

''(i) be carried out by the Federal Director to compare and evaluate standards; and

''(ii) allow any developer or administrator of a rating system or certification system to be included in the review;'';

(C) in subparagraph (E)(v), by striking ''and'' after the semicolon at the end;

(D) in subparagraph (F), by striking the period at the end and inserting a semicolon; and

(E) by adding at the end the following:

''(G) a finding that, for all credits addressing the sourcing of grown, harvested, or mined materials, the system rewards the use of products that have obtained certifications of responsible sourcing, such as certifications provided by the Sustainable Forestry Initiative, the Forest Stewardship Council, the American Tree Farm System, or the Programme for the Endorsement of Forest Certification; and

''(H) a finding that the system incorporates life-cycle assessment as a credit pathway.''.

PART 2—ENERGY AND WATER PERFORMANCE REQUIREMENTS FOR FEDERAL BUILDINGS

SEC. 1411. FEDERAL ENERGY MANAGEMENT PROGRAM.

(a) FINDINGS.—Congress finds the following:

(1) The Federal Government is the largest energy user in the United States.

(2) Reducing energy and water use in Federal facilities—

(A) saves taxpayer dollars;

(B) reduces greenhouse gas emissions from the Federal sector; and

(C) increases employee comfort and productivity.

(3) It is important for the Federal Government to—

(A) develop goals for energy and water use reduction in Federal facilities; and

(B) to the maximum extent practicable, take measures that are life cycle cost effective.

(b) SENSE OF CONGRESS.—It is the sense of Congress that Federal agencies should—

(1) for each of fiscal years 2020 through 2030, reduce average building energy intensity (as measured in British thermal units per gross square foot) at facilities of the agency by 2.5 percent each fiscal year, relative to the average building energy inten-

sity of the facilities of the agency in fiscal year 2018; and

(2) for each of fiscal years 2020 through 2030, improve water use efficiency and management, including stormwater management, at facilities of the agency by reducing agency water consumption intensity—

(A) by reducing the potable water consumption by 54 percent by fiscal year 2030, relative to the potable water consumption of the agency in fiscal year 2007, through reductions of 2 percent each fiscal year (as measured in gallons per gross square foot);

(B) by reducing the industrial, landscaping, and agricultural water consumption of the agency, as compared to a baseline of that consumption by the agency in fiscal year 2010, through reductions of 2 percent each fiscal year (as measured in gallons); and

(C) by installing appropriate infrastructure features on federally owned property to improve stormwater and wastewater management.

(c) ENERGY MANAGEMENT REQUIREMENTS.—Section 543 of the National Energy Conservation Policy Act

(42 U.S.C. 8253) is amended by adding at the end the following:

''(h) FEDERAL ENERGY MANAGEMENT PROGRAM.—

''(1) IN GENERAL.—The Secretary shall carry out a program, to be known as the 'Federal Energy Management Program' (referred to in this subsection as the 'Program'), to facilitate the implementation by the Federal Government of cost-effective energy and water management and energy-related investment practices—

''(A) to coordinate and strengthen Federal energy and water resilience; and

''(B) to promote environmental stewardship.

''(2) FEDERAL DIRECTOR.—The Secretary shall appoint an individual to serve as the director of the Program (referred to in this subsection as the 'Federal Director'), which shall be a career position in the Senior Executive service, to administer the Program.

''(3) PROGRAM ACTIVITIES.—

''(A) STRATEGIC PLANNING AND TECHNICAL ASSISTANCE.—In administering the Program, the Federal Director shall—

"(i) provide technical assistance and project implementation support and guidance to agencies to identify, implement, procure, and track energy and water conservation measures required under this Act and under other provisions of law;

"(ii) in coordination with the Administrator of the General Services Administration, establish appropriate procedures, methods, and best practices for use by agencies to select, monitor, and terminate contracts entered into pursuant to a utility incentive program under section 546(c) with utilities;

"(iii) carry out the responsibilities of the Secretary under section 801, as determined appropriate by the Secretary;

"(iv) establish and maintain internet-based information resources and project tracking systems and tools for energy and water management;

"(v) coordinate comprehensive and strategic approaches to energy and water resilience planning for agencies; and

"(vi) establish a recognition program for Federal achievement in energy and water management, energy-related investment practices, environmental stewardship, and other relevant areas, through events such as individual recognition award ceremonies and public announcements.

"(B) ENERGY AND WATER MANAGEMENT AND REPORTING.—In administering the Program, the Federal Director shall—

"(i) track and report on the progress of agencies in meeting the requirements of the agency under this section;

"(ii) make publicly available agency performance data required under—

"(I) this section and sections 544, 546, 547, and 548; and

"(II) section 203 of the Energy Policy Act of 2005 (42 U.S.C. 15852);

"(iii)(I) collect energy and water use and consumption data from each agency; and

"(II) based on that data, submit to each agency a report that will facilitate the

energy and water management, energy-related investment practices, and environmental stewardship of the agency in support of Federal goals under this Act and under other provisions of law;

''(iv) carry out the responsibilities of the Secretary under section 305 of the Energy Conservation and Production Act (42 U.S.C. 6834);

''(v) in consultation with the Administrator of the General Services Administration, acting through the head of the Office of High-Performance Green Buildings, establish and implement sustainable design principles for Federal facilities; and

''(vi) designate products that meet the highest energy conservation standards for categories not covered under the Energy Star program established under section 324A of the Energy Policy and Conservation Act (42 U.S.C. 6294a).

''(C) FEDERAL INTERAGENCY COORDINATION.—In administering the Program, the Federal Director shall—

"(i) develop and implement accredited training consistent with existing Federal programs and activities—

"(I) relating to energy and water use, management, and resilience in Federal facilities, energy-related investment practices, and environmental stewardship; and

"(II) that includes in-person training, internet-based programs, and national in-person training events;

"(ii) carry out the functions of the Secretary with respect to the Interagency Energy Management Task Force under section 547; and

"(iii) report on the implementation of the priorities of the President, including Executive orders, relating to energy and water use in Federal facilities, in coordination with—

"(I) the Office of Management and Budget;

"(II) the Council on Environmental Quality; and

"(III) any other entity, as considered necessary by the Federal Director.

"(D) FACILITY AND FLEET OPTIMIZATION.—In administering the Program, the Federal Director shall develop guidance, supply assistance to, and track the progress of agencies—

"(i) in conducting portfolio-wide facility energy and water resilience planning and project integration;

"(ii) in building new construction and major renovations to meet the sustainable design and energy and water performance standards required under this section;

"(iii) in developing guidelines for—

"(I) facility commissioning; and

"(II) facility operations and maintenance; and

"(iv) in coordination with the Administrator of the General Services Administration, in meeting statutory and agency goals for Federal fleet vehicles.

''(4) MANAGEMENT COUNCIL.—The Federal Director shall establish a management council to advise the Federal Director that shall—

''(A) convene not less frequently than once every quarter; and

''(B) consist of representatives from—

''(i) the Council on Environmental Quality;

''(ii) the Office of Management and Budget; and

''(iii) the Office of Federal High-Performance Green Buildings in the General Services Administration.

''(5) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary to carry out this subsection $36,000,000 for each of fiscal years 2021 through 2025.''.

SEC. 1412. FEDERAL BUILDING ENERGY EFFICIENCY PERFORMANCE STANDARDS; CERTIFICATION SYSTEM AND LEVEL FOR GREEN BUILDINGS.

(a) DEFINITIONS.—Section 303 of the Energy Conservation and Production Act (42 U.S.C. 6832) is further amended by adding at the end the following:

''(19) MAJOR RENOVATION.—The term 'major renovation' means a modification of the energy sys-

tems of a building that is sufficiently extensive to ensure that the entire building can achieve compliance with applicable energy standards for new buildings, as established by the Secretary.''.

(b) FEDERAL BUILDING EFFICIENCY STANDARDS.—Section 305 of the Energy Conservation and Production Act (42 U.S.C. 6834) is amended—

(1) in subsection (a)(3)—

(A) by striking ''(3)(A) Not later than'' and all that follows through subparagraph (B) and inserting the following:

''(3) REVISED FEDERAL BUILDING ENERGY EFFICIENCY PERFORMANCE STANDARDS; CERTIFICATION FOR GREEN BUILDINGS.—

''(A) REVISED FEDERAL BUILDING ENERGY EFFICIENCY PERFORMANCE STANDARDS.—

''(i) IN GENERAL.—Not later than 1 year after the date of enactment of the Clean Economy Jobs and Innovation Act, the Secretary shall establish, by regulation, revised Federal building energy efficiency performance standards that require that—

"(I) subject to clause (ii), new Federal buildings and Federal buildings with major renovations—

"(aa) meet or exceed the most recently published version of the International Energy Conservation Code (in the case of residential buildings) or ASHRAE Standard 90.1 (in the case of commercial buildings) as of the date of enactment of the Clean Economy Jobs and Innovation Act; and

"(bb) meet or exceed the energy provisions of the State and local building codes applicable to the building if the codes are more stringent than the most recently published version of the International Energy Conservation Code or ASHRAE Standard 90.1 as of the date of enactment of the Clean Economy Jobs and Innovation Act, as applicable;

"(II) unless demonstrated not to be life cycle cost-effective for new Federal buildings and Federal buildings with major renovations—

"(aa) the buildings shall be designed to achieve energy consumption levels that are not less than 30 percent below the levels established in the most recently published version of the International Energy Conservation Code or the ASHRAE Standard, as of the date of enactment of the Clean Economy Jobs and Innovation Act, as appropriate; and

"(bb) sustainable design principles are applied to the location, siting, design, and construction of all new Federal buildings and replacement Federal buildings;

"(III) if water is used to achieve energy efficiency, water conservation technologies shall be applied to the ex-

tent that the technologies are life-cycle cost effective; and

''(IV) if life-cycle cost effective, as compared to other reasonably available technologies, not less than 30 percent of the hot water demand for each new Federal building or Federal building undergoing a major renovation be met through the installation and use of solar hot water heaters.

''(ii) EXCEPTION.—Clause (i)(I) shall not apply to the unaltered portions of Federal buildings and systems that have undergone major renovations.

''(B) UPDATES.—Not later than 1 year after the date of approval of each subsequent revision of the ASHRAE Standard or the International Energy Conservation Code, as appropriate, the Secretary shall determine whether the revised standards established under subclauses (I) and (II) of subparagraph (A)(i) should be updated to reflect the revisions, based on the energy savings and life cycle cost-effectiveness of the revisions.'';

(B) in subparagraph (C), by striking ''(C) In the budget request'' and inserting the following:

''(C) BUDGET REQUEST.—In the budget request''; and

(C) in subparagraph (D)—

(i) by striking subclause (III) of clause (i);

(ii) by striking ''(D) Not later than'' and inserting the following:

''(D) STANDARDS; CERTIFICATION FOR GREEN BUILDINGS.—

''(i) STANDARDS.—Not later than'';

(iii) by striking ''standards that require that:'' and all that follows through ''For new Federal buildings'' and inserting ''standards that require that, for new buildings''; and

(iv) by striking clauses (ii) through (vii) and inserting the following:

''(ii) SUSTAINABLE DESIGN PRINCIPLES.—Sustainable design principles shall be applied to the siting, design, and construction of buildings covered by this subparagraph.

"(iii) SELECTION OF CERTIFICATION SYSTEMS.—The Secretary, after reviewing the findings of the Federal Director under section 436(h) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17092(h)), in consultation with the Administrator of General Services, and in consultation with the Secretary of Defense relating to those facilities under the custody and control of the Department of Defense, shall determine those certification systems for green commercial and residential buildings that the Secretary determines to be the most likely to encourage a comprehensive and environmentally sound approach to certification of green buildings.

"(iv) BASIS FOR SELECTION.—The determination of the certification systems under clause (iii) shall be based on ongoing review of the findings of the Federal Director under section 436(h) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17092(h)) and the criteria described in clause (vi).

"(v) ADMINISTRATION.—In determining certification systems under this subparagraph, the Secretary shall—

"(I) make a separate determination for all or part of each system; and

"(II) confirm that the criteria used to support the selection of building products, materials, brands, and technologies—

"(aa) are based on relevant technical data;

"(bb) use and reward evaluation of health, safety, and environmental risks and impacts across the lifecycle of the building product, material, brand, or technology, including methodologies generally accepted by the applicable scientific disciplines;

"(cc) as practicable, give preference to performance standards instead of prescriptive measures; and

"(dd) reward continual improvements in the lifecycle management of health, safety, and environmental risks and impacts.

"(vi) CONSIDERATIONS.—In determining the green building certification systems under this subparagraph, the Secretary shall take into consideration—

"(I) the ability and availability of assessors and auditors to independently verify the criteria and measurement of metrics at the scale necessary to implement this subparagraph;

"(II) the ability of the applicable certification organization to collect and reflect public comment;

"(III) the ability of the standard to be developed and revised through a consensus-based process;

"(IV) an evaluation of the robustness of the criteria for a high-performance green building, which shall give credit for promoting—

"(aa) efficient and sustainable use of water, energy, and other natural resources;

"(bb) use of renewable energy sources;

"(cc) improved indoor environmental quality through enhanced indoor air quality, thermal comfort, acoustics, day lighting, pollutant source control, and use of low-emission materials and building system controls;

"(dd) the responsible sourcing of grown, harvested, or mined materials, including through certifications of responsible sourcing, such as certifications provided by the Forest Stewardship Council, the Sustainable Forestry Initiative, the American Tree Farm System, or the Programme for the Endorsement of Forest Certification; and

''(ee) such other criteria as the Secretary determines to be appropriate; and

''(V) national recognition within the building industry.

''(vii) REVIEW.—The Secretary, in consultation with the Administrator of General Services and the Secretary of Defense, shall conduct an ongoing review to evaluate and compare private sector green building certification systems, taking into account—

''(I) the criteria described in clause (vi); and

''(II) the identification made by the Federal Director under section 436(h) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17092(h)).

''(viii) EXCLUSIONS.—

''(I) IN GENERAL.—Subject to subclause (II), if a certification system fails to meet the review requirements of clause (vi), the Secretary shall—

"(aa) identify the portions of the system, whether prerequisites, credits, points, or otherwise, that meet the review criteria of clause (vi);

"(bb) determine the portions of the system that are suitable for use; and

"(cc) exclude all other portions of the system from identification and use.

"(II) ENTIRE SYSTEMS.—The Secretary shall exclude an entire system from use if an exclusion under subclause (I)—

"(aa) impedes the integrated use of the system;

"(bb) creates disparate review criteria or unequal point access for competing materials; or

"(cc) increases agency costs of the use.

"(ix) INTERNAL CERTIFICATION PROCESSES.—The Secretary may by rule allow Federal agencies to develop internal certifi-

cation processes, using certified professionals, in lieu of certification by certification entities identified under clause (iii).

''(x) PRIVATIZED MILITARY HOUSING.—With respect to privatized military housing, the Secretary of Defense, after consultation with the Secretary may, through rulemaking, develop alternative certification systems and levels than the systems and levels identified under clause (iii) that achieve an equivalent result in terms of energy savings, sustainable design, and green building performance.

''(xi) WATER CONSERVATION TECHNOLOGIES.—In addition to any use of water conservation technologies otherwise required by this section, water conservation technologies shall be applied to the extent that the technologies are life-cycle cost-effective.

''(xii) EFFECTIVE DATE.—

''(I) DETERMINATIONS MADE AFTER DECEMBER 31, 2020.—The amendments made by section 1422(b)(1)(C) of the Clean Economy

Jobs and Innovation Act shall apply to any determination made by a Federal agency after December 31, 2020.

''(II) DETERMINATIONS MADE ON OR BEFORE DECEMBER 31, 2020.—This subparagraph (as in effect on the day before the date of enactment of the Clean Economy Jobs and Innovation Act) shall apply to any use of a certification system for green commercial and residential buildings by a Federal agency on or before December 31, 2020.''; and

(2) by striking subsections (c) and (d) and inserting the following:

''(c) PERIODIC REVIEW.—The Secretary shall—

''(1) once every 5 years, review the Federal building energy standards established under this section; and

''(2) on completion of a review under paragraph (1), if the Secretary determines that significant energy savings would result, upgrade the standards to include all new energy efficiency and renewable energy measures that are technologically feasible and economically justified.''.

(c) FEDERAL COMPLIANCE.—Section 306 of the Energy Conservation and Production Act (42 U.S.C. 6835) is amended—

(1) in subsection (a)—

(A) in paragraph (1)—

(i) by striking ''(1) The head'' and inserting the following:

''(1) IN GENERAL.—The head''; and

(ii) by striking ''assure that new Federal buildings'' and inserting ''ensure that new Federal buildings and Federal buildings with major renovations''; and

(B) in paragraph (2)—

(i) by striking the second sentence and inserting the following:

''(B) PROCEDURES.—The Architect of the Capitol shall adopt procedures necessary to ensure that the buildings referred to in subparagraph (A) meet or exceed the standards described in that subparagraph.''; and

(ii) in the first sentence—

(I) by inserting ''and Federal buildings with major renovations'' after ''new buildings''; and

(II) by striking ''(2) The Federal'' and inserting the following:

''(2) APPLICABILITY.—

''(A) IN GENERAL.—The Federal''; and

(2) in subsection (b)—

(A) by striking the subsection heading and inserting ''EXPENDITURES''; and

(B) by inserting ''or a Federal building with major renovations'' after ''new Federal building''.

SEC. 1413. USE OF ENERGY AND WATER EFFICIENCY MEASURES IN FEDERAL BUILDINGS.

(a) FINDINGS.—Congress finds the following:

(1) Performance contracting is a private financing tool with guaranteed energy savings and has been used by the Federal Government for nearly 30 years.

(2) Energy savings performance contracts and utility energy service contacts allow the Government to invest in infrastructure using private sector financing and expertise, with a guarantee of results.

(3) Use of performance contracting has saved the Government and taxpayers more than $18,000,000,000.

(4) By law, performance contracts are guaranteed to provide savings to Federal agencies.

(5) On average, performance contracts achieve savings in excess of the contractual and statutory guarantee.

(6) In a fiscally constrained environment, performance contracting helps to address the Federal Government's backlog of maintenance and supplement scarce operations and maintenance dollars.

(7) The House of Representatives, the Senate, and the Office of Management and Budget have all acted to recognize the value of performance contracts by providing distinct budgetary consideration of them; in the 115th Congress, the House of Representatives included section 5109 in H. Con. Res. 71 to enable the greater use of performance contracting and to recognize their full cost savings benefits.

(8) Federal agencies are not taking full advantage of the cost-effective energy efficiency measures that are available and documented.

(9) Using performance contracts to carry out such energy efficiency measures would benefit taxpayers, the economy, and the environment.

(b) REPORTS.—Section 548(b) of the National Energy Conservation Policy Act (42 U.S.C. 8258(b)) is amended—

(1) in paragraph (3), by striking ''and'' at the end;

(2) in paragraph (4), by striking the period at the end and inserting ''; and''; and

(3) by adding at the end the following:

''(5)(A) the status of the energy savings performance contracts and utility energy service contracts of each agency, to the extent that the information is not duplicative of information provided to the Secretary under a separate authority;

''(B) the quantity and investment value of the contracts for the previous year;

''(C) the guaranteed energy savings, or for contracts without a guarantee, the estimated energy savings, for the previous year, as compared to the measured energy savings for the previous year;

''(D) a forecast of the estimated quantity and investment value of contracts anticipated in the following year for each agency; and

''(E)(i) a comparison of the information described in subparagraph (B) and the forecast de-

scribed in subparagraph (D) in the report of the previous year; and

''(ii) if applicable, the reasons for any differences in the data compared under clause (i).''.

Subtitle E—HOPE for HOMES

SEC. 1501. DEFINITIONS.

In this subtitle:

(1) CONTRACTOR CERTIFICATION.—The term ''contractor certification'' means an industry recognized certification that may be obtained by a residential contractor to advance the expertise and education of the contractor in energy efficiency retrofits of residential buildings, including—

(A) a certification provided by—

(i) the Building Performance Institute;

(ii) the Air Conditioning Contractors of America;

(iii) the National Comfort Institute;

(iv) the North American Technician Excellence;

(v) RESNET;

(vi) the United States Green Building Council; or

(vii) Home Innovation Research Labs; and

(B) any other certification the Secretary determines appropriate for purposes of the Home Energy Savings Retrofit Rebate Program.

(2) CONTRACTOR COMPANY.—The term ''contractor company'' means a company—

(A) the business of which is to provide services to residential building owners with respect to HVAC systems, insulation, air sealing, or other services that are approved by the Secretary;

(B) that holds the licenses and insurance required by the State in which the company provides services; and

(C) that provides services for which a partial system rebate, measured performance rebate, or modeled performance rebate may be provided pursuant to the Home Energy Savings Retrofit Rebate Program.

(3) ENERGY AUDIT.—The term ''energy audit'' means an inspection, survey, and analysis of the energy use of a building, including the building envelope and HVAC system.

(4) HOME.—The term ''home'' means a manufactured home (as such term is defined in section 603 of the National Manufactured Housing Construction and Safety Standards Act of 1974 (42 U.S.C. 5402)), or a residential dwelling unit in a building with no more than 4 dwelling units that—

(A) is located in the United States;

(B) was constructed before the date of enactment of this Act; and

(C) is occupied at least 6 months out of the year.

(5) HOME ENERGY SAVINGS RETROFIT REBATE PROGRAM.—The term ''Home Energy Savings Retrofit Rebate Program'' means the Home Energy Savings Retrofit Rebate Program established under section 1521.

(6) HOMEOWNER.—The term ''homeowner'' means the owner of an owner-occupied home or a tenant-occupied home.

(7) HOME VALUATION CERTIFICATION.—The term ''home valuation certification'' means the following home assessments:

(A) Home Energy Score.

(B) PEARL Certification.

(C) National Green Building Standard.

(D) LEED.

(E) Any other assessment the Secretary determines to be appropriate.

(8) HOPE QUALIFICATION.—The term ''HOPE Qualification'' means the qualification described in section 1513.

(9) HOPE TRAINING CREDIT.—The term ''HOPE training credit'' means a HOPE training task credit or a HOPE training supplemental credit.

(10) HOPE TRAINING TASK CREDIT.—The term ''HOPE training task credit'' means a credit described in section 1512(a).

(11) HOPE TRAINING SUPPLEMENTAL CREDIT.—The term ''HOPE training supplemental credit'' means a credit described in section 1512(b).

(12) HVAC SYSTEM.—The term ''HVAC system'' means a system—

(A) consisting of a heating component, a ventilation component, and an air-conditioning component; and

(B) which components may include central air conditioning, a heat pump, a furnace, a boiler, a rooftop unit, and a window unit.

(13) MEASURED PERFORMANCE REBATE.—The term ''measured performance rebate'' means a re-

bate provided in accordance with section 1523 and described in subsection (e) of that section.

(14) MODELED PERFORMANCE REBATE.—The term ''modeled performance rebate'' means a rebate provided in accordance with section 1523 and described in subsection (d) of that section.

(15) MODERATE INCOME.—The term ''moderate income'' means, with respect to a household, a household with an annual income that is less than 80 percent of the area median income, as determined annually by the Department of Housing and Urban Development.

(16) MULTIFAMILY BUILDING.—The term ''multifamily building'' means a structure with 5 or more tenant-occupied residential dwelling units that—

(A) is located in the United States;

(B) was constructed before the date of enactment of this Act; and

(C) is occupied at least 6 months out of the year.

(17) MULTIFAMILY BUILDING OWNER.—The term ''multifamily building owner'' means the owner of a tenant-occupied multifamily building.

(18) PARTIAL SYSTEM REBATE.—The term ''partial system rebate'' means a rebate provided in accordance with section 1522.

(19) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(20) STATE.—The term ''State'' includes—

(A) a State;

(B) the District of Columbia;

(C) the Commonwealth of Puerto Rico;

(D) Guam;

(E) American Samoa;

(F) the Commonwealth of the Northern Mariana Islands;

(G) the United States Virgin Islands; and

(H) any other territory or possession of the United States.

(21) STATE ENERGY OFFICE.—The term ''State energy office'' means the office or agency of a State responsible for developing the State energy conservation plan for the State under section 362 of the Energy Policy and Conservation Act (42 U.S.C. 6322).

PART 1—HOPE TRAINING

SEC. 1511. NOTICE FOR HOPE QUALIFICATION TRAINING AND GRANTS.

Not later than 30 days after the date of enactment of this Act, the Secretary, acting through the Director of the Building Technologies Office of the Department of Energy, shall issue a notice that includes—

(1) criteria established under section 1512 for approval by the Secretary of courses for which credits may be issued for purposes of a HOPE Qualification;

(2) a list of courses that meet such criteria and are so approved; and

(3) information on how individuals and entities may apply for grants under this part.

SEC. 1512. COURSE CRITERIA.

(a) HOPE TRAINING TASK CREDIT.—

(1) CRITERIA.—The Secretary shall establish criteria for approval of a course for which a credit, to be known as a HOPE training task credit, may be issued, including that such course—

(A) is equivalent to at least 30 hours in total course time;

(B) is accredited by the Interstate Renewable Energy Council or is determined to be equivalent by the Secretary;

(C) is, with respect to a particular job, aligned with the relevant National Renewable Energy Laboratory Job Task Analysis, or other credentialing program foundation that helps identify the necessary core knowledge areas, critical work functions, or skills, as approved by the Secretary;

(D) has established learning objectives; and

(E) includes, as the Secretary determines appropriate, an appropriate assessment of such learning objectives that may include a final exam, to be proctored on-site or through remote proctoring, or an in-person field exam.

(2) INCLUDED COURSES.—The Secretary shall approve one or more courses that meet the criteria described in paragraph (1) for training related to—

(A) contractor certification;

(B) energy auditing or assessment, including energy audits and assessments relevant to multifamily buildings;

(C) home and multifamily building energy systems (including HVAC systems);

(D) insulation installation and air leakage control;

(E) health and safety regarding the installation of energy efficiency measures or health and safety impacts associated with energy efficiency retrofits; and

(F) indoor air quality.

(b) HOPE TRAINING SUPPLEMENTAL CREDIT CRITERIA.—The Secretary shall establish criteria for approval of a course for which a credit, to be known as a HOPE training supplemental credit, may be issued, including that such course provides—

(1) training related to—

(A) small business success, including management, home energy efficiency software, or general accounting principles;

(B) the issuance of a home valuation certification;

(C) the use of wifi-enabled technology in an energy efficiency upgrade; or

(D) understanding and being able to participate in the Home Energy Savings Retrofit Rebate Program; and

(2) as the Secretary determines appropriate, an appropriate assessment of such training that may include a final exam, to be proctored on-site or

through remote proctoring, or an in-person field exam.

(c) EXISTING APPROVED COURSES.—The Secretary may approve a course that meets the applicable criteria established under this section that is approved by the applicable State energy office or relevant State agency with oversight authority for residential energy efficiency programs.

(d) IN-PERSON AND ONLINE TRAINING.—An online course approved pursuant to this section may be conducted in-person, but may not be offered exclusively in-person.

SEC. 1513. HOPE QUALIFICATION.

(a) ISSUANCE OF CREDITS.—

(1) IN GENERAL.—The Secretary, or an entity authorized by the Secretary pursuant to paragraph (2), may issue—

(A) a HOPE training task credit to any individual that completes a course that meets applicable criteria under section 1512; and

(B) a HOPE training supplemental credit to any individual that completes a course that meets the applicable criteria under section 1512.

(2) OTHER ENTITIES.—The Secretary may authorize a State energy office implementing an authorized program under subsection (b)(2), an organization described in section 1514(b), and any other entity the Secretary determines appropriate, to issue HOPE training credits in accordance with paragraph (1).

(b) HOPE QUALIFICATION.—

(1) IN GENERAL.—The Secretary may certify that an individual has achieved a qualification, to be known as a HOPE Qualification, that indicates that the individual has received at least 3 HOPE training credits, of which at least 2 shall be HOPE training task credits.

(2) STATE PROGRAMS.—The Secretary may authorize a State energy office to implement a program to provide HOPE Qualifications in accordance with this part.

SEC. 1514. GRANTS.

(a) IN GENERAL.—The Secretary shall, to the extent amounts are made available in appropriations Acts for such purposes, provide grants to support the training of individuals toward the completion of a HOPE Qualification.

(b) PROVIDER ORGANIZATIONS.—

(1) IN GENERAL.—The Secretary may provide a grant of up to $20,000 under this section to an organization to provide training online, including establishing, modifying, or maintaining the online systems, staff time, and software and online program management, through a course that meets the applicable criteria established under section 1512.

(2) CRITERIA.—In order to receive a grant under this subsection, an organization shall be—

(A) a nonprofit organization;

(B) an educational institution; or

(C) an organization that has experience providing training to contractors that work with the weatherization assistance program implemented under part A of title IV of the Energy Conservation and Production Act (42 U.S.C. 6861 et seq.) or equivalent experience, as determined by the Secretary.

(3) ADDITIONAL CERTIFICATIONS.—In addition to any grant provided under paragraph (1), the Secretary may provide an organization up to $5,000 for each additional course for which a HOPE training credit may be issued that is offered by the organization.

(c) CONTRACTOR COMPANY.—The Secretary may provide a grant under this section of $1,000 per employee to a contractor company, up to a maximum of $10,000, to reimburse the contractor company for training costs for employees, and any home technology support needed for an employee to receive training pursuant to this section. Grant funds provided under this subsection may be used to support wages of employees during training.

(d) TRAINEES.—The Secretary may provide a grant of up to $1,000 under this section to an individual who receives a HOPE Qualification.

(e) STATE ENERGY OFFICE.—The Secretary may provide a grant under this section to a State energy office of up to $25,000 to implement an authorized program under section 1513(b).

SEC. 1515. AUTHORIZATION OF APPROPRIATIONS.

There is authorized to be appropriated to carry out this part $500,000,000 for the period of fiscal years 2021 through 2025, to remain available until expended.

PART 2—HOME ENERGY SAVINGS RETROFIT REBATE PROGRAM

SEC. 1521. ESTABLISHMENT OF HOME ENERGY SAVINGS RETROFIT REBATE PROGRAM.

The Secretary shall establish a program, to be known as the Home Energy Savings Retrofit Rebate Program, to—

(1) provide rebates in accordance with section 1522; and

(2) provide grants to States to carry out programs to provide rebates in accordance with section 1523.

SEC. 1522. PARTIAL SYSTEM REBATES.

(a) AMOUNT OF REBATE.—In carrying out the Home Energy Savings Retrofit Rebate Program, and subject to the availability of appropriations for such purpose, the Secretary shall provide a homeowner or multifamily building owner a rebate, to be known as a partial system rebate, of, except as provided in section 1524, up to—

(1) $800 for the purchase and installation of insulation and air sealing within a home of the homeowner or the household living in a multifamily building; and

(2) $1,500 for the purchase and installation of insulation and air sealing within a home of the homeowner or the household living in a multifamily

building and replacement of an HVAC system, the heating component of an HVAC system, or the cooling component of an HVAC system, of such home.

(b) SPECIFICATIONS.—

(1) COST.—The amount of a partial system rebate provided under this section shall, except as provided in section 1524, not exceed 30 percent of cost of the purchase and installation of insulation and air sealing under subsection (a)(1), or the purchase and installation of insulation and air sealing and replacement of an HVAC system, the heating component of an HVAC system, or the cooling component of an HVAC system, under subsection (a)(2). Labor may be included in such cost but may not exceed—

(A) in the case of a rebate under subsection (a)(1), 50 percent of such cost; and

(B) in the case of a rebate under subsection (a)(2), 25 percent of such cost.

(2) REPLACEMENT OF AN HVAC SYSTEM, THE HEATING COMPONENT OF AN HVAC SYSTEM, OR THE COOLING COMPONENT OF AN HVAC SYSTEM.—In order to qualify for a partial system rebate described in subsection (a)(2)—

(A) any HVAC system, heating component of an HVAC system, or cooling component of

an HVAC system installed shall be Energy Star Most Efficient certified;

(B) installation of such an HVAC system, the heating component of an HVAC system, or the cooling component of an HVAC system, shall be completed in accordance with standards specified by the Secretary that are at least as stringent as the applicable guidelines of the Air Conditioning Contractors of America that are in effect on the date of enactment of this Act;

(C) if ducts are present, replacement of an HVAC system, the heating component of an HVAC system, or the cooling component of an HVAC system shall include duct sealing; and

(D) the installation of insulation and air sealing shall occur within 6 months of the replacement of the HVAC system, the heating component of an HVAC system, or the cooling component of an HVAC system.

(c) ADDITIONAL INCENTIVES FOR CONTRACTORS.—In carrying out the Home Energy Savings Retrofit Rebate Program, the Secretary may provide a $250 payment to a contractor per home of a homeowner or household living in a multifamily building for which—

(1) a partial system rebate is provided under this section for the installation of insulation and air sealing, or installation of insulation and air sealing and replacement of an HVAC system, the heating component of an HVAC system, or the cooling component of an HVAC system, by the contractor;

(2) the applicable homeowner has signed and submitted to the Secretary a release form made available pursuant to section 1526(b) authorizing the contractor access to information in the utility bills of the homeowner or the applicable multifamily building owner has signed and submitted an agreement with the contractor to provide whole-building aggregate information about the building's energy use; and

(3) the contractor inputs, into the Department of Energy's Building Performance Database—

(A) the energy usage for the home of a homeowner or for the household living in a multifamily building for the 12 months preceding, and the 24 months following, the installation of insulation and air sealing or installation of insulation and air sealing and replacement of an HVAC system, the heating component of an

HVAC system, or the cooling component of an HVAC system;

(B) a description of such installation or installation and replacement; and

(C) the total cost to the homeowner or multifamily building owner for such installation or installation and replacement.

(d) PROCESS.—

(1) FORMS; REBATE PROCESSING SYSTEM.—Not later than 90 days after the date of enactment of this Act, the Secretary, in consultation with the Secretary of the Treasury, shall—

(A) develop and make available rebate forms required to receive a partial system rebate under this section;

(B) establish a Federal rebate processing system which shall serve as a database and information technology system that will allow homeowners and multifamily building owners to submit required rebate forms; and

(C) establish a website that provides information on partial system rebates provided under this section, including how to determine whether particular measures qualify for a re-

bate under this section and how to receive such a rebate.

(2) SUBMISSION OF FORMS.—In order to receive a partial system rebate under this section, a homeowner or multifamily building owner shall submit the required rebate forms, and any other information the Secretary determines appropriate, to the Federal rebate processing system established pursuant to paragraph (1).

(e) FUNDING.—

(1) LIMITATION.—For each fiscal year, the Secretary may not use more than 50 percent of the amounts made available to carry out this part to carry out this section.

(2) ALLOCATION.—The Secretary shall allocate amounts made available to carry out this section for partial system rebates among the States using the same formula as is used to allocate funds for States under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.).

SEC. 1523. STATE ADMINISTERED REBATES.

(a) FUNDING.—In carrying out the Home Energy Savings Retrofit Rebate Program, and subject to the availability of appropriations for such purpose, the Sec-

retary shall provide grants to States to carry out programs to provide rebates in accordance with this section.

(b) STATE PARTICIPATION.—

(1) PLAN.—In order to receive a grant under this section a State shall submit to the Secretary an application that includes a plan to implement a State program that meets the minimum criteria under subsection (c).

(2) APPROVAL.—Not later than 60 days after receipt of a completed application for a grant under this section, the Secretary shall either approve the application or provide to the applicant an explanation for denying the application.

(c) MINIMUM CRITERIA FOR STATE PROGRAMS.—Not later than 6 months after the date of enactment of this Act, the Secretary shall establish and publish minimum criteria for a State program to meet to qualify for funding under this section, including—

(1) that the State program be carried out by the applicable State energy office or its designee;

(2) that a rebate be provided under a State program only for a home energy efficiency retrofit that—

(A) is completed by a contractor who meets minimum training requirements and cer-

tification requirements set forth by the Secretary;

(B) includes installation of one or more home energy efficiency retrofit measures for a home that together are modeled to achieve, or are shown to achieve, a reduction in home energy use of 20 percent or more from the baseline energy use of the home;

(C) does not include installation of any measure that the Secretary determines does not improve the thermal energy performance of the home, such as a pool pump, pool heater, spa, or EV charger; and

(D) includes, after installation of the applicable home energy efficiency retrofit measures, a test-out procedure conducted in accordance with guidelines issued by the Secretary of such measures to ensure—

(i) the safe operation of all systems post retrofit; and

(ii) that all improvements are included in, and have been installed according to—

(I) manufacturers installation specifications; and

(II) all applicable State and local codes or equivalent standards approved by the Secretary;

(3) that the State program utilize—

(A) for purposes of modeled performance rebates, modeling software approved by the Secretary for determining and documenting the baseline energy use of a home and the reductions in home energy use resulting from the implementation of a home energy efficiency retrofit; and

(B) for purposes of measured performance rebates, methods and procedures approved by the Secretary for determining and documenting the baseline energy use of a home and the reductions in home energy use resulting from the implementation of a home energy efficiency retrofit, including methods and procedures for use of advanced metering infrastructure, weather-normalized data, and open source standards, to measure such baseline energy use and such reductions in home energy use;

(4) that the State program include implementation of a quality assurance program—

(A) to ensure that home energy efficiency retrofits are achieving the stated level of energy savings, that efficiency measures were installed correctly, and that work is performed in accordance with procedures developed by the Secretary, including through quality-control inspections for a portion of home energy efficiency retrofits completed by each applicable contractor; and

(B) under which a quality-control inspection of a home energy efficiency retrofit is performed by a quality assurance provider who—

(i) is independent of the contractor for such retrofit; and

(ii) will confirm that such contractor is a contractor who meets minimum training requirements and certification requirements set forth by the Secretary;

(5) that the State program include requirements for a homeowner, contractor, or rebate aggregator to claim a rebate, including that the homeowner, contractor, or rebate aggregator submit any applicable forms approved by the Secretary to the State, including a copy of the certificate pro-

vided by the applicable contractor certifying projected or measured reduction of home energy use;

(6) that the State program may include requirements for an entity to be eligible to serve as a rebate aggregator to facilitate the delivery of rebates to homeowners or contractors;

(7) that the State program include procedures for a homeowner to transfer the right to claim a rebate to the contractor performing the applicable home energy efficiency retrofit or to a rebate aggregator that works with the contractor; and

(8) that the State program provide that a homeowner, contractor, or rebate aggregator may claim more than one rebate under the State program, and may claim a rebate under the State program after receiving a partial system rebate under section 1522, provided that no 2 rebates may be provided with respect to a home using the same baseline energy use of such home.

(d) MODELED PERFORMANCE REBATES.—

(1) IN GENERAL.—In carrying out a State program under this section, a State may provide a homeowner, contractor, or rebate aggregator a rebate, to be known as a modeled performance rebate, for an energy audit of a home and a home energy

efficiency retrofit that is projected, using modeling software approved by the Secretary, to reduce home energy use by at least 20 percent.

(2) AMOUNT.—

(A) IN GENERAL.—Except as provided in section 1524, and subject to subparagraph (B), the amount of a modeled performance rebate provided under a State program shall be equal to 50 percent of the cost of the applicable energy audit of a home and home energy efficiency retrofit, including the cost of diagnostic procedures, labor, reporting, and modeling.

(B) LIMITATION.—Except as provided in section 1524, with respect to an energy audit and home energy efficiency retrofit that is projected to reduce home energy use by—

(i) at least 20 percent, but less than 40 percent, the maximum amount of a modeled performance rebate shall be $2,000; and

(ii) at least 40 percent, the maximum amount of a modeled performance rebate shall be $4,000.

(e) MEASURED PERFORMANCE REBATES.—

(1) IN GENERAL.—In carrying out a State program under this section, a State may provide a homeowner, contractor, or rebate aggregator a rebate, to be known as a measured performance rebate, for a home energy efficiency retrofit that reduces home energy use by at least 20 percent as measured using methods and procedures approved by the Secretary.

(2) AMOUNT.—

(A) IN GENERAL.—Except as provided in section 1524, and subject to subparagraph (B), the amount of a measured performance rebate provided under a State program shall be equal to 50 percent of the cost, including the cost of diagnostic procedures, labor, reporting, and energy measurement, of the applicable home energy efficiency retrofit.

(B) LIMITATION.—Except as provided in section 1524, with respect to a home energy efficiency retrofit that is measured as reducing home energy use by—

(i) at least 20 percent, but less than 40 percent, the maximum amount of a measured performance rebate shall be $2,000; and

(ii) at least 40 percent, the maximum amount of a measured performance rebate shall be $4,000.

(f) COORDINATION OF REBATE AND EXISTING STATE-SPONSORED OR UTILITY-SPONSORED PROGRAMS.—A State that receives a grant under this section is encouraged to work with State agencies, energy utilities, nonprofits, and other entities—

(1) to assist in marketing the availability of the rebates under the applicable State program;

(2) to coordinate with utility or State managed financing programs;

(3) to assist in implementation of the applicable State program, including installation of home energy efficiency retrofits; and

(4) to coordinate with existing quality assurance programs.

(g) ADMINISTRATION AND OVERSIGHT.—

(1) REVIEW OF APPROVED MODELING SOFTWARE.—The Secretary shall, on an annual basis, list and review all modeling software approved for use in determining and documenting the reductions in home energy use for purposes of modeled performance rebates under subsection (d). In approving such modeling software each year, the Secretary shall en-

sure that modeling software approved for a year will result in modeling of energy efficiency gains for any type of home energy efficiency retrofit that is at least as substantial as the modeling of energy efficiency gains for such type of home energy efficiency retrofit using the modeling software approved for the previous year.

(2) OVERSIGHT.—If the Secretary determines that a State is not implementing a State program that was approved pursuant to subsection (b) and that meets the minimum criteria under subsection (c), the Secretary may, after providing the State a period of at least 90 days to meet such criteria, withhold grant funds under this section from the State.

SEC. 1524. SPECIAL PROVISIONS FOR MODERATE INCOME HOUSEHOLDS.

(a) CERTIFICATIONS.—The Secretary shall establish procedures for certifying that the household of a homeowner or that, in the case of a multifamily building, the majority of households in the building is moderate income for purposes of this section.

(b) PERCENTAGES.—Subject to subsection (c), for households that are certified pursuant to the procedures established under subsection (a) as moderate income the—

(1) amount of a partial system rebate under section 1522 shall not exceed 60 percent of the applicable purchase and installation costs described in section 1522(b)(1); and

(2) amount of—

(A) a modeled performance rebate under section 1523 provided shall be equal to 80 percent of the applicable costs described in section 1523(d)(2)(A); and

(B) a measured performance rebate under section 1523 provided shall be equal to 80 percent of the applicable costs described in section 1523(e)(2)(A).

(c) MAXIMUM AMOUNTS.—For households that are certified pursuant to the procedures established under subsection (a) as moderate income the maximum amount—

(1) of a partial system rebate—

(A) under section 1522(a)(1) for the purchase and installation of insulation and air sealing within a home of the homeowner or the household living in a multifamily building shall be $1600; and

(B) under section 1522(a)(2) for the purchase and installation of insulation and air seal-

ing within a home of the homeowner or the household living in a multifamily building and replacement of an HVAC system, the heating component of an HVAC system, or the cooling component of an HVAC system, of such home, shall be $3,000;

(2) of a modeled performance rebate under section 1523 for an energy audit and home energy efficiency retrofit that is projected to reduce home energy use as described in—

(A) section 1523(d)(2)(B)(i) shall be $4,000; and

(B) section 1523(d)(2)(B)(ii) shall be $8,000; and

(3) of a measured performance rebate under section 1523 for a home energy efficiency retrofit that reduces home energy use as described in—

(B) section 1523(e)(2)(B)(i) shall be $4,000; and

(C) section 1523(e)(2)(B)(ii) shall be $8,000.

(d) OUTREACH.—The Secretary shall establish procedures to—

(1) provide information to households of homeowners or multifamily building owners that are cer-

tified pursuant to the procedures established under subsection (a) as moderate income regarding other programs and resources relating to assistance for energy efficiency upgrades of homes, including the weatherization assistance program implemented under part A of title IV of the Energy Conservation and Production Act (42 U.S.C. 6861 et seq.); and

(2) refer such households and owners, as applicable, to such other programs and resources.

SEC. 1525. EVALUATION REPORTS TO CONGRESS.

(a) IN GENERAL.—Not later than 3 years after the date of enactment of this Act and annually thereafter until the termination of the Home Energy Savings Retrofit Rebate Program, the Secretary shall submit to Congress a report on the use of funds made available to carry out this part.

(b) CONTENTS.—Each report submitted under subsection (a) shall include—

(1) how many home energy efficiency retrofits have been completed during the previous year under the Home Energy Savings Retrofit Rebate Program;

(2) an estimate of how many jobs have been created through the Home Energy Savings Retrofit Rebate Program, directly and indirectly;

(3) a description of what steps could be taken to promote further deployment of energy efficiency and renewable energy retrofits;

(4) a description of the quantity of verifiable energy savings, homeowner energy bill savings, and other benefits of the Home Energy Savings Retrofit Rebate Program;

(5) a description of any waste, fraud, or abuse with respect to funds made available to carry out this part; and

(6) any other information the Secretary considers appropriate.

SEC. 1526. ADMINISTRATION.

(a) IN GENERAL.—The Secretary shall provide such administrative and technical support to contractors, rebate aggregators, States, and Indian Tribes as is necessary to carry out this part.

(b) INFORMATION COLLECTION.—The Secretary shall establish, and make available to a homeowner, or the homeowner's designated representative, seeking a rebate under this part, release forms authorizing access by the Secretary, or a designated third-party representative to information in the utility bills of the homeowner with appropriate privacy protections in place.

(c) APPLICATION OF WAGE RATE REQUIREMENTS TO PARTIAL SYSTEM AND STATE ADMINISTERED REBATES.—Section 12202 of this Act shall not apply to rebates under sections 1522 and 1523.

SEC. 1527. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—There are authorized to be appropriated to the Secretary to carry out this part $1,600,000,000 for each of fiscal years 2021 through 2025, to remain available until expended.

(b) TRIBAL ALLOCATION.—Of the amounts made available pursuant to subsection (a) for a fiscal year, the Secretary shall work with Indian Tribes and use 2 percent of such amounts to carry out a program or programs that as close as possible reflect the goals, requirements, and provisions of this part, taking into account any factors that the Secretary determines to be appropriate.

PART 3—GENERAL PROVISIONS

SEC. 1531. APPOINTMENT OF PERSONNEL.

Notwithstanding the provisions of title 5, United States Code, regarding appointments in the competitive service and General Schedule classifications and pay rates, the Secretary may appoint such professional and administrative personnel as the Secretary considers necessary to carry out this subtitle.

SEC. 1532. MAINTENANCE OF FUNDING.

Each State receiving Federal funds pursuant to this subtitle shall provide reasonable assurances to the Secretary that it has established policies and procedures designed to ensure that Federal funds provided under this subtitle will be used to supplement, and not to supplant, State and local funds.

Subtitle F—Weatherization

SEC. 1601. WEATHERIZATION ASSISTANCE PROGRAM.

(a) REAUTHORIZATION OF WEATHERIZATION ASSISTANCE PROGRAM.—Section 422 of the Energy Conservation and Production Act (42 U.S.C. 6872) is amended by striking paragraphs (1) through (5) and inserting the following:

''(1) $410,000,000 for fiscal year 2021;

''(2) $430,000,000 for fiscal year 2022;

''(3) $450,000,000 for fiscal year 2023;

''(4) $450,000,000 for fiscal year 2024; and

''(5) $450,000,000 for fiscal year 2025.''.

(b) MODERNIZING THE DEFINITION OF WEATHERIZATION MATERIALS.—Section 412(9)(J) of the Energy Conservation and Production Act (42 U.S.C. 6862(9)(J)) is amended—

(1) by inserting '', including renewable energy technologies and other advanced technologies,'' after ''devices or technologies''; and

(2) by striking ", after consulting with the Secretary of Housing and Urban Development, the Secretary of Agriculture, and the Director of the Community Services Administration".

(c) CONSIDERATION OF HEALTH BENEFITS.—Section 413(b) of the Energy Conservation and Production Act (42 U.S.C. 6863(b)) is amended—

(1) in paragraph (1), by striking "Health, Education, and Welfare" and inserting "Health and Human Services";

(2) in paragraph (2)(A), by striking "Health, Education, and Welfare" and inserting "Health and Human Services";

(3) in paragraph (3)—

(A) by striking "and with the Director of the Community Services Administration";

(B) by inserting "and by" after "in carrying out this part,"; and

(C) by striking ", and the Director of the Community Services Administration in carrying out weatherization programs under section 222(a)(12) of the Economic Opportunity Act of 1964";

(4) by redesignating paragraphs (4) through (6) as paragraphs (5) through (7), respectively; and

(5) by inserting after paragraph (3), the following:

''(4) The Secretary may amend the regulations prescribed under paragraph (1) to provide that the standards described in paragraph (2)(A) take into consideration improvements in the health and safety of occupants of dwelling units, and other non-energy benefits, from weatherization.''.

(d) CONTRACTOR OPTIMIZATION.—

(1) IN GENERAL.—The Energy Conservation and Production Act is amended by inserting after section 414B (42 U.S.C. 6864b) the following:

''SEC. 414C. CONTRACTOR OPTIMIZATION.

''(a) IN GENERAL.—The Secretary may request that entities receiving funding from the Federal Government or from a State through a weatherization assistance program under section 413 or section 414 perform periodic reviews of the use of private contractors in the provision of weatherization assistance, and encourage expanded use of contractors as appropriate.

''(b) USE OF TRAINING FUNDS.—Entities described in subsection (a) may use funding described in such subsection to train private, non-Federal entities that are contracted to provide weatherization assistance under a

weatherization program, in accordance with rules determined by the Secretary.''.

(2) TABLE OF CONTENTS AMENDMENT.—The table of contents for the Energy Conservation and Production Act is amended by inserting after the item relating to section 414B the following:

''Sec. 414C. Contractor optimization.''.

(e) FINANCIAL ASSISTANCE FOR WAP ENHANCEMENT AND INNOVATION.—

(1) IN GENERAL.—The Energy Conservation and Production Act is amended by inserting after section 414C (as added by subsection (d) of this section) the following:

''SEC. 414D. FINANCIAL ASSISTANCE FOR WAP ENHANCEMENT AND INNOVATION.

''(a) PURPOSES.—The purposes of this section are—

''(1) to expand the number of dwelling units that are occupied by low-income persons that receive weatherization assistance by making such dwelling units weatherization-ready;

''(2) to promote the deployment of renewable energy in dwelling units that are occupied by low-income persons;

''(3) to ensure healthy indoor environments by enhancing or expanding health and safety measures

and resources available to dwellings that are occupied by low-income persons;

''(4) to disseminate new methods and best practices among entities providing weatherization assistance;

''(5) to encourage entities providing weatherization assistance to hire and retain employees who are individuals—

''(A) from the community in which the assistance is provided; and

''(B) from communities or groups that are underrepresented in the home energy performance workforce, including religious and ethnic minorities, women, veterans, individuals with disabilities, and individuals who are socioeconomically disadvantaged; and

''(6) to enhance or expand the use of materials that are resistant to high heat and fire in dwellings occupied by low-income persons in areas at risk from drought and wildfires.

''(b) FINANCIAL ASSISTANCE.—The Secretary shall, to the extent funds are made available, award financial assistance, on an annual basis, through a competitive process to entities receiving funding from the Federal Government or from a State, tribal organization, or unit of

general purpose local government through a weatherization program under section 413 or section 414, or to nonprofit entities, to be used by such an entity—

"(1) with respect to dwelling units that are occupied by low-income persons, to—

"(A) implement measures to make such dwelling units weatherization-ready by addressing structural, plumbing, roofing, and electrical issues, environmental hazards, or other measures that the Secretary determines to be appropriate;

"(B) install energy efficiency technologies, including home energy management systems, smart devices, and other technologies the Secretary determines to be appropriate;

"(C) install renewable energy systems (as defined in section 415(c)(6)(A));

"(D) implement measures to ensure healthy indoor environments by improving indoor air quality, accessibility, and other healthy homes measures as determined by the Secretary; and

"(E) implement measures to enhance health and safety through use of materials that

are resistant to high heat and fire in areas at risk from drought and wildfires;

''(2) to improve the capability of the entity—

''(A) to significantly increase the number of energy retrofits performed by such entity;

''(B) to replicate best practices for work performed pursuant to this section on a larger scale;

''(C) to leverage additional funds to sustain the provision of weatherization assistance and other work performed pursuant to this section after financial assistance awarded under this section is expended; and

''(D) to hire and retain employees who are individuals described subsection (a)(5);

''(3) for innovative outreach and education regarding the benefits and availability of weatherization assistance and other assistance available pursuant to this section;

''(4) for quality control of work performed pursuant to this section;

''(5) for data collection, measurement, and verification with respect to such work;

''(6) for program monitoring, oversight, evaluation, and reporting regarding such work;

''(7) for labor, training, and technical assistance relating to such work;

''(8) for planning, management, and administration (up to a maximum of 15 percent of the assistance provided); and

''(9) for such other activities as the Secretary determines to be appropriate.

''(c) AWARD FACTORS.—In awarding financial assistance under this section, the Secretary shall consider—

''(1) the applicant's record of constructing, renovating, repairing, or making energy efficient single-family, multifamily, or manufactured homes that are occupied by low-income persons, either directly or through affiliates, chapters, or other partners (using the most recent year for which data are available);

''(2) the number of dwelling units occupied by low-income persons that the applicant has built, renovated, repaired, weatherized, or made more energy efficient in the 5 years preceding the date of the application;

''(3) the qualifications, experience, and past performance of the applicant, including experience successfully managing and administering Federal funds;

''(4) the strength of an applicant's proposal to achieve one or more of the purposes under subsection (a);

''(5) the extent to which such applicant will utilize partnerships and regional coordination to achieve one or more of the purposes under subsection (a);

''(6) regional and climate zone diversity;

''(7) urban, suburban, and rural localities; and

''(8) such other factors as the Secretary determines to be appropriate.

''(d) APPLICATIONS.—

''(1) ADMINISTRATION.—To be eligible for an award of financial assistance under this section, an applicant shall submit to the Secretary an application in such manner and containing such information as the Secretary may require.

''(2) AWARDS.—Subject to the availability of appropriations, not later than 270 days after the date of enactment of this section, the Secretary shall make a first award of financial assistance under this section.

''(e) MAXIMUM AMOUNT AND TERM.—

''(1) IN GENERAL.—The total amount of financial assistance awarded to an entity under this section shall not exceed $2,000,000.

''(2) TECHNICAL AND TRAINING ASSISTANCE.—The total amount of financial assistance awarded to an entity under this section shall be reduced by the cost of any technical and training assistance provided by the Secretary that relates to such financial assistance.

''(3) TERM.—The term of an award of financial assistance under this section shall not exceed 3 years.

''(4) RELATIONSHIP TO FORMULA GRANTS.—An entity may use financial assistance awarded to such entity under this section in conjunction with other financial assistance provided to such entity under this part.

''(f) REQUIREMENTS.—Not later than 90 days after the date of enactment of this section, the Secretary shall issue requirements to implement this section, including, for entities receiving financial assistance under this section—

''(1) standards for allowable expenditures;

''(2) a minimum saving-to-investment ratio; and

''(3) standards for—

"(A) training programs;

"(B) energy audits;

"(C) the provision of technical assistance;

"(D) monitoring activities carried out using such financial assistance;

"(E) verification of energy and cost savings;

"(F) liability insurance requirements; and

"(G) recordkeeping and reporting requirements, which shall include reporting to the Office of Weatherization and Intergovernmental Programs of the Department of Energy applicable data on each dwelling unit retrofitted or otherwise assisted pursuant to this section.

"(g) COMPLIANCE WITH STATE AND LOCAL LAW.—Nothing in this section supersedes or otherwise affects any State or local law, to the extent that the State or local law contains a requirement that is more stringent than the applicable requirement of this section.

"(h) REVIEW AND EVALUATION.—The Secretary shall review and evaluate the performance of each entity that receives an award of financial assistance under this section (which may include an audit).

''(i) ANNUAL REPORT.—The Secretary shall submit to Congress an annual report that provides a description of—

''(1) actions taken under this section to achieve the purposes of this section; and

''(2) accomplishments as a result of such actions, including energy and cost savings achieved.

''(j) FUNDING.—

''(1) AMOUNTS.—

''(A) IN GENERAL.—For each of fiscal years 2021 through 2025, of the amount made available under section 422 for such fiscal year to carry out the weatherization program under this part (not including any of such amount made available for Department of Energy headquarters training or technical assistance), not more than—

''(i) 2 percent of such amount (if such amount is $225,000,000 or more but less than $260,000,000) may be used to carry out this section;

''(ii) 4 percent of such amount (if such amount is $260,000,000 or more but less than $300,000,000) may be used to carry out this section; and

"(iii) 6 percent of such amount (if such amount is $300,000,000 or more) may be used to carry out this section.

"(B) MINIMUM.—For each of fiscal years 2021 through 2025, if the amount made available under section 422 (not including any of such amount made available for Department of Energy headquarters training or technical assistance) for such fiscal year is less than $225,000,000, no funds shall be made available to carry out this section.

"(2) LIMITATION.—For any fiscal year, the Secretary may not use more than $25,000,000 of the amount made available under section 422 to carry out this section.

"(k) TERMINATION.—The Secretary may not award financial assistance under this section after September 30, 2025.".

(2) TABLE OF CONTENTS.—The table of contents for the Energy Conservation and Production Act is amended by inserting after the item relating to section 414C the following:

"Sec. 414D. Financial assistance for WAP enhancement and innovation.".

(f) HIRING.—

(1) IN GENERAL.—The Energy Conservation and Production Act is amended by inserting after

section 414D (as added by subsection (e) of this section) the following:

''SEC. 414E. HIRING.

''The Secretary may, as the Secretary determines appropriate, encourage entities receiving funding from the Federal Government or from a State through a weatherization program under section 413 or section 414, to prioritize the hiring and retention of employees who are individuals described in section 414D(a)(5).''.

(2) TABLE OF CONTENTS.—The table of contents for the Energy Conservation and Production Act is amended by inserting after the item relating to section 414D the following:

''Sec. 414E. Hiring.''.

(g) INCREASE IN ADMINISTRATIVE FUNDS.—Section 415(a)(1) of the Energy Conservation and Production Act (42 U.S.C. 6865(a)(1)) is amended by striking ''10 percent'' and inserting ''15 percent''.

(h) AMENDING RE-WEATHERIZATION DATE.—Paragraph (2) of section 415(c) of the Energy Conservation and Production Act (42 U.S.C. 6865(c)) is amended to read as follows:

''(2) Dwelling units weatherized (including dwelling units partially weatherized) under this part, or under other Federal programs (in this paragraph referred to as 'previous weatherization'), may not receive further finan-

cial assistance for weatherization under this part until the date that is 15 years after the date such previous weatherization was completed. This paragraph does not preclude dwelling units that have received previous weatherization from receiving assistance and services (including the provision of information and education to assist with energy management and evaluation of the effectiveness of installed weatherization materials) other than weatherization under this part or under other Federal programs, or from receiving non-Federal assistance for weatherization.''.

(i) ANNUAL REPORT.—Section 421 of the Energy Conservation and Production Act (42 U.S.C. 6871) is amended by inserting ''the number of multifamily buildings in which individual dwelling units were weatherized during the previous year, the number of individual dwelling units in multifamily buildings weatherized during the previous year,'' after ''the average size of the dwellings being weatherized,''.

SEC. 1602. REPORT ON WAIVERS.

Not later than 180 days after the date of enactment of this Act, the Secretary of Energy shall submit to Congress a report on the status of any request made after September 30, 2010, for a waiver of any requirement under section 200.313 of title 2, Code of Federal Regula-

tions, as such requirement applies with respect to the weatherization assistance program under part A of title IV of the Energy Conservation and Production Act (42 U.S.C. 6861 et seq.), including a description of any such waiver that has been granted and any such request for a waiver that has been considered but not granted.

SEC. 1603. APPLICATION OF WAGE RATE REQUIREMENTS TO WEATHERIZATION ASSISTANCE PROGRAM.

With respect to the Weatherization Assistance Program, the requirements of section 12202 shall apply only to work performed on multifamily buildings.

SEC. 1604. PROHIBITION ON CATEGORY 1 RESPIRATORY SENSITIZERS.

Thermal insulating materials for building elements including walls, floors, ceilings, attics and roofs insulation, used for ''Low Income Home Energy Assistance'' and ''Weatherization Assistance Program'' shall not contain any substance that is a Category 1 respiratory sensitizer as defined in Appendix A to section 1910.1200 of title 29, Code of Federal Regulations, (specifically, Appendix A.4, ''Respiratory or Skin Sensitization''), if such substance was intentionally added or is present at greater than 0.1 percent (1000 ppm) by weight in the product.

Subtitle G—Energy and Water Research Integration

SEC. 1701. INTEGRATING ENERGY AND WATER RESEARCH.

(a) IN GENERAL.—The Secretary of Energy shall integrate water considerations into energy research, development, and demonstration programs and projects of the Department of Energy by—

(1) advancing energy and energy efficiency technologies and practices that meet the objectives of—

(A) minimizing freshwater withdrawal and consumption;

(B) increasing water use efficiency;

(C) utilizing nontraditional water sources with efforts to improve the quality of the water from those sources;

(D) minimizing deleterious impacts on water bodies, groundwater, and waterways; and

(E) minimizing seismic impacts;

(2) considering the effects climate variability may have on water supplies and quality for energy generation and fuel production; and

(3) improving understanding of the energy-water nexus.

(b) STRATEGIC PLAN.—

(1) IN GENERAL.—Not later than 12 months after the date of enactment of this Act, the Secretary shall develop a strategic plan identifying the research, development, and demonstration needs for Department programs and projects to carry out subsection (a). The strategic plan shall include technical milestones for achieving and assessing progress toward the objectives of subsection (a)(1).

(2) SPECIFIC CONSIDERATIONS.—In developing the strategic plan, the Secretary shall consider—

(A) new advanced cooling technologies for energy generation and fuel production technologies;

(B) performance improvement of existing cooling technologies and cost reductions associated with using those technologies;

(C) innovative water reuse, recovery, and treatment technologies in energy generation and fuel production, including renewable energy;

(D) technology development for carbon capture and storage systems that utilize efficient water use design strategies;

(E) technologies that are life-cycle cost effective;

(F) systems analysis and modeling of issues relating to the energy-water nexus;

(G) technologies to treat and utilize wastewater and produced waters discharged from oil, natural gas, coalbed methane, and any other substance to be used as an energy source;

(H) advanced materials for the use of non-traditional water sources for energy generation and fuel production;

(I) biomass production and utilization and the impact on hydrologic systems;

(J) technologies that reduce impacts on water from energy resource development;

(K) energy efficient technologies for water distribution, treatment, supply, and collection systems;

(L) technologies for energy generation from water distribution, treatment, supply, and collection systems;

(M) the flexible operation of water infrastructure to provide essential grid reliability services;

(N) modular or energy-water microgrid systems that can provide energy and water resources in remote or disaster recovery areas;

(O) recovering energy in the form of biofuels, bioproducts, and biopower from municipal and industrial wastewaters, and similar organic streams; and

(P) any other area of the energy-water nexus that the Secretary considers appropriate.

(3) COLLABORATION AND NONDUPLICATION.—In developing the strategic plan, the Secretary shall coordinate and avoid duplication—

(A) with other Federal agencies operating related programs, if appropriate; and

(B) across programs and projects of the Department, including with those of the National Laboratories.

(4) RELEVANT INFORMATION AND RECOMMENDATIONS.—In developing the strategic plan, the Secretary shall consider and incorporate, as appropriate, relevant information and recommendations, including those of the National Water Availability and Use Assessment Program under section 9508(d) of the Omnibus Public Land Management Act of 2009 (42 U.S.C. 10368(d)).

(5) ADDITIONAL PARTICIPATION.—In developing the strategic plan, the Secretary shall consult and coordinate with a diverse group of representa-

tives from research and academic institutions, industry, public utility commissions, and State and local governments who have expertise in technologies and practices relating to the energy-water nexus.

(6) SUBMISSION TO CONGRESS.—Not later than 12 months after the date of enactment of this Act, 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 the strategic plan.

(7) UPDATING THE STRATEGIC PLAN.—Not later than 3 years after the date of enactment of this Act, and at least once every 5 years thereafter, the Secretary shall—

(A) utilize relevant information produced by Federal Government agencies, academia, State, local, and tribal governments and industry to update the strategic plan;

(B) include in the updated strategic plan a description of the changes from the previous strategic plan and the rationale for such changes;

(C) include a review of progress made towards the milestones outlined in the previous strategic plan; and

(D) submit the updated 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) ADDITIONAL ACTIVITIES.—The Secretary may provide for such additional research, development, and demonstration activities as appropriate to integrate water considerations into the research, development, and demonstration activities of the Department as described in subsection (a).

SEC. 1702. ENERGY-WATER OVERSIGHT AND COORDINATION.

(a) IN GENERAL.—In carrying out the research, development, and demonstration activities outlined in section 1701, the Secretary, in coordination with other relevant Federal agencies, shall establish an Energy-Water Committee to promote and enable improved energy and water resource data collection, reporting, and technological innovation. The Committee shall consist of—

(1) representation from each program within the Department and each Federal agency that conducts research related to the energy-water nexus; and

(2) non-Federal members, including representatives of research and academic institutions, State, local, and tribal governments, public utility commissions, and industry, who have expertise in technologies, technological innovations, or practices relating to the energy-water nexus.

(b) FUNCTIONS.—The Committee shall, in carrying out section 1701—

(1) make recommendations on the development and integration of data collection and data communication standards and protocols, including models and modeling results, to agencies and entities currently engaged in collecting the data for the energy-water nexus;

(2) recommend ways to make improvements to Federal water use data to increase understanding of trends in energy generation and fuel production, including non-cooling water uses;

(3) recommend best practices for utilizing information from existing monitoring networks to provide nationally uniform water and energy use and infrastructure data; and

(4) conduct annual technical workshops, including at least one regional workshop annually, to facilitate information exchange among Federal, re-

gional, State, local, and tribal governments and private sector experts on technologies that encourage the conservation and efficient use of water and energy.

(c) REPORTS.—Not later than 1 year after the date of enactment of this Act, and at least once every 2 years thereafter, the Committee, through the Secretary, shall transmit to Congress a report on its findings and activities under this section.

(d) APPLICABILITY OF FEDERAL ADVISORY COMMITTEE ACT.—Except as otherwise provided in this section, the Federal Advisory Committee Act (5 U.S.C. App.) shall apply to the Committee.

SEC. 1703. RULE OF CONSTRUCTION.

Notwithstanding any other provision of law, nothing in this part shall be construed to require State, tribal, or local governments to provide additional data for Federal purposes, or to take any action that may result in an increased financial burden to such governments by restricting the use of water by such governments.

SEC. 1704. COORDINATION AND NONDUPLICATION.

To the maximum extent practicable, the Secretary shall coordinate activities under this part with other programs of the Department and other Federal research programs.

SEC. 1705. DEFINITIONS.

In this part:

(1) COMMITTEE.—The term ''Committee'' means the Energy-Water Committee established under section 1702(a).

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

(3) ENERGY-WATER NEXUS.—The term ''energy-water nexus'' means the energy required to provide reliable water supplies and the water required to provide reliable energy supplies throughout the United States.

(4) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

Subtitle H—Other Matters

SEC. 1801. MODIFICATIONS TO THE CEILING FAN ENERGY CONSERVATION STANDARD.

(a) IN GENERAL.—Section 325(ff)(6) of the Energy Policy and Conservation Act (42 U.S.C. 6295(ff)(6)) is amended by adding at the end the following:

''(C)(i) Large-diameter ceiling fans manufactured on or after January 21, 2020, shall—

''(I) not be required to meet minimum ceiling fan efficiency in terms of ratio of the total airflow to the total power consumption as described in the final rule titled 'Energy Conservation Program: En-

ergy Conservation Standards for Ceiling Fans' (82 Fed. Reg. 6826 (January 19, 2017)); and

"(II) have a CFEI greater than or equal to—

"(aa) 1.00 at high speed; and

"(bb) 1.31 at 40 percent speed or the nearest speed that is not less than 40 percent speed.

"(ii) For purposes of this subparagraph, the term 'CFEI' means the Fan Energy Index for large-diameter ceiling fans, calculated in accordance with ANSI/AMCA Standard 208–18 titled 'Calculation of the Fan Energy Index', with the following modifications:

"(I) Using an Airflow Constant (Q_0) of 26,500 cubic feet per minute.

"(II) Using a Pressure Constant (P_0) of 0.0027 inches water gauge.

"(III) Using a Fan Efficiency Constant (η_0) of 42 percent.".

(b) REVISION.—For purposes of section 325(m) of the Energy Policy and Conservation Act (42 U.S.C. 6295(m)), the standard established in section 325(ff)(6)(C) of such Act (as added by subsection (a) of this section) shall be treated as if such standard was issued on January 19, 2017.

SEC. 1802. SMART ENERGY AND WATER EFFICIENCY PROGRAM.

(a) DEFINITIONS.—In this section:

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

(A) a municipality;

(B) a water district; and

(C) any other entity that provides water, wastewater, or water reuse services, including a joint water and power authority.

(2) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(3) SMART ENERGY AND WATER EFFICIENCY PROGRAM.—The term ''smart energy and water efficiency program'' or ''program'' means the program established under subsection (b).

(b) SMART ENERGY AND WATER EFFICIENCY PROGRAM.—

(1) IN GENERAL.—The Secretary shall establish and carry out a smart energy and water efficiency program in accordance with this section.

(2) ELIGIBLE PROJECTS.—In carrying out the smart energy and water efficiency program, the Secretary shall award grants to eligible entities to carry out projects that implement advanced and innovative technology-based solutions that will improve the en-

ergy or water efficiency of water, wastewater, or water reuse systems to—

(A) help eligible entities make significant progress in conserving water, conserving energy, or reducing the operating costs of such systems;

(B) support the implementation of innovative processes or the installation of advanced automated systems that provide real-time data on energy and water; or

(C) improve predictive maintenance of water, wastewater, or water reuse systems through the use of Internet-connected technologies, such as sensors, intelligent gateways, or security embedded in hardware.

(3) PROJECT SELECTION.—

(A) IN GENERAL.—The Secretary shall make competitive, merit-reviewed grants under the program to not fewer than 3, but not more than 5, eligible entities.

(B) SELECTION CRITERIA.—In selecting an eligible entity to receive a grant under the program, the Secretary shall consider—

(i) energy and cost savings anticipated to result from the project;

(ii) the innovative nature, commercial viability, and reliability of the technology to be used;

(iii) the degree to which the project integrates innovative sensors, software, hardware, analytics, and management tools;

(iv) the anticipated cost-effectiveness of the project in terms of energy savings, water savings or reuse, and infrastructure costs averted;

(v) whether the technology can be deployed in a variety of geographic regions and the degree to which the technology can be implemented on a smaller or larger scale, including whether the technology can be implemented by other types of eligible entities; and

(vi) whether implementation of the project will be complete within 5 years.

(C) APPLICATIONS.—

(i) IN GENERAL.—Subject to clause (ii), an eligible entity seeking 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 determines to be necessary.

(ii) CONTENTS.—An application under clause (i) shall, at a minimum, include—

(I) a description of the project;

(II) a description of the technology to be used in the project;

(III) the anticipated results, including energy and water savings, of the project;

(IV) a comprehensive budget for the project; and

(V) the number of households or customers that are served by the eligible entity and will benefit from the project.

(4) ADMINISTRATION.—

(A) IN GENERAL.—Not later than 300 days after the date of enactment of this Act, the Secretary shall select grant recipients under this section.

(B) EVALUATIONS.—The Secretary shall annually for 5 years carry out an evaluation of

each project for which a grant is provided under this section that—

(i) evaluates the progress and effects of the project; and

(ii) assesses the degree to which the project can be replicated in other regions, systems, and situations.

(C) TECHNICAL ASSISTANCE.—On the request of a grant recipient, the Secretary shall provide technical assistance to the grant recipient to carry out the project.

(D) BEST PRACTICES.—The Secretary shall make available to the public—

(i) a copy of each evaluation carried out under subparagraph (B); and

(ii) a description of any best practices identified by the Secretary as a result of those evaluations.

(E) REPORT TO CONGRESS.—Not later than the date on which the Secretary completes the last evaluation required under subparagraph (B), the Secretary shall submit to Congress a report containing the results of each evaluation carried out under such subparagraph.

(c) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated $15,000,000 to carry out this section, to remain available until expended.

SEC. 1803. ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT PROGRAM.

(a) PURPOSE.—Section 542(b)(1) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17152(b)(1)) is amended—

(1) in subparagraph (A), by striking ''; and'' and inserting a semicolon;

(2) in subparagraph (B), by striking the semicolon and inserting ''; and''; and

(3) by adding at the end the following:

''(C) diversifies energy supplies, including by facilitating and promoting the use of alternative fuels;''.

(b) USE OF FUNDS.—Section 544(9) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17154(9)) is amended to read as follows:

''(9) deployment of energy distribution technologies that significantly increase energy efficiency or expand access to alternative fuels, including—

''(A) distributed resources;

''(B) district heating and cooling systems; and

''(C) infrastructure for delivering alternative fuels;''.

(c) COMPETITIVE GRANTS.—Section 546(c)(2) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17156(c)(2)) is amended by inserting '', including projects to expand the use of alternative fuels'' before the period at the end.

(d) FUNDING.—Section 548(a) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17158(a)) is amended to read as follows:

''(a) AUTHORIZATION OF APPROPRIATIONS.—

''(1) GRANTS.—There is authorized to be appropriated to the Secretary for the provision of grants under the program $3,500,000,000 for each of fiscal years 2021 through 2025.

''(2) ADMINISTRATIVE COSTS.—There is authorized to be appropriated to the Secretary for administrative expenses of the program $35,000,000 for each of fiscal years 2021 through 2025.''.

(e) TECHNICAL AMENDMENTS.—Section 543 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17153) is amended—

(1) in subsection (c), by striking ''subsection (a)(2)'' and inserting ''subsection (a)(3)''; and

(2) in subsection (d), by striking ''subsection (a)(3)'' and inserting ''subsection (a)(4)''.

SEC. 1804. ENERGY EFFICIENT PUBLIC BUILDINGS.

(a) GRANTS.—Section 125(a) of the Energy Policy Act of 2005 (42 U.S.C. 15822(a)) is amended—

(1) in paragraph (1)—

(A) by inserting ''Standard 90.1 of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers,'' after ''the International Energy Conservation Code,''; and

(B) by striking ''; or'' and inserting a semicolon;

(2) in paragraph (2), by striking the period at the end and inserting ''; or''; and

(3) by adding at the end the following:

''(3) through benchmarking programs to enable use of building performance data to evaluate the performance of energy efficiency investments over time.''.

(b) ASSURANCE OF IMPROVEMENT.—Section 125 of the Energy Policy Act of 2005 (42 U.S.C. 15822) is amended by redesignating subsections (b) and (c) as subsections (c) and (d), respectively, and inserting after subsection (a) the following:

''(b) ASSURANCE OF IMPROVEMENT.—

''(1) VERIFICATION.—A State agency receiving a grant for activities described in paragraph (1) or (2) of subsection (a) shall ensure, as a condition of eligibility for assistance pursuant to such grant, that a unit of local government receiving such assistance obtain third-party verification of energy efficiency improvements in each public building with respect to which such assistance is used.

''(2) GUIDANCE.—The Secretary may provide guidance to State agencies to comply with paragraph (1). In developing such guidance, the Secretary shall consider available third-party verification tools for high-performing buildings and available third-party verification tools for energy efficiency retrofits.''.

(c) ADMINISTRATION.—Section 125(c) of the Energy Policy Act of 2005, as so redesignated, is amended—

(1) in the matter preceding paragraph (1), by striking ''State energy offices receiving grants'' and inserting ''A State agency receiving a grant'';

(2) in paragraph (1), by striking ''; and'' and inserting a semicolon;

(3) in paragraph (2), by striking the period at the end and inserting ''; and''; and

(4) by adding at the end the following:

''(3) ensure that all laborers and mechanics employed by contractors and subcontractors in the performance of construction, alteration, or repair work financed in whole or in part with assistance received pursuant to this section shall be paid wages at rates not less than those prevailing on projects of a similar character in the locality, as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code (and with respect to such labor standards, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40, United States Code).''.

(d) AUTHORIZATION OF APPROPRIATIONS.—Section 125(d) of the Energy Policy Act of 2005, as so redesignated, is amended by striking ''$30,000,000 for each of fiscal years 2006 through 2010'' and inserting ''$100,000,000 for each of fiscal years 2021 through 2025''.

SEC. 1805. SMART BUILDINGS.

(a) DEFINITIONS.—In this section:

(1) FRONTLINE COMMUNITY.—The term ''frontline community'' means a community with significant representation of communities of color, low-

income communities, or Tribal and indigenous communities, that experiences, or is at risk of experiencing, higher or more adverse human health or environmental effects.

(2) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(3) SMART BUILDING.—The term ''smart building'' means a building, or collection of buildings, with an energy system that—

(A) is flexible and automated in its energy demand and usage in response to changes associated with the environment, occupant behaviors, building conditions, and other events;

(B) has monitoring, diagnostics, control, and communication connectivity that enables analysis and control of energy consumption and generation;

(C) has a systems-based approach to integrating the overall building operations for control of energy demand, generation, and storage;

(D) has the ability to share information with utilities or other third-party entities, as appropriate in order to coordinate building energy assets to support energy system reliability and resilience;

(E) supports the health and safety of occupants; or

(F) incorporates cybersecurity protections.

(b) FEDERAL SMART BUILDING PROGRAM.—

(1) ESTABLISHMENT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall, in consultation with the Administrator of General Services, establish a program to be known as the ''Federal Smart Building Program''—

(A) to implement smart building technology; and

(B) to demonstrate the costs and benefits of smart buildings.

(2) SELECTION.—

(A) IN GENERAL.—The Secretary shall coordinate the selection of not fewer than 1 building from among each of several key Federal agencies, as described in paragraph (4), to compose an appropriately diverse set of smart buildings based on size, type, and geographic location.

(B) INCLUSION OF COMMERCIALLY OPERATED BUILDINGS.—In making selections under subparagraph (A), the Secretary may include

buildings that are owned by the Federal Government but are commercially operated.

(3) TARGETS.—Not later than 18 months after the date of enactment of this Act, the Secretary shall establish targets for the number of smart buildings to be commissioned and evaluated by key Federal agencies by 3 years and 6 years after the date of enactment of this Act.

(4) FEDERAL AGENCY DESCRIBED.—The key Federal agencies referred to paragraph (2)(A) shall include buildings operated by—

(A) the Department of the Army;

(B) the Department of the Navy;

(C) the Department of the Air Force;

(D) the Department of Energy;

(E) the Department of the Interior;

(F) the Department of Veterans Affairs; and

(G) the General Services Administration.

(5) REQUIREMENT.—In implementing the program established under this subsection, the Secretary shall leverage existing financing mechanisms, including energy savings performance contracts, utility energy service contracts, and annual appropriations.

(6) EVALUATION.—Using the guidelines of the Federal Energy Management Program relating to whole-building evaluation, measurement, and verification, the Secretary shall evaluate the costs and benefits of the buildings selected under paragraph (2), including an identification of—

(A) which advanced building technologies—

(i) are most cost-effective; and

(ii) show the most promise for—

(I) increasing building energy savings;

(II) increasing service performance to building occupants;

(III) reducing environmental impacts; and

(IV) establishing cybersecurity; and

(B) any other information the Secretary determines to be appropriate.

(7) AWARDS.—The Secretary may expand awards made under the Federal Energy Management Program and the Better Building Challenge to recognize specific agency achievements in accelerating the adoption of smart building technologies.

(c) SURVEY OF PRIVATE SECTOR SMART BUILDINGS.—

(1) SURVEY.—The Secretary shall conduct a survey of privately owned smart buildings throughout the United States, including commercial buildings, laboratory facilities, hospitals, multifamily residential buildings, and buildings owned by nonprofit organizations and institutions of higher education.

(2) SELECTION.—From among the smart buildings surveyed under paragraph (1), the Secretary shall select not fewer than 1 building each from an appropriate range of building sizes, types, and geographic locations.

(3) EVALUATION.—Using the guidelines of the Federal Energy Management Program relating to whole-building evaluation, measurement, and verification, the Secretary shall evaluate the costs and benefits of the buildings selected under paragraph (2), including an identification of—

(A) which advanced building technologies and systems—

(i) are most cost-effective; and

(ii) show the most promise for—

(I) increasing building energy savings;

(II) increasing service performance to building occupants;

(III) reducing environmental impacts; and

(IV) establishing cybersecurity; and

(B) any other information the Secretary determines to be appropriate.

(d) LEVERAGING EXISTING PROGRAMS.—

(1) BETTER BUILDINGS PROGRAM.—

(A) BETTER BUILDINGS CHALLENGE.—The Secretary shall carry out a program to provide technical assistance for entities to set and achieve goals to improve energy efficiency, reduce greenhouse gas emissions and emissions of other pollutants, and reduce embodied carbon in commercial and residential buildings through the commercial application of relevant tools and technologies. In carrying out this program, the Secretary shall—

(i) identify opportunities for optimizing energy efficiency, demand management, and increasing emissions reductions in buildings to achieve net-zero energy or

energy-generating buildings, including through electrification;

(ii) promote the commercial application of emerging concepts and technologies in buildings;

(iii) share best practices from successful projects; and

(iv) ensure a diversity of entities receive technical assistance, including low-income and rural communities.

(B) BETTER BUILDINGS ACCELERATOR.—In carrying out the program under subparagraph (A), the Secretary shall develop smart building accelerators that will demonstrate innovative policies and approaches to accelerate the transition to smart buildings in the public, institutional, laboratory, industrial, commercial, and residential sectors, including in rural, low-income, and multi-family housing.

(C) BUILDING AMERICA PROGRAM.—The Secretary shall carry out a research, development, and demonstration program on tools, technologies, and techniques to reduce energy use and emissions in new and existing residen-

tial buildings, in partnership with industry entities.

(2) RESEARCH AND DEVELOPMENT.—

(A) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary shall establish a program of research, development, demonstration, and commercial application to develop cost-effective tools, technologies, and practices that reduce greenhouse gas emissions or other pollutants from, increase the energy efficiency of, and increase beneficial electrification of new and existing commercial and residential buildings, including retrofits and electrification of existing buildings, rural housing, low-income housing, multi-family housing, and manufactured housing.

(B) ENERGY EQUITY.—The Secretary shall carry out research to identify barriers to and strategies for expanding the use of low-emissions and energy-efficient building technologies and appliances in the buildings where members of frontline communities live and work. Research topics covered under this subparagraph may include—

(i) barriers to the use of technologies developed under this subsection in rural, low-income, and multi-family housing;

(ii) causes of and solutions for inequitable energy costs in residential buildings based on race or class; and

(iii) solutions that enable energy-efficient homes while keeping housing affordable for low-income communities.

(C) NON-TECHNICAL BARRIERS.—The Secretary shall support research and analysis to identify non-technical barriers, and methods to address such barriers, to enable greater use of tools and technologies developed under this subsection in new and existing commercial and residential buildings, including rural housing, low-income housing, and multi-family housing.

(D) ADVANCED BUILDING CONSTRUCTION, DESIGN, AND RETROFITS.—As part of the program established under subparagraph (A), the Secretary shall support research and development on technologies and methodologies to enable advanced building design, construction techniques, and retrofits. In supporting re-

search and development under subparagraph (A), the Secretary shall—

(i) include considerations of a full lifecycle analysis during building design, manufacturing, and construction, including environmental considerations, embodied energy and embodied carbon in building materials, transportation of materials, and implications for final disposal and recycling;

(ii) incorporate principles of resilient building design and construction through the consideration of regional differences in—

(I) climate, season, temperature, and precipitation in consultation with the National Oceanic and Atmospheric Administration; and

(II) fuel mix and energy production, including through the development of vulnerability assessments and analysis of building resilience for proposed building designs, building sites, or existing buildings;

(iii) support research and development on the use of various potential energy sources and distributed generation to supply cooling, heating, and power for buildings, including integrated and adaptive control solutions that address traditional building energy management and emerging technologies, such as batteries, thermal storage, and combined heat and power, compatible with all sizes of buildings;

(iv) support the development and integration of technologies that enable low-emissions and energy-efficient or advanced buildings, such as heating, ventilation, air-conditioning, and refrigeration systems and other appliances that are cost-competitive over the life of the product as compared to conventional technologies and that incorporate considerations of retrofitting and ease of installation, using a whole-systems and whole-buildings approach;

(v) support the development and integration of cost-effective next-generation window and building envelope technologies

that incorporate considerations of retrofitting and ease of installation;

(vi) support development of alternative working fluids and refrigerants for use in buildings equipment to reduce their impact on climate change; and

(vii) research methods to enhance comfort and health of individual occupants in buildings that also result in improved energy efficiency and emissions reductions, including indoor air pollution.

(E) GRID-INTERACTIVE BUILDINGS.—As part of the program established under subparagraph (A), the Secretary shall support research and development to enable components of commercial and residential buildings to serve as dynamic energy loads and energy resources to enable smart building designs. In particular, the Secretary shall focus on the development of—

(i) advanced building energy management systems through the integration of sensors and advanced control technologies and systems that allow whole-building optimization and integration with other energy systems, including photovoltaics, electric

vehicles, and energy storage technologies such as thermal storage;

(ii) cost-effective sensors that enable monitoring of building conditions and energy load, including, as appropriate, reporting energy use and forecasting energy needs;

(iii) improved analysis of data on the energy use of devices connected to buildings, including miscellaneous electric loads;

(iv) advanced control technologies and systems that enable flexible operation of building components and that are capable of coordinating and executing energy control commands in response to signals from the electric grid;

(v) flexible building components capable of reporting and modulating energy use in response to control commands, as appropriate;

(vi) data analysis and communication protocols to further systems integration, interoperability, and automation;

(vii) building energy storage capabilities to modulate peak and off-peak energy demand;

(viii) distributed energy resources at the community- and building-level through localized electric grids;

(ix) technologies to reduce energy use and emissions in connected communities and neighborhoods located in a variety of climates, including by enabling transactive energy concepts; and

(x) cybersecurity practices that protect privacy and personally identifiable information.

(F) MODELING AND DATA ANALYSIS.—As part of the program established under subparagraph (A), the Secretary shall support the development of building models, including for the design and operation of buildings, and the analysis of relevant data to enable smart buildings. In particular, the Secretary shall focus on the development of—

(i) advanced modeling capabilities that include modeling of grid interactivity, resilience, and relevant behavioral, community-

scale, and urban-scale activities in order to—

(I) provide system-level analysis of new technologies, including distributed generation and storage;

(II) evaluate system benefits such as emissions reductions, community resilience, distribution grid reliability, and service to underserved communities;

(III) provide data, derived from both simulation and demonstration projects established under subparagraph (G), to inform decision support and new business models; and

(ii) automated methods to generate models of proposed or existing buildings;

(iii) methods to address barriers, including non-technical barriers, to commercial application of building models for building operation;

(iv) methods to analyze data collected by technologies in smart buildings and collections of buildings;

(v) artificial intelligence and machine learning approaches to building energy management; and

(vi) advanced data collection and monitoring methods for utilities at the building level and component level.

(G) DEMONSTRATION PROGRAM.—The Secretary shall establish a competitive grant program for the demonstration of advanced building technologies and systems developed under the program established under subparagraph (A) that—

(i) focuses on a range of new and existing building types, including low-income housing, rural housing and agricultural buildings, multi-family residential buildings, manufactured housing, and small and medium-sized commercial buildings; and

(ii) includes community-scale demonstration projects.

(H) TESTING AND VALIDATION.—In carrying out the program under subparagraph (A), the Secretary shall—

(i) support testing and validation activities to improve the commercial applica-

tion of relevant tools, technologies, and methods, including the use of testbeds to determine cost savings and performance in realistic scenarios; and

(ii) support analysis, testing, and validation to accurately determine energy savings, emissions reductions, cost-savings, and other potential impacts of the highest-performing appliances that are commercially available.

(I) PARTNERSHIPS.—In carrying out the activities authorized in this subsection, the Secretary shall work with utilities, State and local energy offices, building owners, technology developers, contractors, building developers, and other relevant entities to guide the focus areas of the activities of the program carried out under subparagraph (A) and to encourage the commercial application of these technologies by building owners, operators, developers, occupants, contractors, or other relevant entities.

(J) COORDINATION.—In carrying out this subsection, the Secretary shall coordinate across all relevant program offices at the Department of Energy, including the Office of Electricity,

the Advanced Manufacturing Office, the Vehicle Technologies Office, the Geothermal Technologies Office, and the Office of Cybersecurity, Energy Security, and Emergency Response.

(e) REPORT.—Not later than 2 years after the date of enactment of this Act, and every 2 years thereafter until a total of 3 reports have been made, the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Energy and Commerce and the Committee on Science, Space, and Technology of the House of Representatives a report on—

(1) the establishment of the Federal Smart Building Program and the evaluation of Federal smart buildings under subsection (b);

(2) the survey and evaluation of private sector smart buildings under subsection (c); and

(3) any recommendations of the Secretary to further accelerate the transition to smart buildings.

SEC. 1806. WATER HEATERS.

(a) DEFINITION OF WATER HEATER.—Section 321 of the Energy Policy and Conservation Act (42 U.S.C. 6291) is amended by striking paragraph (27) and inserting the following:

''(27) WATER HEATER.—

''(A) IN GENERAL.—The term 'water heater' means a product that utilizes oil, gas, or electricity to heat potable water for use outside the heater on demand, including—

''(i) storage type units that heat and store water at a thermostatically controlled temperature, including—

''(I) gas storage water heaters with an input of 75,000 Btu per hour or less, including heat pump type units that meet the current and voltage limits under clause (iii);

''(II) oil storage water heaters with an input of 105,000 Btu per hour or less; and

''(III) electric storage water heaters with an input of 12 kilowatts or less, including heat pump type units that meet the current and voltage limits under clause (iii);

''(ii)(I) instantaneous type units that heat water but contain not more than 1 gallon of water per 4,000 Btu per hour of input; and

''(II) in the case of—

"(aa) gas instantaneous water heaters, have an input of 200,000 Btu per hour or less and are designed and marketed to provide outlet hot water at a thermostatically controlled temperature of less than 180 degrees Fahrenheit;

"(bb) oil instantaneous water heaters, have an input of 210,000 Btu per hour or less; and

"(cc) electric instantaneous water heaters, have an input of 12 kilowatts or less;

"(iii) heat pump type units (including add-on heat pumps, integrated heat pumps with storage, split-system heat pumps that consist of a separate heat pump and storage tank that are designed and marketed to operate together, and all ancillary equipment, such as fans, storage tanks, pumps, electric resistance heating elements, or controls necessary for the device to perform its function) that—

''(I) have a maximum current rating of 24 amperes at a voltage not greater than 250 volts; and

''(II) are designed to transfer thermal energy from 1 temperature level to a different temperature level for the purpose of heating water;

''(iv) solar thermal-assisted electric storage units; and

''(v) solar thermal-assisted fossil fuel storage units.

''(B) EXCLUSIONS.—Unless otherwise determined by the Secretary under section 325(e)(7)(B), the term 'water heater' does not include—

''(i) electric storage type units described in subparagraph (A)(i)(III) that—

''(I) are designed and marketed exclusively for commercial building applications; and

''(II)(aa) are designed, constructed, inspected, tested, and stamped in accordance with Section IV, Part HLW, or Section X of the Boiler and Pressure Vessel Code pro-

mulgated by the American Society of Mechanical Engineers;

"(bb) exclusively use 3-phase electricity, are designed and marketed to provide outlet hot water at a thermostatically controlled temperature of 180 degrees Fahrenheit or greater, and operate only at rated voltages of not less than 208 volts; or

"(cc) exclusively use single-phase electricity, are designed and marketed to provide outlet hot water at a thermostatically controlled temperature of 180 degrees Fahrenheit or greater, and operate only at a rated voltage of 277 volts; or

"(ii) gas storage type units described in subparagraph (A)(i)(I) that—

"(I) are designed and marketed exclusively for commercial building applications; and

"(II) are designed, constructed, inspected, tested, and stamped in ac-

cordance with Section IV, Part HLW, of the Boiler and Pressure Vessel Code promulgated by the American Society of Mechanical Engineers.

''(C) MULTI-INPUT ELECTRIC STORAGE WATER HEATER.—The term 'multi-input electric storage water heater' means a product that—

''(i) is not a heat pump type unit described in subparagraph (A)(iii); and

''(ii) is designed, marketed, or shipped from the manufacturer with a capability of operating or being configured to operate at inputs greater than, equal to, or below 12 kilowatts.

''(D) SOLAR THERMAL-ASSISTED ELECTRIC STORAGE UNIT.—The term 'solar thermal-assisted electric storage unit' means a unit that—

''(i) has an input of 12 kilowatts or less;

''(ii) has at least 2 dedicated ports in addition to the ports used for introduction and delivery of potable water for the supply and return of water or a heat transfer fluid heated externally by solar panels;

''(iii) does not have electric resistance heating elements located in the lower half of the storage tank;

''(iv) has the temperature sensing device that controls the auxiliary electric heat source located in the upper half of the storage tank; and

''(v) has a ratio of less than 0.70 for the proportion that the certified first hour rating bears to the nominal volume of the storage tank.''.

(b) STANDARDS FOR WATER HEATERS.—Section 325(e) of the Energy Policy and Conservation Act (42 U.S.C. 6295(e)) is amended by adding at the end the following:

''(7) EXEMPTED WATER HEATERS.—

''(A) DEFINITION OF EXEMPTED WATER HEATER.—In this paragraph, the term 'exempted water heater' means a water heater described in section 321(27)(B).

''(B) MONITORING OF SHIPMENTS.—

''(i) SUBMISSION OF DATA.—Not later than 90 days after the date of enactment of this paragraph, and not later than May 1 of each year thereafter, the Secretary

shall require each manufacturer of water heaters to report to the Secretary the quantity of exempted water heaters, in each category of exempted water heaters, that the manufacturer shipped in the preceding calendar year.

''(ii) CONFIDENTIALITY REQUIREMENTS.—The Secretary shall treat shipment data reported by manufacturers under clause (i) as confidential business information subject to appropriate confidential data safeguards.

''(iii) PUBLICATION.—

''(I) BASELINE SHIPMENT DATA.—Not later than 120 days after the date of enactment of this paragraph, the Secretary shall publish an analysis of the data collected under clause (i) for public comment, subject to applicable confidentiality safeguards, which shall serve as the baseline data for the analysis described in subclause (II)(bb).

''(II) PERCENTAGE GROWTH FROM BASELINE.—Not later than

June 1 of each year after the year in which the Secretary publishes data under subclause (I), the Secretary shall publish—

"(aa) an analysis of the data collected under clause (i) for public comment, subject to applicable confidentiality safeguards;

"(bb) the percentage growth in the number of shipments within each category of exempted water heater relative to the baseline data described in subclause (I); and

"(cc) the determination of the Secretary as to whether the number of shipments for any category of exempted water heater have increased by more than 25 percent compared to the baseline data for that category.

"(C) INCLUSION OF EXEMPTED WATER HEATERS.—

"(i) IN GENERAL.—The Secretary shall, by regulation, revise the definition of

water heater under section 321(27) to include an exempted water heater under subparagraph (A) of that section if the Secretary makes an affirmative determination under subparagraph (B)(iii)(II)(cc) for that category of exempted water heater.

''(ii) ENERGY CONSERVATION STANDARDS.—Any category of exempted water heater included in the definition of water heater under clause (i) shall be required to meet the energy conservation standards applicable to an electric or gas storage type water heater under this part.

''(iii) EFFECTIVE DATE.—For any category of exempted water heater, the Secretary shall carry out clause (i), and require compliance under clause (ii), not later than 1 year after the date on which the Secretary makes the affirmative determination described in clause (i) for that category.

''(8) STANDARDS FOR MULTI-INPUT ELECTRIC STORAGE WATER HEATERS.—A multi-input electric storage water heater shall be subject to the test pro-

cedures, energy conservation standards, labeling (if applicable), and certification requirements—

"(A) for electric storage water heaters under this part; and

"(B) for storage water heaters under part C.

"(9) TECHNOLOGY-NEUTRAL ELECTRIC STORAGE WATER HEATER STANDARDS.—Notwithstanding any other provision of this Act, the Secretary may not create separate product classes for heat pump water heaters and other electric storage water heaters.".

(c) DEFINITION OF COMMERCIAL WATER HEATER.—Section 340 of the Energy Policy and Conservation Act (42 U.S.C. 6311) is amended by striking paragraph (12) and inserting the following:

"(12)(A) STORAGE WATER HEATER.—

"(i) IN GENERAL.—The term 'storage water heater' means a water heater that—

"(I) heats and stores water within an appliance at a thermostatically controlled temperature for delivery on demand; and

"(II) is not a water heater described in section 321(27)(A).

"(ii) EXCLUSION.—The term 'storage water heater' does not include a unit with an input rating of 4,000 Btu per hour or more per gallon of stored water.

"(B) INSTANTANEOUS WATER HEATER.—The term 'instantaneous water heater' means a water heater that—

"(i) has an input rating of at least 4,000 Btu per hour per gallon of stored water; and

"(ii) is not a water heater described in section 321(27)(A).

"(C) UNFIRED HOT WATER STORAGE TANK.—The term 'unfired hot water storage tank' means a tank used to store water that is heated externally.".

(d) LABELING REQUIREMENTS.—Section 344 of the Energy Policy and Conservation Act (42 U.S.C. 6315) is amended by adding at the end the following:

"(l) LABELS FOR CERTAIN COMMERCIAL WATER HEATERS.—

"(1) IN GENERAL.—Notwithstanding any other provision of this section, water heaters described in section 321(27)(B) shall be required to bear a permanent label, applied at the point of manufacture,

that, subject to paragraph (3), satisfies the requirements described in paragraph (2).

''(2) REQUIREMENTS.—A label required under paragraph (1) shall—

''(A) be made of material not adversely affected by water;

''(B) be attached by means of nonwater-soluble adhesive; and

''(C) bear the following notice printed in 16.5 point Arial Narrow Bold font: 'IMPORTANT INFORMATION: Exclusively intended for commercial installations. This model is not certified by the U.S. Department of Energy as a residential water heater. This model does not have a certified First Hour or UEF rating.'.

''(3) REVISION UPON PETITION.—On receipt of a petition by an interested party, the Secretary may conduct a rulemaking to revise the scope and requirements of the label required under paragraph (1).''.

(e) EFFECTIVE DATE.—This section and the amendments made by this section shall take effect 180 days after the date of enactment of this Act.

SEC. 1807. REBATE PROGRAM FOR ENERGY EFFICIENT ELECTROTECHNOLOGIES.

(a) DEFINITIONS.—In this section:

(1) ENERGY EFFICIENT ELECTROTECHNOLOGY.—The term ''energy efficient electrotechnology'' means—

(A) any electric technology that, when used instead of a fossil fuel-fired technology in an industrial process results in—

(i) energy efficiency, or production efficiency, gains; or

(ii) environmental benefits; or

(B) any electric technology that, when used instead of a fossil fuel-fired technology in an industrial application results in—

(i) improvements in on-site logistics or material handling; and

(ii) energy efficiency gains and environmental benefits.

(2) QUALIFIED ENTITY.—The term ''qualified entity'' means an industrial or manufacturing facility, commercial building, or a utility or energy service company.

(3) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(b) ESTABLISHMENT.—Not later than 90 days after the date of enactment of this Act, the Secretary shall establish a program to provide rebates in accordance with this section.

(c) REBATES.—The Secretary may provide a rebate under the program established under subsection (b) to the owner or operator of a qualified entity for expenditures made by the owner or operator of the qualified entity for an energy efficient electrotechnology that is used to replace a fossil fuel-fired technology.

(d) REQUIREMENTS.—To be eligible to receive a rebate under this section, the owner or operator of a qualified entity shall submit to the Secretary an application demonstrating—

(1) that the owner or operator of the qualified entity purchased an energy efficient electrotechnology;

(2) the energy efficiency gains, production efficiency gains, and environmental benefits, as applicable, resulting from use of the energy efficient electrotechnology—

(A) as measured by a qualified professional or verified by the energy efficient electrotechnology manufacturer, as applicable; or

(B) as determined by the Secretary;

(3) that the fossil fuel-fired technology replaced by the energy efficient electrotechnology has been permanently decommissioned and scrapped; and

(4) that all laborers and mechanics who were involved in the installation or maintenance, or construction or renovation to support such installation or maintenance, of the energy efficient electrotechnology, or the decommissioning and scrapping of the fossil fuel-fired technology replaced by the energy efficient electrotechnology, and who were employed by the owner or operator of the qualified entity, or contractors or subcontractors at any tier thereof, were paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code (commonly referred to as the ''Davis-Bacon Act'').

(e) LIMITATION.—The Secretary may not provide a rebate under the program established under subsection (b) to an owner or operator of a qualified entity for expenditures made by the owner or operator of the qualified entity for an energy efficient electrotechnology that is used to replace a fossil fuel-fired technology if the Secretary deter-

mines that such expenditures were necessary for the owner or operator to comply with Federal or State law.

(f) AUTHORIZED AMOUNT OF REBATE.—The amount of a rebate provided under this section shall be not less than 30 percent, and not more than 50 percent, of the overall cost of the energy efficient electrotechnology, including installation costs.

(g) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $100,000,000 for each of fiscal years 2021 through 2025.

SEC. 1808. REMOVING BARRIERS TO EFFICIENCY.

(a) IN GENERAL.—Section 327 of the Energy Policy and Conservation Act (42 U.S.C. 6297) is amended by adding at the end the following:

''(h) SUSPENSION OF PREEMPTION.—This section shall not apply to a covered product during any period that—

''(1) begins on the date that is 8 years after the date on which the energy conservation standard was established under section 325 for the covered product; and

''(2) ends on the effective date of an energy conservation standard established after the date described in paragraph (1) under section 325 for the covered product, that is equivalent to, or more strin-

gent than, the standard described in such paragraph.

''(i) NO PREEMPTION ABSENT A FEDERAL STANDARD.—

''(1) APPLICATION.—Notwithstanding any other provision of this part, this section does not apply to any State regulation insofar as the State regulation applies to any product not subject to an energy conservation standard established under section 325.

''(2) COMPLIANCE PERIOD.—Any State regulation prescribed or enacted for a covered product before the date on which an energy conservation standard is established under section 325 for the covered product shall not be preempted until the effective date of an equivalent or more stringent energy conservation standard under section 325 for the covered product.''.

(b) ASHRAE PRODUCTS.—Section 345(b)(2) of the Energy Policy and Conservation Act (42 U.S.C. 6316(b)(2)) is amended by adding at the end the following:

''(E) Notwithstanding subparagraph (A), a standard prescribed or established under section 342(a) shall not supersede any State or local regulation concerning the energy efficiency or energy use of a product for which a

standard is prescribed or established pursuant to such section during any period that—

''(i) begins on the date that is 8 years after the date on which such standard was prescribed or established; and

''(ii) ends on the effective date of a standard prescribed or established after the date described in clause (i) under section 342(a) for the product, that is equivalent to, or more stringent than, the standard described in such clause.''.

SEC. 1809. HOME WILDFIRE RISK REDUCTION REBATE PROGRAM.

(a) IN GENERAL.—The Secretary of Energy shall establish a program, to be known as the ''Home Wildfire Risk Reduction Rebate Program'', to provide rebates to homeowners to defray the costs of retrofitting an existing home to be wildfire-resistant.

(b) AMOUNT OF REBATE.—In carrying out the Home Wildfire Risk Reduction Rebate Program, the Secretary shall provide a homeowner a rebate of up to—

(1) $10,000 for the retrofitting of roof features, including the roof covering, vents, soffit and fascia, and gutters, to be wildfire-resistant;

(2) $20,000 for the retrofitting of exterior wall features, including sheathing and siding, doors, and windows, to be wildfire-resistant;

(3) $5,000 for the retrofitting of a deck, including the decking, framing, and fascia, to be wildfire-resistant; and

(4) $1,500 for the retrofitting of near-home landscaping, including mulch and landscape fabric in a 5-foot zone immediately around the home and under all attached decks, to be wildfire-resistant.

(c) INCLUSION.—For purposes of this section, the cost of a retrofit shall include all costs associated with the retrofit, including the purchase and installation of wildfire-resistant products and components.

(d) LIMITATION.—The amount of the rebate under this section shall not exceed 50 percent of the cost of the retrofit.

(e) PROCESS.—

(1) FORMS; REBATE PROCESSING SYSTEM.—Not later than 90 days after the date of enactment of this Act, the Secretary, in consultation with the Secretary of the Treasury, shall—

(A) develop and make available rebate forms required to receive a rebate under this section;

(B) establish a Federal rebate processing system which shall serve as a database and information technology system that will allow homeowners to submit required rebate forms; and

(C) establish a website that provides information on rebates provided under this section, including how to determine whether particular measures qualify for a rebate under this section and how to receive such a rebate.

(2) SUBMISSION OF FORMS.—In order to receive a rebate under this section, a homeowner shall submit the required rebate forms, and any other information the Secretary determines appropriate, to the Federal rebate processing system established under paragraph (1).

(f) MODERATE-INCOME HOUSEHOLDS.—

(1) CERTIFICATIONS.—The Secretary shall establish procedures for certifying that the household of a homeowner is moderate-income for purposes of this section.

(2) LIMITATION FOR MODERATE INCOME HOUSEHOLDS.—Notwithstanding subsection (d), for households of homeowners that are certified pursuant to the procedures established under paragraph

(1) as moderate-income, the amount of the rebate under this section shall not exceed 80 percent of the cost of the retrofit.

(3) OUTREACH.—The Secretary shall establish procedures to—

(A) provide information to households of homeowners that are certified pursuant to the procedures established under paragraph (1) as moderate-income regarding other programs and resources relating to assistance for upgrades of homes, including the weatherization assistance program implemented under part A of title IV of the Energy Conservation and Production Act (42 U.S.C. 6861 et seq.); and

(B) refer such households, as applicable, to such other programs and resources.

(g) DEFINITION.—In this section, the term ''wildfire-resistant'' means meeting or exceeding the specifications of the International Code Council's 2018 International Wildland-Urban Interface Code (IWUIC).

(h) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $500,000,000 for each of fiscal years 2021 through 2025.

TITLE II—RENEWABLE ENERGY

Subtitle A—Energy Storage

PART 1—CONSIDERATION OF ENERGY STORAGE SYSTEMS

SEC. 2101. CONSIDERATION OF ENERGY STORAGE SYSTEMS.

(a) IN GENERAL.—Section 111(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)) is amended by adding at the end the following:

''(20) CONSIDERATION OF ENERGY STORAGE SYSTEMS.—Each State shall consider requiring that, as part of a supply side resource planning process, an electric utility of the State demonstrate to the State that the electric utility considered an investment in energy storage systems based on appropriate factors, including—

''(A) total costs and normalized life cycle costs;

''(B) cost effectiveness;

''(C) improved reliability;

''(D) security; and

''(E) system performance and efficiency.''.

(b) TIME LIMITATIONS.—Section 112(b) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(b)) is amended by adding at the end the following:

''(7)(A) Not later than 1 year after the date of enactment of this paragraph, each State regulatory authority (with respect to each electric utility for which the State regulatory authority has ratemaking authority) and each nonregulated electric utility shall commence the consideration referred to in section 111, or set a hearing date for consideration, with respect to the standard established by paragraph (20) of section 111(d).

''(B) Not later than 2 years after the date of enactment of this paragraph, each State regulatory authority (with respect to each electric utility for which the State regulatory authority has ratemaking authority), and each nonregulated electric utility, shall complete the consideration, and shall make the determination, referred to in section 111 with respect to the standard established by paragraph (20) of section 111(d).''.

(c) FAILURE TO COMPLY.—Section 112(c) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(c)) is amended by adding at the end the following: ''In the case of the standard established by paragraph (20) of section 111(d), the reference contained in this subsection to the date of enactment of this Act shall be

deemed to be a reference to the date of enactment of such paragraph (20).''.

(d) PRIOR STATE ACTIONS.—Section 112 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622) is amended by adding at the end the following:

''(g) PRIOR STATE ACTIONS.—Subsections (b) and (c) of this section shall not apply to the standard established by paragraph (20) of section 111(d) in the case of any electric utility in a State if, before the enactment of this subsection—

''(1) the State has implemented for such utility the standard concerned (or a comparable standard);

''(2) the State regulatory authority for such State or relevant nonregulated electric utility has conducted a proceeding to consider implementation of the standard concerned (or a comparable standard) for such utility; or

''(3) the State legislature has voted on the implementation of such standard (or a comparable standard) for such utility.''.

(e) PRIOR AND PENDING PROCEEDINGS.—Section 124 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2634) is amended by adding at the end the following: ''In the case of the standard established by paragraph (20) of section 111(d), the reference contained

in this section to the date of the enactment of this Act shall be deemed to be a reference to the date of enactment of such paragraph (20).''.

SEC. 2102. COORDINATION OF PROGRAMS.

To the maximum extent practicable, the Secretary of Energy shall ensure that the funding and administration of the different offices within the Grid Modernization Initiative of the Department of Energy and other programs conducting energy storage research are coordinated and streamlined.

PART 2—ENERGY STORAGE AND MICROGRID PROJECTS

SEC. 2121. DEFINITIONS.

(a) DEFINITIONS.—In this part:

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

(A) a rural electric cooperative; or

(B) a nonprofit organization working with at least 6 rural electric cooperatives.

(2) ENERGY STORAGE.—The term ''energy storage'' means the use of equipment or facilities relating to the electric grid that are capable of absorbing and converting energy, as applicable, storing the energy for a period of time, and dispatching the energy, that—

(A) use mechanical, electrochemical, biochemical, or thermal processes, to convert and store energy that was generated at an earlier time for use at a later time;

(B) use mechanical, electrochemical, biochemical, or thermal processes to convert and store energy generated from mechanical processes that would otherwise be wasted for delivery at a later time; or

(C) convert and store energy in an electric, thermal, or gaseous state for consumption at a later time in a manner that avoids the need to use electricity or other fuel sources at that later time, as is offered by grid-enabled water heaters, building heaters or coolers, electric vehicles, mini-pumped hydroelectric facilities, electrolysis processes that make hydrogen for transportation or industrial needs, or any other load shaping mechanism that includes energy storage.

(3) ISLAND.—The term ''island mode'' means a mode in which a distributed generator or energy storage device continues to power a location in the absence of electric power from the primary source.

(4) MICROGRID.—The term ''microgrid'' means an interconnected system of loads and distributed energy resources, including generators and energy storage devices, within clearly defined electrical boundaries that—

(A) acts as a single controllable entity with respect to the electric grid; and

(B) can connect to, and disconnect from, the electric grid to operate in both grid-connected mode and island mode.

(5) RENEWABLE ENERGY SOURCE.—The term ''renewable energy source'' has the meaning given the term in section 609(a) of the Public Utility Regulatory Policies Act of 1978 (7 U.S.C. 918c(a)).

(6) RURAL ELECTRIC COOPERATIVE.—The term ''rural electric cooperative'' means an electric cooperative (as defined in section 3 of the Federal Power Act (16 U.S.C. 796)) that sells electric energy to persons in rural areas.

(7) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

SEC. 2122. ENERGY STORAGE AND MICROGRID ASSISTANCE PROGRAM.

(a) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary shall establish a program under which the Secretary shall—

(1) provide grants to eligible entities under subsection (c);

(2) provide technical assistance to eligible entities under subsection (d); and

(3) disseminate information to eligible entities on—

(A) the activities described in subsections (c)(1) and (d); and

(B) potential and existing energy storage and microgrid projects.

(b) COOPERATIVE AGREEMENT.—The Secretary may enter into a cooperative agreement with an eligible entity to carry out subsection (a).

(c) GRANTS.—

(1) IN GENERAL.—The Secretary shall award grants to eligible entities for identifying, evaluating, designing, and demonstrating energy storage and microgrid projects that utilize energy from renewable energy sources.

(2) APPLICATION.—To be eligible to receive a grant under paragraph (1), 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.

(3) USE OF GRANT.—An eligible entity that receives a grant under paragraph (1)—

(A) shall use the grant—

(i) to conduct feasibility studies to assess the potential for implementation or improvement of energy storage or microgrid projects;

(ii) to analyze and implement strategies to overcome barriers to energy storage or microgrid project implementation, including financial, contracting, siting, and permitting barriers;

(iii) to conduct detailed engineering of energy storage or microgrid projects;

(iv) to perform a cost-benefit analysis with respect to an energy storage or microgrid project;

(v) to plan for both the short- and long-term inclusion of energy storage or microgrid projects into the future development plans of the eligible entity; or

(vi) to purchase and install necessary equipment, materials, and supplies for demonstration of emerging technologies; and

(B) may use the grant to obtain technical assistance from experts in carrying out the activities described in subparagraph (A).

(4) CONDITION.—As a condition of receiving a grant under paragraph (1), an eligible entity shall—

(A) implement a public awareness campaign, in coordination with the Secretary, about the project implemented under the grant in the community in which the eligible entity is located, which campaign shall include providing projected environmental benefits achieved under the project, where to find more information about the program established under this section, and any other information the Secretary determines necessary;

(B) submit to the Secretary, and make available to the public, a report that describes—

(i) any energy cost savings and environmental benefits achieved under the project; and

(ii) the results of the project, including quantitative assessments to the extent practicable, associated with each activity described in paragraph (3)(A); and

(C) create and disseminate tools and resources that will benefit other rural electric cooperatives, which may include cost calculators, guidebooks, handbooks, templates, and training courses.

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

(d) TECHNICAL ASSISTANCE.—

(1) IN GENERAL.—In carrying out the program established under subsection (a), the Secretary shall provide eligible entities with technical assistance relating to—

(A) identifying opportunities for energy storage and microgrid projects;

(B) understanding the technical and economic characteristics of energy storage or microgrid projects;

(C) understanding financing alternatives;

(D) permitting and siting issues;

(E) obtaining case studies of similar and successful energy storage or microgrid projects;

(F) reviewing and obtaining computer software for assessment, design, and operation and maintenance of energy storage or microgrid systems; and

(G) understanding and utilizing the reliability and resiliency benefits of energy storage and microgrid projects.

(2) EXTERNAL CONTRACTS.—In carrying out paragraph (1), the Secretary may enter into contracts with third-party experts, including engineering, finance, and insurance experts, to provide technical assistance to eligible entities relating to the activities described in such paragraph, or other relevant activities, as determined by the Secretary.

SEC. 2123. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—There is authorized to be appropriated to carry out this part $5,000,000 for each of fiscal years 2021 through 2025.

(b) ADMINISTRATIVE COSTS.—Not more than 5 percent of the amount appropriated under subsection (a) for each fiscal year shall be used for administrative expenses.

Subtitle B—Dam Safety

SEC. 2201. HYDROELECTRIC PRODUCTION INCENTIVES AND EFFICIENCY IMPROVEMENTS.

(a) HYDROELECTRIC PRODUCTION INCENTIVES.—Section 242 of the Energy Policy Act of 2005 (42 U.S.C. 15881) is amended—

(1) in subsection (b), by striking paragraph (1) and inserting the following:

''(1) QUALIFIED HYDROELECTRIC FACILITY.—The term 'qualified hydroelectric facility' means a turbine or other generating device owned or solely operated by a non-Federal entity—

''(A) that generates hydroelectric energy for sale; and

''(B)(i) that is added to an existing dam or conduit; or

''(ii)(I) that has a generating capacity of not more than 10 megawatts;

''(II) for which the non-Federal entity has received a construction authorization from the Federal Energy Regulatory Commission, if applicable; and

''(III) that is constructed in a region in which there is inadequate electric service, as determined by the Secretary.'';

(2) in subsection (c), by striking ''10'' and inserting ''22'';

(3) in subsection (e)(2), by striking ''section 29(d)(2)(B)'' and inserting ''section 45K(d)(2)(B)'';

(4) in subsection (f), by striking ''20'' and inserting ''32''; and

(5) in subsection (g), by striking ''each of the fiscal years 2006 through 2015'' and inserting ''each of fiscal years 2019 through 2036''.

(b) HYDROELECTRIC EFFICIENCY IMPROVEMENT.—Section 243(c) of the Energy Policy Act of 2005 (42 U.S.C. 15882(c)) is amended by striking ''each of the fiscal years 2006 through 2015'' and inserting ''each of fiscal years 2019 through 2036''.

SEC. 2202. FERC BRIEFING ON EDENVILLE DAM AND SANFORD DAM FAILURES.

Not later than 90 days after the date on which the Forensic Investigation Team submits to the Federal Energy Regulatory Commission the reports on the root causes, and any other contributing causes, of the Edenville Dam and Sanford Dam failures, the Federal Energy Regulatory Commission shall conduct a briefing for, and submit a report summarizing such briefing to, the Committee on Energy and Commerce of the House of Representatives that includes—

(1) an explanation of the findings of the Forensic Investigation Team reports on the root causes, and any other contributing causes, of the Edenville Dam and Sanford Dam failures;

(2) a determination of whether the dam safety procedures of the Federal Energy Regulatory Commission should be revised in light of the lessons learned from such reports;

(3) a determination of whether additional safety inspections of dams should be required after large storms;

(4) a determination of whether the safety requirements and testing protocols for dams adequately account for the projected effects of climate change and atmospheric rivers on dams; and

(5) a determination of whether additional actions should be taken to ensure the safety of dams that operate without an emergency spillway.

SEC. 2203. DAM SAFETY CONDITIONS.

Section 10 of the Federal Power Act (16 U.S.C. 803) is amended by adding at the end the following:

''(k) That the dam and other project works meet the Commission's dam safety requirements and that the licensee shall continue to manage, operate, and maintain the dam and other project works in a manner that ensures

dam safety and public safety under the operating conditions of the license.''.

SEC. 2204. DAM SAFETY REQUIREMENTS.

Section 15 of the Federal Power Act (16 U.S.C. 808) is amended by adding at the end the following:

''(g) The Commission may issue a new license under this section only if the Commission determines that the dam and other project works covered by the license meet the Commission's dam safety requirements and that the licensee can continue to manage, operate, and maintain the dam and other project works in a manner that ensures dam safety and public safety under the operating conditions of the new license.''.

SEC. 2205. VIABILITY PROCEDURES.

The Federal Energy Regulatory Commission shall establish procedures to assess the financial viability of an applicant for a license under the Federal Power Act to meet applicable dam safety requirements and to operate the dam and project works under the license.

SEC. 2206. FERC DAM SAFETY TECHNICAL CONFERENCE WITH STATES.

(a) TECHNICAL CONFERENCE.—Not later than April 1, 2021, the Federal Energy Regulatory Commission, acting through the Office of Energy Projects, shall hold a

technical conference with the States to discuss and provide information on—

(1) dam maintenance and repair;

(2) Risk Informed Decision Making (RIDM);

(3) climate and hydrological regional changes that may affect the structural integrity of dams; and

(4) high hazard dams.

(b) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $1,000,000 for fiscal year 2021.

(c) STATE DEFINED.—In this section, the term ''State'' has the meaning given such term in section 3 of the Federal Power Act (16 U.S.C. 796).

SEC. 2207. REQUIRED DAM SAFETY COMMUNICATIONS BETWEEN FERC AND STATES.

(a) IN GENERAL.—The Commission, acting through the Office of Energy Projects, shall notify a State within which a project is located when—

(1) the Commission issues a finding, following a dam safety inspection, that requires the licensee for such project to take actions to repair the dam and other project works that are the subject of such finding;

(2) after a period of 5 years starting on the date a finding under paragraph (1) is issued, the li-

censee has failed to take actions to repair the dam and other project works, as required by such finding; and

(3) the Commission initiates a non-compliance proceeding or otherwise takes steps to revoke a license issued under section 4 of the Federal Power Act (16 U.S.C. 797) due to the failure of a licensee to take actions to repair a dam and other project works.

(b) NOTICE UPON REVOCATION, SURRENDER, OR IMPLIED SURRENDER OF A LICENSE.—If the Commission issues an order to revoke a license or approve the surrender or implied surrender of a license under the Federal Power Act (16 U.S.C. 792 et seq.), the Commission shall provide to the State within which the project that relates to such license is located—

(1) all records pertaining to the structure and operation of the applicable dam and other project works, including, as applicable, any dam safety inspection reports by independent consultants, specifications for required repairs or maintenance of such dam and other project works that have not been completed, and estimates of the costs for such repairs or maintenance;

(2) all records documenting the history of maintenance or repair work for the applicable dam and other project works;

(3) information on the age of the dam and other project works and the hazard classification of the dam and other project works;

(4) the most recent assessment of the condition of the dam and other project works by the Commission;

(5) as applicable, the most recent hydrologic information used to determine the potential maximum flood for the dam and other project works; and

(6) the results of the most recent risk assessment completed on the dam and other project works.

(c) DEFINITION.—In this section:

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

(2) LICENSEE.—The term ''licensee'' has the meaning given such term in section 3 of the Federal Power Act (16 U.S.C. 796).

(3) PROJECT.—The term ''project'' has the meaning given such term in section 3 of the Federal Power Act (16 U.S.C. 796).

SEC. 2208. KLAMATH HYDROELECTRIC SETTLEMENT AGREEMENT TRIBAL FAIRNESS.

(a) DEFINITIONS.—In this section:

(1) FACILITY.—The term ''facility'' means 1 or more of the following hydropower facilities (including appurtenant works licensed to PacifiCorp) within the jurisdictional boundary of the Klamath Hydroelectric Project, FERC Project No. 2082 (as applicable):

(A) Iron Gate Dam.

(B) Copco No. 1 Dam.

(C) Copco No. 2 Dam.

(D) J.C. Boyle Dam.

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

(3) HARMED INDIAN TRIBES.—The term ''harmed Indian Tribes'' means—

(A) the Klamath Tribes; and

(B) such other Indian Tribes that are located downstream of the Klamath Hydroelectric Project.

(4) INDIAN TRIBE.—The term ''Indian Tribe'' has the meaning given the term ''Indian tribe'' in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304).

(5) LICENSEE.—The term ''licensee'' means the owner and licensee of the facility (as of the date of enactment of this Act).

(b) IN GENERAL.—In light of the specific facts and circumstances of the Klamath Hydroelectric Settlement Agreement that anticipated dam removal to commence in 2020, and to mitigate the historic and ongoing damages caused by the facility to aquatic and Tribal trust resources, the Commission shall not issue any annual license for the facility under section 15(a)(1) of the Federal Power Act (16 U.S.C. 808(a)(1)) unless the Commission has provided harmed Indian Tribes and the States of California and Oregon the opportunity to recommend terms and conditions under section 4(e), section 10, and section 18 of the Federal Power Act (16 U.S.C. 797(e), 803, and 811), including any conditions providing for fishways or fish recovery.

(c) STUDIES.—Upon approval of an annual license pursuant to subsection (b), the Commission shall require the licensee to provide to the Commission the following:

(1) A study describing the impacts of the facility during the previous year on instream flows, water use, water temperature, and water quality.

(2) A study describing the impacts of the facility during the previous year on fish and wildlife re-

sources, including river fisheries, reservoir fisheries, anadromous fish, and any marine species listed as a threatened species or endangered species under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) including Southern Resident killer whales (Orcinus orca).

(3) A study describing the impacts of the facility during the previous year on sediment transport.

(4) A study forecasting the impacts of climate change to power generation at the facility.

(5) A certification from the California Department of Water Resources, Division of Safety of Dams, following one or more comprehensive studies of the stability and safety of the facility that are funded by the licensee, that each element of the facility meets all current Federal and State seismic, stability, and safety standards and that there will be no significant risk of dam failure during the term of the license.

(6) A report, to be made publicly available by the Commission, on the financial status of the facility, including—

(A) an analysis comparing the cost of power generated at the facility to revenue at-

tributable to the facility during the preceding year;

(B) a projection of the cost of power generated at the facility and the revenue attributable to the facility during the 5-year period beginning on the date of the license;

(C) an explanation of whether the financial terms of the Klamath Hydroelectric Settlement Agreement, as amended, have been met; and

(D) a detailed description of the annual costs associated with the facility that are passed through to the ratepayers of the licensee.

(d) EXCEPTION.—The requirements of this section shall not apply to any entity filing a surrender application as specified in the Commission's order relating to the facility dated July 16, 2020 (172 FERC 61,062).

(e) LEGAL CLAIMS.—Nothing in this section shall be construed to adversely affect any legal claims of harmed Indian Tribes, including claims for violations of any Executive Order pertaining to one or more Indian Tribes, any treaty between the United States and one or more Indian Tribes, or for damages caused by the facility under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) or the Marine Mammal Protection Act of 1972 (16 U.S.C.

1361 et seq.). Such claims shall not be limited by any statute of limitations.

Subtitle C—Distributed Renewable Energy

SEC. 2301. DEFINITIONS.

In this subtitle:

(1) AUTHORITY HAVING JURISDICTION.—The term ''authority having jurisdiction'' means any State, county, local, or Tribal office or official with jurisdiction—

(A) to issue permits;

(B) to conduct inspections to enforce the requirements of a relevant code or standard; or

(C) to approve the installation of, or the equipment and materials used in the installation of, qualifying distributed energy systems.

(2) DISTRIBUTED ENERGY SYSTEM INSTALLER.—The term ''distributed energy system installer'' means an entity or individual—

(A) with knowledge and skills relating to—

(i) the construction and operation of the equipment used in qualifying distributed energy systems; and

(ii) the installation of qualifying distributed energy systems; and

(B) that has employed safety training to recognize and avoid the hazards involved in constructing, operating, and installing qualifying distributed energy systems.

(3) QUALIFYING DISTRIBUTED ENERGY SYSTEM.—The term ''qualifying distributed energy system'' means any equipment or materials installed in, on, or near a residential, commercial, or industrial building to support onsite or local energy use, including—

(A) to generate electricity from distributed renewable energy sources, including from—

(i) solar photovoltaic modules or similar solar energy technologies;

(ii) wind power systems; and

(iii) hydrogen electrolysis and fuel cell systems;

(B) to store and discharge electricity from batteries with a capacity of at least 2 kilowatt hours;

(C) to charge a plug-in electric drive vehicle at a power rate of at least 2 kilowatts;

(D) to refuel a fuel cell electric vehicle; or

(E) to generate electricity from fuel cell systems with a capacity of at least 2 kilowatt hours.

(4) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

SEC. 2302. ESTABLISHMENT OF PROGRAM TO FACILITATE VOLUNTARY STREAMLINED PROCESS FOR LOCAL PERMITTING OF QUALIFYING DISTRIBUTED ENERGY SYSTEMS.

(a) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary, in consultation with trade associations and other entities representing distributed energy system installers and organizations representing State, local, and Tribal governments engaged in permitting, shall establish and carry out a program to establish a voluntary streamlined permitting process for local permitting and inspection of qualifying distributed energy systems, in concert with relevant national consensus-based codes and specifications and standards referenced therein.

(b) ACTIVITIES OF THE PROGRAM.—In carrying out the program established under subsection (a), the Secretary shall—

(1) facilitate the development and maintenance of a streamlined permitting process that includes a

national online permitting platform for expediting, standardizing, and streamlining permitting, that authorities having jurisdiction may use to receive, review, and approve permit applications relating to qualifying distributed energy systems;

(2) establish a model expedited permit-to-build protocol for qualifying distributed energy systems;

(3) provide technical assistance to authorities having jurisdiction on using and adopting—

(A) the streamlined permitting process described in paragraph (1); and

(B) the model expedited permit-to-build protocol described in paragraph (2);

(4) develop and maintain a voluntary national inspection protocol integrated with the national online permitting system described in paragraphs (1) and (2) and related tools to expedite, standardize, and streamline the inspection of qualifying distributed energy systems, including—

(A) by investigating the potential for using remote inspections; and

(B) by investigating the potential for sample-based inspection for distributed energy system installers with a demonstrated track record of high-quality work; and

(5) take any other action to expedite, standardize, streamline, or improve the process for permitting, inspecting, or interconnecting qualifying distributed energy systems.

(c) SUPPORT SERVICES.—The Secretary shall—

(1) provide technical assistance to authorities having jurisdiction, any administrator of a national online permitting platform, government software providers, and any other entity determined appropriate by the Secretary in carrying out the activities described in subsection (b); and

(2) provide such financial assistance as the Secretary determines appropriate from any funds appropriated to carry out this subtitle.

SEC. 2303. DISTRIBUTED ENERGY OPPORTUNITY COMMUNITIES.

(a) IN GENERAL.—The Secretary shall recognize and certify certain communities as ''Distributed Energy Opportunity Communities''.

(b) QUALIFICATIONS.—The Secretary may certify a State, local community, or Tribe as a ''Distributed Energy Opportunity Community'' if that State, local community, or Tribe has adopted and implemented the model expedited permit-to-build protocol established under the program established under section 2302.

(c) PROCESS.—The Secretary may confer a certification under subsection (a) through existing programs of the Department of Energy.

(d) GRANTS.—The Secretary may award competitive grants, using funds appropriated to the Secretary to carry out this subtitle, to encourage communities to adopt the model expedited permit-to-build protocol and the standardized inspection process established under the program established under section 2302.

SEC. 2304. AUTHORIZATION OF APPROPRIATIONS.

There is authorized to be appropriated to the Secretary to carry out this subtitle $20,000,000 for each of fiscal years 2021 through 2025.

Subtitle D—Low-Income Solar

SEC. 2401. GRANT PROGRAM FOR SOLAR INSTALLATIONS LOCATED IN, OR THAT SERVE, LOW-INCOME AND UNDERSERVED AREAS.

(a) DEFINITIONS.—In this section:

(1) BENEFICIARY.—The term ''beneficiary'' means a low-income household or a low-income household in an underserved area.

(2) COMMUNITY SOLAR FACILITY.—The term ''community solar facility'' means a solar generating facility that—

(A) through a voluntary program, has multiple subscribers that receive financial benefits that are directly attributable to the facility;

(B) has a nameplate rating of 5 megawatts AC or less; and

(C) is located in the utility distribution service territory of subscribers.

(3) COMMUNITY SOLAR SUBSCRIPTION.—The term ''community solar subscription'' means a share in the capacity, or a proportional interest in the electricity generation, of a community solar facility.

(4) COVERED FACILITY.—The term ''covered facility'' means—

(A) a community solar facility—

(i) that is located in an underserved area; or

(ii) at least 50 percent of the capacity of which is reserved for low-income households;

(B) a solar generating facility located at a residence of a low-income household; or

(C) a solar generating facility located at a multi-family affordable housing complex.

(5) COVERED STATE.—The term ''covered State'' means a State with processes in place to en-

sure that covered facilities deliver financial benefits to low-income households.

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

(A) a nonprofit organization that provides services to low-income households or multi-family affordable housing complexes;

(B) a developer, owner, or operator of a community solar facility that reserves a portion of the capacity of the facility for subscribers who are members of low-income households or for low-income households that otherwise financially benefit from the facility;

(C) a covered State, or political subdivision thereof;

(D) an Indian Tribe or a tribally owned electric utility;

(E) a Native Hawaiian community-based organization;

(F) any other national or regional entity that has experience developing or installing solar generating facilities for low-income households that maximize financial benefits to those households; and

(G) an electric cooperative or municipal electric utility (as such terms are defined in section 3 of the Federal Power Act).

(7) ELIGIBLE INSTALLATION PROJECT.—The term ''eligible installation project'' means a project to install a covered facility in a covered State.

(8) ELIGIBLE PLANNING PROJECT.—The term ''eligible planning project'' means a project to carry out pre-installation activities for the development of a covered facility in a covered State.

(9) ELIGIBLE PROJECT.—The term ''eligible project'' means—

(A) an eligible planning project; or

(B) an eligible installation project.

(10) FEASIBILITY STUDY.—The term ''feasibility study'' means any activity to determine the feasibility of a specific solar generating facility, including a customer interest assessment and a siting assessment, as determined by the Secretary.

(11) INDIAN TRIBE.—The term ''Indian Tribe'' means any Indian Tribe, band, nation, or other organized group or community, including any Alaska Native village, Regional Corporation, or Village Corporation (as defined in, or established pursuant to, the Alaska Native Claims Settlement Act (43 U.S.C.

1601 et seq.)), that is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

(12) INTERCONNECTION SERVICE.—The term ''interconnection service'' has the meaning given such term in section 111(d)(15) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)(15)).

(13) LOW-INCOME HOUSEHOLD.—The term ''low-income household'' means that income in relation to family size which—

(A) is at or below 200 percent of the poverty level determined in accordance with criteria established by the Director of the Office of Management and Budget, except that the Secretary may establish a higher level if the Secretary determines that such a higher level is necessary to carry out the purposes of this section;

(B) is the basis on which cash assistance payments have been paid during the preceding 12-month period under titles IV and XVI of the Social Security Act (42 U.S.C. 601 et seq.,

1381 et seq.) or applicable State or local law; or

(C) if a State elects, is the basis for eligibility for assistance under the Low-Income Home Energy Assistance Act of 1981 (42 U.S.C. 8621 et seq.), provided that such basis is at least 200 percent of the poverty level determined in accordance with criteria established by the Director of the Office of Management and Budget.

(14) MULTI-FAMILY AFFORDABLE HOUSING COMPLEX.—The term ''multi-family affordable housing complex'' means any federally subsidized affordable housing complex in which at least 50 percent of the units are reserved for low-income households.

(15) NATIVE HAWAIIAN COMMUNITY-BASED ORGANIZATION.—The term ''Native Hawaiian community-based organization'' means any organization that is composed primarily of Native Hawaiians from a specific community and that assists in the social, cultural, and educational development of Native Hawaiians in that community.

(16) PROGRAM.—The term ''program'' means the program established under subsection (b).

(17) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(18) SOLAR GENERATING FACILITY.—The term ''solar generating facility'' means—

(A) a generator that creates electricity from light photons; and

(B) the accompanying hardware enabling that electricity to flow—

(i) onto the electric grid;

(ii) into a facility or structure; or

(iii) into an energy storage device.

(19) STATE.—The term ''State'' means each of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Northern Mariana Islands, the Virgin Islands, and American Samoa.

(20) SUBSCRIBER.—The term ''subscriber'' means a person who—

(A) owns a community solar subscription, or an equivalent unit or share of the capacity or generation of a community solar facility; or

(B) financially benefits from a community solar facility, even if the person does not own a community solar subscription for the facility.

(21) UNDERSERVED AREA.—The term ''underserved area'' means—

(A) a geographical area with low or no photovoltaic solar deployment, as determined by the Secretary;

(B) a geographical area that has low or no access to electricity, as determined by the Secretary;

(C) a geographical area with an average annual residential retail electricity price that exceeds the national average annual residential retail electricity price (as reported by the Energy Information Agency) by 50 percent or more; or

(D) trust land, as defined in section 3765 of title 38, United States Code.

(b) ESTABLISHMENT.—The Secretary shall establish a program to provide financial assistance to eligible entities to—

(1) carry out planning projects that are necessary to establish the feasibility, obtain required permits, identify beneficiaries, or secure subscribers to install a covered facility; or

(2) install a covered facility for beneficiaries in accordance with this section.

(c) APPLICATIONS.—

(1) IN GENERAL.—To be eligible to receive 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.

(2) INCLUSION FOR INSTALLATION ASSISTANCE.—

(A) REQUIREMENTS.—For an eligible entity to receive assistance for a project to install a covered facility, the Secretary shall require the eligible entity to include—

(i) information in the application that is sufficient to demonstrate that the eligible entity has obtained, or has the capacity to obtain, necessary permits, subscribers, access to an installation site, and any other items or agreements necessary to comply with an agreement under subsection (g)(1) and to complete the installation of the applicable covered facility;

(ii) a description of the mechanism through which financial benefits will be distributed to beneficiaries or subscribers; and

(iii) an estimate of the anticipated financial benefit for beneficiaries or subscribers.

(B) CONSIDERATION OF PLANNING PROJECTS.—The Secretary shall consider the successful completion of an eligible planning project pursuant to subsection (b)(1) by the eligible entity to be sufficient to demonstrate the ability of the eligible entity to meet the requirements of subparagraph (A)(i).

(d) SELECTION.—

(1) IN GENERAL.—In selecting eligible projects to receive assistance under the program, the Secretary shall—

(A) prioritize—

(i) eligible installation projects that will result in the most financial benefit for subscribers, as determined by the Secretary;

(ii) eligible installation projects that will result in development of covered facilities in underserved areas; and

(iii) eligible projects that include apprenticeship, job training, or community

participation as part of their application; and

(B) ensure that such assistance is provided in a manner that results in eligible projects being carried out on a geographically diverse basis within and among covered States.

(2) DETERMINATION OF FINANCIAL BENEFIT.—In determining the amount of financial benefit for low-income households of an eligible installation project, the Secretary shall ensure that all calculations for estimated household energy savings are based solely on electricity offsets from the applicable covered facility and use formulas established by the State or local government with jurisdiction over the applicable covered facility for verifiable household energy savings estimates that accrue to low-income households.

(e) ASSISTANCE.—

(1) FORM.—The Secretary may provide assistance under the program in the form of a grant (which may be in the form of a rebate) or a low-interest loan.

(2) MULTIPLE PROJECTS FOR SAME FACILITY.—

(A) IN GENERAL.—An eligible entity may apply for assistance under the program for an eligible planning project and an eligible installation project for the same covered facility.

(B) SEPARATE SELECTIONS.—Selection by the Secretary for assistance under the program of an eligible planning project does not require the Secretary to select for assistance under the program an eligible installation project for the same covered facility.

(f) USE OF ASSISTANCE.—

(1) ELIGIBLE PLANNING PROJECTS.—An eligible entity receiving assistance for an eligible planning project under the program may use such assistance to pay the costs of pre-installation activities associated with an applicable covered facility, including—

(A) feasibility studies;

(B) permitting;

(C) site assessment;

(D) on-site job training, or other community-based activities directly associated with the eligible planning project; or

(E) such other costs determined by the Secretary to be appropriate.

(2) ELIGIBLE INSTALLATION PROJECTS.—An eligible entity receiving assistance for an eligible installation project under the program may use such assistance to pay the costs of—

(A) installation of a covered facility, including costs associated with materials, permitting, labor, or site preparation;

(B) storage technology sited at a covered facility;

(C) interconnection service expenses;

(D) on-site job training, or other community-based activities directly associated with the eligible installation project;

(E) offsetting the cost of a subscription for a covered facility described in subparagraph (A) of subsection (a)(4) for subscribers that are members of a low income household; or

(F) such other costs determined by the Secretary to be appropriate.

(g) ADMINISTRATION.—

(1) AGREEMENTS.—

(A) IN GENERAL.—As a condition of receiving assistance under the program, an eligible entity shall enter into an agreement with the Secretary.

(B) REQUIREMENTS.—An agreement entered into under this paragraph—

(i) shall require the eligible entity to maintain such records and adopt such administrative practices as the Secretary may require to ensure compliance with the requirements of this section and the agreement;

(ii) with respect to an eligible installation project shall require that any solar generating facility installed using assistance provided pursuant to the agreement comply with local building and safety codes and standards; and

(iii) shall contain such other terms as the Secretary may require to ensure compliance with the requirements of this section.

(C) TERM.—An agreement under this paragraph shall be for a term that begins on the date on which the agreement is entered into and ends on the date that is 2 years after the date on which the eligible entity receives assistance pursuant to the agreement, which term may be extended once for a period of not more

than 1 year if the eligible entity demonstrates to the satisfaction of the Secretary that such an extension is necessary to complete the activities required by the agreement.

(2) USE OF FUNDS.—Of the funds made available to provide assistance to eligible installation projects under this section over the period of fiscal years 2021 through 2025, the Secretary shall use—

(A) not less than 50 percent to provide assistance for eligible installation projects with respect to which low-income households make up at least 50 percent of the subscribers to the project; and

(B) not more than 50 percent to provide assistance for eligible installation projects with respect to which low-income households make up at least 25 percent of the subscribers to the project.

(3) REGULATIONS.—Not later than 120 days after the date of enactment of this Act, the Secretary shall publish in the Federal Register regulations to carry out this section, which shall take effect on the date of publication.

(h) AUTHORIZATION OF APPROPRIATIONS.—

(1) IN GENERAL.—There is authorized to be appropriated to the Secretary to carry out this section $250,000,000 for each of fiscal years 2021 through 2025, to remain available until expended.

(2) AMOUNTS FOR PLANNING PROJECTS.—Of the amounts appropriated pursuant to this section over the period of fiscal years 2021 through 2025, the Secretary shall use not more than 15 percent of funds to provide assistance to eligible planning projects.

(i) RELATIONSHIP TO OTHER ASSISTANCE.—The Secretary shall, to the extent practicable, encourage eligible entities that receive assistance under this section to leverage such funds by seeking additional funding through federally or locally subsidized weatherization and energy efficiency programs.

SEC. 2402. ESTABLISHMENT OF COMMUNITY SOLAR PROGRAMS.

(a) IN GENERAL.—Section 111(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)) is amended by adding at the end the following:

''(21) COMMUNITY SOLAR PROGRAMS.—Each electric utility shall offer a community solar program that provides all ratepayers, including low-income ratepayers, equitable and demonstrable access to

such community solar program. For the purposes of this paragraph, the term 'community solar program' means a service provided to any electric consumer that the electric utility serves through which the value of electricity generated by a community solar facility may be used to offset charges billed to the electric consumer by the electric utility. A 'community solar facility' is—

''(A) a solar photovoltaic system that allocates electricity to multiple electric consumers of an electric utility;

''(B) connected to a local distribution of the electric utility;

''(C) located either on or off the property of the electric consumers; and

''(D) may be owned by an electric utility, an electric consumer, or a third party.''.

(b) COMPLIANCE.—

(1) TIME LIMITATIONS.—Section 112(b) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(b)) is amended by adding at the end the following:

''(8)(A) Not later than 1 year after the date of enactment of this paragraph, each State regulatory authority (with respect to each electric utility for

which the State has ratemaking authority) and each nonregulated electric utility shall commence consideration under section 111, or set a hearing date for consideration, with respect to the standard established by paragraph (21) of section 111(d).

''(B) Not later than 2 years after the date of enactment of this paragraph, each State regulatory authority (with respect to each electric utility for which the State has ratemaking authority), and each nonregulated electric utility shall complete the consideration and make the determination under section 111 with respect to the standard established by paragraph (21) of section 111(d).''.

(2) FAILURE TO COMPLY.—

(A) IN GENERAL.—Section 112(c) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(c)) is amended—

(i) by striking ''such paragraph (14)'' and all that follows through ''paragraphs (16)'' and inserting ''such paragraph (14). In the case of the standard established by paragraph (15) of section 111(d), the reference contained in this subsection to the date of enactment of this Act shall be deemed to be a reference to the date of en-

actment of that paragraph (15). In the case of the standards established by paragraphs (16)''; and

(ii) by adding at the end the following: ''In the case of the standard established by paragraph (21) of section 111(d), the reference contained in this subsection to the date of enactment of this Act shall be deemed to be a reference to the date of enactment of that paragraph (21).''.

(B) TECHNICAL CORRECTION.—

(i) IN GENERAL.—Section 1254(b) of the Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 971) is amended—

(I) by striking paragraph (2); and

(II) by redesignating paragraph (3) as paragraph (2).

(ii) TREATMENT.—The amendment made by paragraph (2) of section 1254(b) of the Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 971) (as in effect on the day before the date of enactment of this Act) is void, and section 112(d) of the Public Utility Regulatory Policies Act of

1978 (16 U.S.C. 2622(d)) shall be in effect as if those amendments had not been enacted.

(3) PRIOR STATE ACTIONS.—

(A) IN GENERAL.—Section 112 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622) is amended by adding at the end the following:

''(h) PRIOR STATE ACTIONS.—Subsections (b) and (c) shall not apply to the standard established by paragraph (21) of section 111(d) in the case of any electric utility in a State if, before the date of enactment of this subsection—

''(1) the State has implemented for the electric utility the standard (or a comparable standard);

''(2) the State regulatory authority for the State or the relevant nonregulated electric utility has conducted a proceeding to consider implementation of the standard (or a comparable standard) for the electric utility; or

''(3) the State legislature has voted on the implementation of the standard (or a comparable standard) for the electric utility.''.

(B) CROSS-REFERENCE.—Section 124 of the Public Utility Regulatory Policies Act of

1978 (16 U.S.C. 2634) is amended by adding at the end the following: ''In the case of the standard established by paragraph (21) of section 111(d), the reference contained in this subsection to the date of enactment of this Act shall be deemed to be a reference to the date of enactment of that paragraph (21).''.

Subtitle E—Research and Development

PART 1—SOLAR ENERGY RESEARCH AND DEVELOPMENT

SEC. 2501. DEFINITIONS.

In this part:

(1) The term ''eligible entity'' means any of the following entities:

(A) An institution of higher education.

(B) A National Laboratory.

(C) A Federal research agency.

(D) A State research agency.

(E) A nonprofit research organization.

(F) An industrial entity or a multi-institutional consortium thereof.

(2) The term ''institution of higher education''—

(A) has the meaning given such term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001); and

(B) includes a minority-serving institution.

(3) The term ''minority-serving institution'' has the meaning given the term ''eligible institution'' in section 371(a) of the Higher Education Act of 1965 (20 U.S.C. 1067q(a)).

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

(5) The term ''photovoltaic device'' includes photovoltaic cells and the electronic and electrical components of such devices.

(6) The term ''Secretary'' means the Secretary of Energy.

SEC. 2502. SOLAR ENERGY RESEARCH AND DEVELOPMENT.

(a) IN GENERAL.—The Secretary shall carry out a solar energy program to conduct research, development, demonstration, and commercial application of solar energy technologies. In carrying out such program, the Secretary shall, in accordance with subsection (b), award grants and enter into contracts and cooperative agreements under this section, and sections 2503, 2504, and 2505 for each of the following purposes:

(1) To improve the energy efficiency, siting, reliability, resilience, security, capacity, and environmental performance of solar energy generation.

(2) To optimize the design and adaptability of solar energy systems to the broadest practical range of geographic and atmospheric conditions.

(3) To reduce the cost of manufacturing, installation, operation, maintenance, and decommissioning of solar energy systems.

(4) To create and improve conversion of solar energy to useful forms.

(b) GRANTS, CONTRACTS, AND COOPERATIVE AGREEMENTS.—

(1) GRANTS.—In carrying out the program established under subsection (a), the Secretary shall award grants on a competitive, merit-reviewed basis to eligible entities for projects that the Secretary determines would best achieve the goals of the program.

(2) CONTRACTS AND COOPERATIVE AGREEMENTS.—In carrying out the program established under subsection (a), the Secretary may enter into contracts and cooperative agreements with eligible entities and Federal agencies for projects that the

Secretary determines would further the purposes of the program.

(3) APPLICATION.—An entity seeking a grant or a contract or agreement under this part shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

(4) SPECIAL CONSIDERATION.—With respect to applications under paragraph (3), the Secretary shall give special consideration to applications from minority-serving institutions or a multi-institutional consortium which includes a minority-serving institution.

(c) SOLAR ENERGY RESEARCH SUBJECT AREAS.—The program established under subsection (a) shall focus on the research, development, demonstration, and commercial application of each of the following subject areas:

(1) Photovoltaic devices and related electronic components, including converters, sensors, energy monitors, communication and control equipment, and protocols.

(2) Concentrated solar power, including solar thermal and concentrating solar photovoltaic technologies.

(3) Low cost, high-quality solar energy systems.

(4) Low cost, thin-film solar technologies, including the use of perovskite and cadmium telluride materials in solar cells.

(5) Solar heating and cooling systems, including distributed solar-powered air conditioning.

(6) Solar technology products that can be easily integrated into new buildings, existing buildings, agricultural and aquatic environments, and other infrastructure.

(7) Solar technology that is resilient to extreme weather events.

(8) Solar technology products integrated into transportation applications in coordination with vehicle technologies research and development activities supported by the Department of Energy.

(9) Storage technologies to address the transience and intermittency of solar energy resources, including batteries, supercapacitors, and thermal storage.

(10) Microgrids using solar technology.

(11) Solar technologies enabling safe grid operating conditions, such as fast-disconnect during an emergency.

(12) Distributed solar energy technologies, such as rooftop solar panels.

(13) Technologies and designs that enable a broad range of scales for solar power production.

(14) Advanced solar manufacturing technologies and best practices, including—

(A) materials and processes;

(B) development of industry standards;

(C) design and integration practices; and

(D) optimized packaging methods and new device designs.

(15) Advanced analytic and computing capabilities for better modeling and simulations of solar energy systems.

(16) Electrical grid integration, including—

(A) integration of solar technologies into smart grid, transmission, and distribution;

(B) coordination of solar with other distributed and large-scale energy resources;

(C) electrical power smoothing;

(D) microgrid integration;

(E) community solar;

(F) solar resource forecasting;

(G) regional and national electric system balancing and long distance transmission options, including direct current and super-

conducting transmission and long-term storage options;

(H) ways to address system operations over minutes, hours, days, weeks, and seasons with respect to the full range of project scales; and

(I) electric grid security, including cyber and physical security.

(17) Non-hardware and information-based advances in solar energy system siting, design, installation, operation, maintenance, and decommissioning.

(18) Solar energy technology as a part of strategies commonly referred to as ''behind-the-meter strategies'', including with respect to electricity generation, load, energy efficiency, controls, storage, and electric vehicles.

(19) Methods to reduce the total volume of water used in the manufacture, construction, operation, and maintenance of solar energy technologies.

(20) Siting of solar energy on previously disturbed lands, including landfills, former mines, and other areas requiring environmental management.

(21) Durable, low-cost solar-powered sensors, equipment, and machinery for off-grid use, with special consideration for agricultural applications, such

as solar powered smart agricultural monitoring and irrigation systems.

(22) Other subject areas determined by the Secretary.

(d) TECHNICAL ASSISTANCE AND WORKFORCE DEVELOPMENT.—In carrying out the program established under subsection (a), the Secretary shall also conduct, for purposes of supporting technical, non-hardware, and information-based advances in solar energy systems development and operations, including activities expanding access to solar energy for low-income and disadvantaged individuals and communities—

(1) technical assistance and analysis activities with eligible entities; and

(2) workforce development and training activities, including—

(A) activities that support the dissemination of standards and best practices for enabling solar power production; and

(B) through the use of proven techniques to expand the number of individuals from underrepresented groups pursuing and attaining skills relevant to solar energy.

(e) PROGRAM TARGETS.—The program established under subsection (a) shall address near-term (up to 2

years), mid-term (up to 7 years), and long-term (up to 15 years) challenges to the advancement of solar energy systems.

(f) SUSTAINABLE CHEMISTRY.—Each entity receiving a grant, contract, or cooperative agreement under this section shall endeavor, in carrying out activities under such grant, contract, or cooperative agreement, to incorporate, where appropriate, sustainable and green chemistry and engineering principles, practices, and methodologies.

(g) WILDLIFE IMPACT MITIGATION.—In carrying out the program established under subsection (a), the Secretary shall support wildlife impact mitigation technologies and strategies, including the use of distributed solar technologies, to avoid, minimize, and offset the potential negative impacts of solar energy systems on wildlife, including bird species, habitat, and local flora and fauna.

(h) STEWARDSHIP OF NATIONAL LABORATORY RESOURCES.—In awarding grants and entering into contracts and cooperative agreements under this part, the Secretary shall steward relevant capabilities and programs of the National Laboratories.

(i) CONFORMING REPEALS.—The following provisions of law are hereby repealed:

(1) The Solar Energy Research, Development, and Demonstration Act of 1974 (42 U.S.C. 5551 et seq.), except for section 10.

(2) The Solar Photovoltaic Energy Research, Development, and Demonstration Act of 1978 (42 U.S.C. 5581 et seq.).

(3) Paragraphs (2) and (3) of section 4(a) of the Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989 (42 U.S.C. 12003(a)).

(4) Subparagraph (A) of section 931(a)(2) of the Energy Policy Act of 2005 (42 U.S.C. 16231(a)(2)).

(5) Sections 606 and 607 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17174 and 17175).

(j) CONFORMING AMENDMENT.—The table of contents in section 1 of the Energy Independence and Security Act of 2007 is amended by striking the items relating to sections 606 and 607.

SEC. 2503. SOLAR ENERGY DEMONSTRATION PROJECTS.

(a) IN GENERAL.—In carrying out the program established under section 2502(a), the Secretary shall award grants on a competitive, merit-reviewed basis to eligible

entities for demonstration projects to advance the development of solar energy technologies and systems production.

(b) PRIORITY.—In awarding grants under subsection (a), the Secretary shall give priority to projects that—

(1) are located in geographically diverse regions of the United States;

(2) can be replicated in a variety of regions and climates;

(3) demonstrate technologies that address intermittency, variability, storage challenges, behind-the-meter operations, and independent operational capability;

(4) coordinate solar technologies with other distributed and large-scale energy resources;

(5) facilitate identification of optimum approaches among competing solar energy technologies;

(6) include business commercialization plans that have the potential for production of solar energy equipment at high volumes;

(7) support the development of advanced manufacturing technologies that have the potential to improve United States competitiveness in the international solar energy manufacturing sector;

(8) provide the greatest potential to reduce energy costs, as well as promote accessibility and community implementation of demonstrated technologies, for consumers;

(9) increase disclosure and transparency of information to all market participants to help in making optimal decisions;

(10) promote overall electric infrastructure reliability, security, and resilience should grid functions be disrupted or damaged;

(11) promote solar energy in low-income communities and those disproportionately burdened by environmental pollution; and

(12) satisfy any other criteria that the Secretary determines appropriate.

(c) USE OF FUNDS.—Grants under this section may be used, to the extent that funding is not otherwise available through other Federal programs or power purchase agreements, for—

(1) any necessary site engineering study;

(2) an economic assessment of site-specific conditions;

(3) appropriate feasibility studies to determine whether the demonstration can be replicated;

(4) installation of equipment, service, and support;

(5) operation for at least the minimum amount of time required to fully assess the project's results and objectives, as determined by a peer-reviewed process; and

(6) validation of technical, economic, and environmental assumptions and documentation of lessons learned.

(d) SOLICITATION.—Not later than 90 days after the date of enactment of this Act and biennially thereafter, the Secretary shall conduct a national solicitation for applications for grants under this section.

SEC. 2504. NEXT GENERATION SOLAR ENERGY MANUFACTURING INITIATIVE.

(a) IN GENERAL.—In carrying out the program established under section 2502(a), the Secretary shall conduct research, development, demonstration, and commercial application projects, in accordance with section 2502(b), to advance new solar energy manufacturing technologies and techniques, including those that manufacture solar cells, hardware, and enabling devices.

(b) STRATEGIC VISION REPORT.—

(1) IN GENERAL.—Not later than September 1, 2021, the Secretary shall submit to the Committee

on Science, Space, and Technology of the House of Representatives, the Committee on Energy and Natural Resources of the Senate, and any other committees of Congress deemed appropriate by the Secretary a report on the results of a study that examines the viable market opportunities available for solar energy technology manufacturing in the United States, including solar cells, hardware, and enabling technologies.

(2) REPORT REQUIREMENTS.—The report under paragraph (1) shall include—

(A) a description of—

(i) the ability to competitively manufacture solar technology in the United States, including the manufacture of—

(I) new and advanced materials, such as cells made with new, cost-effective, high efficiency materials;

(II) solar module equipment and enabling technologies, including smart inverters, sensors, and tracking equipment;

(III) innovative solar module designs and applications, including those that can directly integrate with new

and existing buildings and other infrastructure; and

(IV) other research areas as determined by the Secretary; and

(ii) opportunities and barriers within the United States and international solar energy technology supply chains;

(B) policy recommendations for enhancing solar energy technology manufacturing in the United States; and

(C) an aggressive 10-year target and plan, beginning in 2022, to enhance the competitiveness of solar energy technology manufacturing in the United States.

(c) PROGRAM IMPLEMENTATION.—In carrying out the research, development, demonstration, and commercial application activities under this section, to the extent practicable, the Secretary shall follow the recommendations included in the report under subsection (b) and award grants and enter into contracts and cooperative agreements for solar energy manufacturing projects that—

(1) reduce capital expenditures or provide lower-cost manufacturing options;

(2) eliminate manufacturing process steps;

(3) reduce energy, water, and material inputs;

(4) establish alternative supply chains for materials and components; and

(5) take advantage of rapid prototyping, small batch manufacturing, and roll-to-roll processing.

(d) PROGRAM EVALUATION.—Beginning not later than 3 years after the completion of the report under subsection (b), and every 4 years thereafter, the Secretary shall provide, and make available to the public and the relevant authorizing and appropriations committees of Congress, an independent review of the program authorized under this section to evaluate its progress toward meeting the policy recommendations and targets determined in the report.

SEC. 2505. PHOTOVOLTAIC DEVICE RECYCLING RESEARCH AND DEVELOPMENT.

(a) IN GENERAL.—In carrying out the program established under section 2502(a), the Secretary shall conduct research, development, demonstration, and commercial application projects, in accordance with section 2502(b), to advance innovative and practical approaches to increase reuse and recycling of photovoltaic devices.

(b) PURPOSE.—The Secretary shall award grants and enter into contracts and cooperative agreements under subsection (a) for projects that address—

(1) technology to increase the efficiency of photovoltaic device recycling and maximize the recovery of valuable raw materials for use in new products while minimizing the life-cycle environmental impacts such as greenhouse gas emissions and water usage;

(2) expanded uses for materials from recycled photovoltaic devices;

(3) development and demonstration of environmentally responsible alternatives to the use of hazardous materials in photovoltaic devices and the production of such devices;

(4) development of methods to separate and remove hazardous materials from photovoltaic devices and to recycle or dispose of those materials in a safe and low-cost manner;

(5) product design and construction to facilitate disassembly and recycling of photovoltaic devices;

(6) tools and methods to aid in assessing the environmental impacts of the production of photovoltaic devices and photovoltaic device recycling and disposal;

(7) product design and construction and other tools and techniques to extend the life cycle of pho-

tovoltaic devices, including methods to promote their safe reuse; and

(8) strategies to increase consumer acceptance and practice of recycling of photovoltaic devices.

(c) APPLICATIONS.—An eligible entity seeking a grant, contract, or cooperative agreement under this section shall submit to the Secretary an application that includes a description of—

(1) the project that will be undertaken and the contributions of each participating entity; and

(2) the applicability of the project to increasing reuse and recycling of photovoltaic devices with the least environmental impacts as measured by life-cycle analyses, and the potential for incorporating the research results into industry practice.

(d) DISSEMINATION OF RESULTS.—The Secretary shall publish the results of projects supported under this section through—

(1) development of best practices or training materials for use in the photovoltaics manufacturing, design, installation, refurbishing, disposal, or recycling industries;

(2) dissemination at industry conferences;

(3) coordination with information dissemination programs relating to recycling of electronic devices in general;

(4) demonstration projects; and

(5) educational materials for the public produced in conjunction with State, Tribal, and local governments or nonprofit organizations on the problems and solutions related to reuse and recycling of photovoltaic devices.

(e) PHOTOVOLTAIC MATERIALS PHYSICAL PROPERTY DATABASE.—

(1) IN GENERAL.—Not later than September 1, 2022, the Secretary shall establish a comprehensive physical property database of materials for use in photovoltaic devices. Such database shall include—

(A) identification of materials used in photovoltaic devices;

(B) a list of commercially available amounts of these materials and their country of origin;

(C) amounts of these materials projected to be available through mining or recycling of photovoltaic and other electronic devices; and

(D) a list of other significant uses for each of these materials.

(2) PRIORITIES.—Not later than September 1, 2021, the Secretary, working with private industry, shall develop a plan to establish priorities and requirements for the database under this subsection, including the protection of proprietary information, trade secrets, and other confidential business information.

(3) COORDINATION.—The Secretary shall coordinate with the Director of the National Institute of Standards and Technology, the Administrator of the Environmental Protection Agency, and the Administrator of the Department of Interior to facilitate the incorporation of the database under this subsection with any existing database for materials involved in electronic manufacturing and recycling.

SEC. 2506. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary to carry out this part—

(1) $441,000,000 for fiscal year 2021;

(2) $463,050,000 for fiscal year 2022;

(3) $486,202,500 for fiscal year 2023;

(4) $510,512,625 for fiscal year 2024; and

(5) $536,038,257 for fiscal year 2025.

PART 2—WIND ENERGY RESEARCH AND DEVELOPMENT

SEC. 2521. DEFINITIONS.

In this section:

(1) The term ''eligible entity'' means any of the following entities:

(A) An institution of higher education.

(B) A National Laboratory.

(C) A Federal research agency.

(D) A State research agency.

(E) A nonprofit research organization.

(F) An industrial entity or a multi-institutional consortium thereof.

(2) The term ''energy critical material'' means any of a class of non-fuel materials that have a high risk of a supply disruption and are critical to one or more existing or new, energy-related technologies such that a substantial supply disruption of such material would significantly inhibit large-scale deployment of technologies that produce, transmit, store, or conserve energy.

(3) The term ''institution of higher education'' has the meaning given such term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

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

(5) The term ''supersized turbine'' means a 12 megawatt or greater wind turbine, typically with a tower height greater than 140 meters and blades greater than 75 meters.

SEC. 2522. WIND ENERGY RESEARCH AND DEVELOPMENT.

(a) IN GENERAL.—The Secretary of Energy (in this part, referred to as the ''Secretary'') shall carry out a program to conduct research, development, demonstration, and commercial application of wind energy technologies. In carrying out such program and in accordance with subsection (b), the Secretary shall award grants and enter into contracts and cooperative agreements under this section and sections 2523, 2524, and 2525 for each of the following purposes:

(1) To improve the energy efficiency, reliability, resilience, security, and capacity of wind energy generation.

(2) To optimize the design and control of wind energy systems for the broadest practical range of geographic and atmospheric conditions.

(3) To reduce the cost and risk of siting, permitting, construction, operation, maintenance, and

decommissioning of wind energy systems, including strategies and technologies to reduce environmental and community impacts, including research and development that reduces impacts on existing ocean uses and increases coordination between offshore wind and existing users, including the commercial fishing industry, improve grid integration, and reduce regulatory barriers.

(4) To improve materials, engineering, and manufacturing processes for turbines, including supersized turbines.

(5) To optimize wind plant performance and integration within hybrid energy systems to enhance cost efficiency and electric grid stability and resilience.

(b) GRANTS, CONTRACTS, AND COOPERATIVE AGREEMENTS.—

(1) GRANTS.—In carrying out the program, the Secretary shall award grants on a competitive, merit-reviewed basis to eligible entities for projects that the Secretary determines would best achieve the goals of the program.

(2) CONTRACTS AND COOPERATIVE AGREEMENTS.—In carrying out the program, the Secretary may enter into contracts and cooperative agreements

with eligible entities and Federal agencies for projects that the Secretary determines would further the purposes of the program.

(3) APPLICATION.—An entity seeking funding or a contract or agreement under this subsection shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

(c) WIND ENERGY RESEARCH SUBJECT AREAS.—The program established under subsection (a) shall focus on the research, development, demonstration, and commercial application of each of the following subject areas:

(1) Wind power plant siting, performance, and operations including—

(A) wind flows and turbine-to-turbine interactions;

(B) energy conversion potential;

(C) turbine and wind plant control paradigms;

(D) turbine and wind plant security;

(E) turbine components;

(F) integrated hybrid plant systems;

(G) wind energy siting and its effects on wildlife and habitat; and

(H) siting of wind energy on previously disturbed lands, including landfills, former mines, and other areas requiring environmental management.

(2) New materials and designs related to blades, rotors, towers and drivetrains including—

(A) higher tip speed rotor designs;

(B) low noise rotor designs;

(C) advanced drivetrain and generator concepts;

(D) modular construction and onsite or near-site manufacturing and assembly techniques;

(E) sustainable and recyclable materials and manufacturing systems;

(F) supersized turbine design and installation approaches;

(G) lightweight materials; and

(H) materials and designs that reduce the need for and use of energy critical materials.

(3) Offshore wind-specific projects including—

(A) fixed and floating substructure concepts, including technologies and strategies to minimize potential acoustic disturbances to marine species;

(B) projects to assess and mitigate the impacts of hurricane wind flow, freshwater ice, and other United States-specific conditions;

(C) innovative operations and maintenance strategies;

(D) analysis of offshore meteorological, geological, biological, and oceanographic data collection;

(E) offshore infrastructure monitoring; and

(F) analysis of corrosion and fatigue for the purpose of extending the design life of offshore wind turbine substructures.

(4) Recycling and reuse of wind energy components, with special consideration for the recovery and reuse of energy critical materials, in coordination with the program under title X of the Clean Economy Jobs and Innovation Act.

(5) Wind power forecasting and atmospheric measurement systems, including for turbines and plant systems of varying height.

(6) Distributed wind-specific projects, including—

(A) cost-effective turbine designs, components, and manufacturing; and

(B) microgrid applications.

(7) Advanced transportation mechanisms for wind turbine components.

(8) Transformational technologies for harnessing wind energy, including airborne wind energy concepts.

(9) Methods to extend the operational lifetime of onshore and offshore wind turbines and systems.

(10) Storage technologies to address the transience and intermittency of wind energy resources.

(11) Modeling and simulation tools to more efficiently design, site, permit, manufacture, construct, operate, maintain, and decommission wind energy systems.

(12) Other research areas as determined by the Secretary.

(d) REPORT.—

(1) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, 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 report on the potential for, and technical viability of, airborne wind energy sys-

tems to provide a significant source of energy in the United States.

(2) CONTENTS.—The report under paragraph (1) shall include a summary of research, development, demonstration, and commercial application needs, including an estimate of Federal funding requirements, to further examine and validate the technical and economic viability of airborne wind energy concepts over the 10-year period beginning on the date of the enactment of this Act.

(e) COORDINATION.—To the maximum extent practicable, the Secretary shall coordinate activities under the program established under subsection (a) with other relevant programs and capabilities of the Department of Energy and other Federal research programs.

(f) CONFORMING REPEALS.—

(1) Section 931(a)(2) of the Energy Policy Act of 2005 (42 U.S.C. 16231(a)(2)) is amended by striking subparagraph (B) and redesignating subparagraphs (C) through (E) as subparagraphs (A) through (C).

(2) Section 4(a) of the Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989 (42 U.S.C. 12003(a)) is amended by striking paragraph (1).

SEC. 2523. WIND ENERGY DEMONSTRATION AND VALIDATION PROJECTS.

(a) IN GENERAL.—In carrying out the program established under section 2522(a), the Secretary shall award grants on a competitive, merit-reviewed basis to eligible entities to support activities that demonstrate and validate new wind energy technologies with the potential to be cost-competitive for land-based, offshore, and distributed applications.

(b) APPLICATION.—An eligible entity seeking a grant under this section shall submit an application in such form and manner as the Secretary may prescribe and that contains—

(1) a certification that any demonstration or validation project carried out using grant funds are—

(A) conducted in collaboration with industry and, as appropriate, with institutions of higher education and other Federal research programs; and

(B) of sufficient size and geographic diversity to measure wind energy system performance under the full productive range of wind conditions in the United States; and

(2) such other information as the Secretary may require.

(c) FACILITY FOR HYBRID ENERGY SYSTEM RESEARCH AND DEMONSTRATION PROJECTS.—In carrying out the program established under subsection (a), the Secretary shall support a facility to conduct research, development, demonstration, and commercial application projects for wind turbines and plants in hybrid energy systems that incorporate diverse generation sources, loads, and storage technologies.

(d) OFFSHORE RESEARCH FACILITY.—In carrying out the program established under subsection (a), the Secretary shall establish a facility to conduct research, development, demonstration, and commercial application projects for ocean and atmospheric resource characterization relevant to offshore wind energy development in coordination with the ocean and atmospheric science communities. The facility shall be an offshore area used to evaluate, test, and advance atmospheric, oceanic, biologic, and geologic monitoring technologies that improve offshore wind energy development, including the generation of benchmark data sets for testing offshore wind energy technologies and informing how such technologies can be financed, insured, and regulated.

(e) OFFSHORE SUPPORT STRUCTURE TESTING FACILITY.—In carrying out the program established under subsection (a), the Secretary shall create a facility to con-

duct research, development, demonstration, and commercial application projects for large-scale and full-scale offshore wind energy support structure components and systems.

SEC. 2524. WIND ENERGY INCUBATOR FUNDING.

In carrying out the program established under section 2522(a), the Secretary shall support, in accordance with section 2522(b), incubators advancing innovative technologies that are not represented in a significant way in—

(1) the portfolio of wind energy research activities carried out by the Department of Energy as of the date of the enactment of this Act; or

(2) technology roadmaps used by the Department of Energy as of such date of enactment.

SEC. 2525. MITIGATING REGULATORY AND MARKET BARRIERS.

(a) IN GENERAL.—In carrying out the program established under section 2522(a), the Secretary shall research, develop, test, and evaluate, in accordance with section 2522(b), ways to reduce regulatory and market barriers to the widespread adoption of wind power, including—

(1) grid transmission and integration challenges; and

(2) siting and permitting issues associated with the potential impacts of wind power systems on wildlife, radar systems (including for air traffic control, air defense, and weather detection), local communities, military operations, and airspace.

(b) WILDLIFE IMPACT MITIGATION.—In carrying out the activities described in subsection (a), the Secretary shall support the research, development, demonstration, and commercial application of wildlife impact mitigation technologies or strategies to avoid, minimize, and offset the potential impacts of wind energy facilities on—

(1) bald and golden eagles;

(2) bat species;

(3) marine wildlife; and

(4) other sensitive species and habitats.

(c) EDUCATION AND OUTREACH.—In carrying out the activities described in subsection (a), the Secretary shall support education and outreach activities, with a focus on low-income and disadvantaged communities, to disseminate information and promote public understanding of wind technologies and the wind energy workforce, including through the Collegiate Wind Competition.

(d) TECHNICAL ASSISTANCE AND WORKFORCE DEVELOPMENT.—In carrying out the program established under section 2522(a), the Secretary shall also conduct,

for purposes of supporting technical, non-hardware, and information based advances in wind energy systems' development and operation, including activities expanding access to wind energy for low-income individuals and disadvantaged individuals and communities—

(1) technical assistance and analysis activities with eligible entities; and

(2) workforce development and training activities, including—

(A) activities that support the dissemination of standards and best practices for enabling wind power production; and

(B) through the use of proven techniques to expand the number of individuals from underrepresented groups pursuing and attaining skills relevant to wind energy.

SEC. 2526. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary to carry out this part—

(1) $163,800,000 for fiscal year 2021;

(2) $171,990,000 for fiscal year 2022;

(3) $180,589,500 for fiscal year 2023;

(4) $189,618,975 for fiscal year 2024; and

(5) $199,099,923 for fiscal year 2025.

PART 3—ADVANCED GEOTHERMAL RESEARCH AND DEVELOPMENT

SEC. 2541. DEFINITIONS.

Section 612 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17191) is amended—

(1) by amending paragraph (1) to read as follows:

''(1) ENGINEERED.—When referring to enhanced geothermal systems, the term 'engineered' means designed to access subsurface heat, including stimulation and nonstimulation technologies to address one or more of the following issues:

''(A) Lack of effective permeability, porosity or open fracture connectivity within the heat reservoir.

''(B) Insufficient contained geofluid in the heat reservoir.

''(C) A low average geothermal gradient which necessitates deeper drilling, or the use of alternative heat sources or heat generation processes.'';

(2) by redesignating paragraphs (2) through (7) as paragraphs (3) through (8), respectively;

(3) by adding after paragraph (1) the following:

''(2) ELIGIBLE ENTITY.—The term 'eligible entity' means any of the following entities:

''(A) An institution of higher education.

''(B) A National laboratory.

''(C) A Federal research agency.

''(D) A State research agency.

''(E) A nonprofit research organization.

''(F) An industrial entity.

''(G) A consortium of 2 or more entities described in subparagraphs (A) through (F).''; and

(4) by adding at the end the following:

''(9) INSTITUTION OF HIGHER EDUCATION.—The term 'institution of higher education' has the meaning given such term in section 101 of the Higher Education Act of 1965 (20 U.S.C 1001).''.

SEC. 2542. HYDROTHERMAL RESEARCH AND DEVELOPMENT.

Section 613 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17192) is amended to read as follows:

''SEC. 613. HYDROTHERMAL RESEARCH AND DEVELOPMENT.

''(a) IN GENERAL.—The Secretary shall carry out a program of research, development, demonstration, and commercial application for geothermal energy production from hydrothermal systems.

''(b) PROGRAMS.—The program authorized in subsection (a) shall include the following:

''(1) ADVANCED HYDROTHERMAL RESOURCE TOOLS.—The research and development of advanced geologic tools to assist in locating hydrothermal resources, and to increase the reliability of site characterization, including the development of new imaging and sensing technologies and techniques to assist in prioritization of targets for characterization;

''(2) EXPLORATORY DRILLING FOR GEOTHERMAL RESOURCES.—The demonstration of advanced technologies and techniques of siting and exploratory drilling for undiscovered resources in a variety of geologic settings, carried out in collaboration with industry partners that will assist in the acquisition of high quality data sets relevant for hydrothermal subsurface characterization activities.''.

SEC. 2543. GENERAL GEOTHERMAL SYSTEMS RESEARCH AND DEVELOPMENT.

Section 614 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17193) is amended to read as follows:

"SEC. 614. GENERAL GEOTHERMAL SYSTEMS RESEARCH AND DEVELOPMENT.

"(a) SUBSURFACE COMPONENTS AND SYSTEMS.—The Secretary shall support a program of research, development, demonstration, and commercial application of components and systems capable of withstanding geothermal environments and necessary to develop, produce, and monitor geothermal reservoirs and produce geothermal energy.

"(b) ENVIRONMENTAL IMPACTS.—The Secretary shall—

"(1) support a program of research, development, demonstration, and commercial application of technologies and practices designed to mitigate or preclude potential adverse environmental impacts of geothermal energy development, production or use; and

"(2) support a research program to identify potential environmental impacts, including induced seismicity, and environmental benefits of geothermal energy development, production, and use, and ensure that the program described in paragraph (1) addresses such impacts, including water use and effects on groundwater and local hydrology;

"(3) support a program of research to compare the potential environmental impacts and environ-

mental benefits identified as part of the development, production, and use of geothermal energy with the potential emission reductions of greenhouse gases gained by geothermal energy development, production, and use; and

''(4) in carrying out this section, the Secretary shall, to the maximum extent practicable, consult with relevant federal agencies, including the Environmental Protection Agency.

''(c) RESERVOIR THERMAL ENERGY STORAGE.—The Secretary shall support a program of research, development, and demonstration of reservoir thermal energy storage, emphasizing cost-effective improvements through deep direct use engineering, design, and systems research.

''(d) OIL AND GAS TECHNOLOGY TRANSFER INITIATIVE.—

''(1) IN GENERAL.—The Secretary shall support an initiative among the Office of Fossil Energy, the Office of Energy Efficiency and Renewable Energy, and the private sector to research, develop, and demonstrate relevant advanced technologies and operation techniques used in the oil and gas sector for use in geothermal energy development.

''(2) PRIORITIES.—In carrying out paragraph (1), the Secretary shall prioritize technologies with

the greatest potential to significantly increase the use and lower the cost of geothermal energy in the United States, including the cost and speed of geothermal drilling surface technologies, and well construction.

''(e) COPRODUCTION OF GEOTHERMAL ENERGY AND MINERALS PRODUCTION RESEARCH AND DEVELOPMENT INITIATIVE.—

''(1) IN GENERAL.—The Secretary shall carry out a research and development initiative under which the Secretary shall award grants to demonstrate the coproduction of critical minerals from geothermal resources.

''(2) REQUIREMENTS.—An award made under paragraph (1) shall—

''(A) improve the cost effectiveness of removing minerals from geothermal brines as part of the coproduction process;

''(B) increase recovery rates of the targeted mineral commodity;

''(C) decrease water use and other environmental impacts, as determined by the Secretary; and

''(D) demonstrate a path to commercial viability.

''(f) FLEXIBLE OPERATIONS.—The Secretary shall support a research initiative on flexible operation of geothermal power plants.

''(g) HYBRID ENERGY SYSTEMS.—The Secretary shall identify opportunities for joint research, development, and demonstration programs between geothermal systems and other energy generation or storage systems.''.

SEC. 2544. ENHANCED GEOTHERMAL SYSTEMS RESEARCH AND DEVELOPMENT.

Section 615 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17194) is amended to read as follows:

''SEC. 615. ENHANCED GEOTHERMAL SYSTEMS RESEARCH AND DEVELOPMENT.

''(a) IN GENERAL.—The Secretary shall support a program of research, development, demonstration, and commercial application for enhanced geothermal systems, including the programs described in subsection (b).

''(b) ENHANCED GEOTHERMAL SYSTEMS TECHNOLOGIES.—In collaboration with industry partners, institutions of higher education, and the national laboratories, the Secretary shall support a program of research, development, demonstration, and commercial application of the technologies to achieve higher efficiency and lower cost enhanced geothermal systems, including—

''(1) reservoir stimulation;

''(2) drilled, non-stimulated (e.g. closed-loop) reservoir technologies;

''(3) reservoir characterization, monitoring, and modeling and understanding of the surface area and volume of fractures;

''(4) stress and fracture mapping including real time monitoring and modeling;

''(5) tracer development;

''(6) three and four-dimensional seismic imaging and tomography;

''(7) well placement and orientation;

''(8) long-term reservoir management;

''(9) drilling technologies, methods, and tools;

''(10) improved exploration tools;

''(11) zonal isolation; and

''(12) understanding induced seismicity risks from reservoir engineering and stimulation.

''(c) FRONTIER OBSERVATORY FOR RESEARCH IN GEOTHERMAL ENERGY.—The Secretary shall support the establishment and construction of up to 3 field research sites, which shall each be known as a 'Frontier Observatory for Research in Geothermal Energy' or 'FORGE' site to develop, test, and enhance techniques and tools for enhanced geothermal energy.

''(1) DUTIES.—The Secretary shall—

''(A) award grants in support of research and development projects focused on advanced monitoring technologies, new technologies and approaches for implementing multi-zone stimulations, nonstimulation techniques, and dynamic reservoir modeling that incorporates all available high-fidelity characterization data; and

''(B) seek opportunities to coordinate efforts and share information with domestic and international partners engaged in research and development of geothermal systems and related technology, including coordination between FORGE sites.

''(2) SITE SELECTION.—Of the FORGE sites referred to in paragraph (1), the Secretary shall—

''(A) consider applications through a competitive, merit-reviewed process, from National Laboratories, multi-institutional collaborations, institutes of higher education and other appropriate entities best suited to provide national leadership on geothermal related issues and perform the duties enumerated under this subsection; and

"(B) prioritize existing field sites and facilities with capabilities relevant to the duties enumerated under this subsection.

"(3) EXISTING FORGE SITES.—A FORGE site already in existence on the date of enactment of this Act may continue to receive support.

"(4) FUNDING.—Out of funds authorized to be appropriated under section 623, there shall be made available to the Secretary to carry out the FORGE activities under this paragraph—

"(A) $45,000,000 for fiscal year 2021;

"(B) $55,000,000 for fiscal year 2022;

"(C) $65,000,000 for fiscal year 2023;

"(D) $70,000,000 for fiscal year 2024; and

"(E) $70,000,000 for fiscal year 2025.

In carrying out this section, the Secretary shall consider the balance between funds dedicated to construction and operations and research activities to reflect the state of site development.

"(d) ENHANCED GEOTHERMAL SYSTEMS DEMONSTRATIONS.—

"(1) IN GENERAL.—Beginning on the date of enactment of this section, the Secretary, in collaboration with industry partners, institutions of higher

education, and the national laboratories, shall support an initiative for demonstration of enhanced geothermal systems for power production or direct use.

''(2) PROJECTS.—

''(A) IN GENERAL.—Under the initiative described in paragraph (1), demonstration projects shall be carried out in locations that are commercially viable for enhanced geothermal systems development, while also considering environmental impacts to the maximum extent practicable, as determined by the Secretary.

''(B) REQUIREMENTS.—Demonstration projects under subparagraph (A) shall—

''(i) collectively demonstrate—

''(I) different geologic settings, such as hot sedimentary aquifers, layered geologic systems, supercritical systems, and basement rock systems; and

''(II) a variety of development techniques, including open hole and cased hole completions, differing well orientations, and stimulation and non-stimulation mechanisms; and

''(ii) to the extent practicable, use existing sites where subsurface characterization or geothermal energy integration analysis has been conducted.

''(C) EASTERN DEMONSTRATION.—Not fewer than 1 of the demonstration projects carried out under subparagraph (A) shall be located an area east of the Mississippi that is suitable for enhanced geothermal demonstration for power, heat, or a combination of power and heat.''.

SEC. 2545. GEOTHERMAL HEAT PUMPS AND DIRECT USE.

(a) IN GENERAL.—Title VI of the Energy Independence and Security Act of 2007 is amended by inserting after section 616 (42 U.S.C. 17195) the following:

''SEC. 616A. GEOTHERMAL HEAT PUMPS AND DIRECT USE RESEARCH AND DEVELOPMENT.

''(a) PURPOSES.—The purposes of this section are—

''(1) to improve the understanding of related earth sciences, components, processes, and systems used for geothermal heat pumps and the direct use of geothermal energy; and

''(2) to increase the energy efficiency, lower the cost, increase the use, and improve and demonstrate

the effectiveness of geothermal heat pumps and the direct use of geothermal energy.

''(b) DEFINITIONS.—In this section:

''(1) DIRECT USE OF GEOTHERMAL ENERGY.—The term 'direct use of geothermal energy' means geothermal systems that use water directly or through a heat exchanger to provide—

''(A) heating and cooling to buildings, commercial districts, residential communities, and large municipal, or industrial projects; or

''(B) heat required for industrial processes, agriculture, aquaculture, and other facilities.

''(2) ECONOMICALLY DISTRESSED AREA.—The term 'economically distressed area' means an area described in section 301(a) of the Public Works and Economic Development Act of 1965 (42 U.S.C. 3161(a)).

''(3) GEOTHERMAL HEAT PUMP.—The term 'geothermal heat pump' means a system that provides heating and cooling by exchanging heat from shallow geology, groundwater, or surface water using—

''(A) a closed loop system, which transfers heat by way of buried or immersed pipes that contain a mix of water and working fluid; or

''(B) an open loop system, which circulates ground or surface water directly into the building and returns the water to the same aquifer or surface water source.

''(c) PROGRAM.—

''(1) IN GENERAL.—The Secretary shall support within the Geothermal Technologies Office a program of research, development, and demonstration for geothermal heat pumps and the direct use of geothermal energy.

''(2) AREAS.—The program under paragraph (1) may include research, development, demonstration, and commercial application of—

''(A) geothermal ground loop efficiency improvements, cost reductions, and improved installation and operations methods;

''(B) the use of geothermal energy for building-scale energy storage;

''(C) the use of geothermal energy as a grid management resource or seasonal energy storage;

''(D) geothermal heat pump efficiency improvements;

''(E) the use of alternative fluids as a heat exchange medium, such as hot water found in

mines and mine shafts, graywater, or other fluids that may improve the economics of geothermal heat pumps;

"(F) heating of districts, neighborhoods, communities, large commercial or public buildings, and industrial and manufacturing facilities;

"(G) the use of low temperature groundwater for direct use; and

"(H) system integration of direct use with geothermal electricity production.

"(3) ENVIRONMENTAL IMPACTS.—In carrying out the program, the Secretary shall identify and mitigate potential environmental impacts in accordance with section 614(c).

"(d) GRANTS.—

"(1) IN GENERAL.—The Secretary shall carry out the program established in subsection (c) by making grants available to State, local, and Tribal governments, institutions of higher education, nonprofit entities, National Laboratories, utilities, and for-profit companies.

"(2) PRIORITY.—In making grants under this subsection, the Secretary may give priority to proposals that apply to large buildings, commercial dis-

tricts, and residential communities that are located in economically distressed areas and areas that the Secretary determines to have high economic potential for geothermal district heating based on the report, 'Geovision: Harnessing the Heat Beneath our Feet' published by the Department in 2019, or a successor report.''.

(b) CONFORMING AMENDMENT.—Section 1(b) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17001 note) is amended in the table of contents by inserting after the item relating to section 616 the following:

''616A. Geothermal heat pumps and direct use research and development.''.

SEC. 2546. COST SHARING AND PROPOSAL EVALUATION.

Section 617(b) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17196) is amended by striking paragraph (2) and redesignating paragraphs (3) and (4) as paragraphs (2) and (3), respectively.

SEC. 2547. ADVANCED GEOTHERMAL COMPUTING AND DATA SCIENCE RESEARCH AND DEVELOPMENT.

(a) IN GENERAL.—Section 618 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17197) is amended to read as follows:

"SEC. 618. ADVANCED GEOTHERMAL COMPUTING AND DATA SCIENCE RESEARCH AND DEVELOPMENT.

''(a) IN GENERAL.—The Secretary shall carry out a program of research and development of advanced computing and data science tools for geothermal energy.

''(b) PROGRAMS.—The program authorized in subsection (a) shall include the following:

''(1) ADVANCED COMPUTING FOR GEOTHERMAL SYSTEMS TECHNOLOGIES.—Research, development, and demonstration of technologies to develop advanced data, machine learning, artificial intelligence, and related computing tools to assist in locating geothermal resources, to increase the reliability of site characterization, to increase the rate and efficiency of drilling, to improve induced seismicity mitigation, and to support enhanced geothermal systems technologies.

''(2) GEOTHERMAL SYSTEMS RESERVOIR MODELING.—Research, development, and demonstration of models of geothermal reservoir performance and enhanced geothermal systems reservoir stimulation technologies and techniques, with an emphasis on accurately modeling fluid and heat flow, permeability evolution, geomechanics, geochemistry, seismicity,

and operational performance over time, including collaboration with industry and field validation.

''(c) COORDINATION.—In carrying out these programs, the Secretary shall ensure coordination and consultation with the Department of Energy's Office of Science. The Secretary shall ensure, to the maximum extent practicable, coordination of these activities with the Department of Energy National Laboratories, institutes of higher education, and the private sector.''.

(b) CONFORMING AMENDMENT.—Section 1(b) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17001 note) is amended in the table of contents by amending the item related to section 618 to read as follows:

''Sec. 618. Advanced geothermal computing and data science research and development.''.

SEC. 2548. GEOTHERMAL WORKFORCE DEVELOPMENT.

(a) IN GENERAL.—Section 619 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17198) is amended to read as follows:

''SEC. 619. GEOTHERMAL WORKFORCE DEVELOPMENT.

''The Secretary shall support the development of a geothermal energy workforce through a program that—

''(1) facilitates collaboration between university students and researchers at the national laboratories; and

''(2) prioritizes science in areas relevant to the mission of the Department through the application of geothermal energy tools and technologies.''.

(b) CONFORMING AMENDMENT.—Section 1(b) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17001 note) is amended in the table of contents by amending the item related to section 619 to read as follows:

''Sec. 619. Geothermal workforce development.''.

SEC. 2549. ORGANIZATION AND ADMINISTRATION OF PROGRAMS.

Section 621 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17200) is amended to read as follows:

''SEC. 621. ORGANIZATION AND ADMINISTRATION OF PROGRAMS.

''(a) EDUCATION AND OUTREACH.—In carrying out the activities described in this subtitle, the Secretary shall support education and outreach activities to disseminate information on geothermal energy technologies and the geothermal energy workforce, including activities at the Frontier Observatory for Research in Geothermal Energy site or sites.

''(b) TECHNICAL ASSISTANCE.—In carrying out this subtitle, the Secretary shall also conduct technical assistance and analysis activities with eligible entities for the

purpose of supporting the commercial application of advances in geothermal energy systems development and operations, which may include activities that support expanding access to advanced geothermal energy technologies for rural, Tribal, and low-income communities.

''(c) REPORT.—Every 5 years after the date of enactment of this section, the Secretary shall report to the Committee on Science and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate on advanced concepts and technologies to maximize the geothermal resource potential of the United States.

''(d) PROGRESS REPORTS.—Not later than 1 year after the date of enactment of this section, and every 2 years thereafter, the Secretary shall submit to the Committee on Science and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report on the results of projects undertaken under this part and other such information the Secretary considers appropriate.''.

SEC. 2550. REPEALS.

(a) IN GENERAL.—Subtitle B of title VI of the Energy Independence and Security Act of 2007 (42 U.S.C. 17191 et seq.) is amended by striking section 620.

(b) CONFORMING AMENDMENT.—Section 1(b) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17001 note) is amended in the table of contents by striking the item related to section 620.

SEC. 2551. AUTHORIZATION OF APPROPRIATIONS.

Section 623 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17202) is amended to read as follows:

"SEC. 623. AUTHORIZATION OF APPROPRIATIONS.

''There are authorized to be appropriated to the Secretary to carry out the programs under this subtitle—

''(1) $182,062,500 for fiscal year 2021;

''(2) $199,125,000 for fiscal year 2022;

''(3) $216,187,500 for fiscal year 2023;

''(4) $225,750,000 for fiscal year 2024; and

''(5) $227,812,500 for fiscal year 2025.''.

SEC. 2552. INTERNATIONAL GEOTHERMAL ENERGY DEVELOPMENT.

Section 624 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17203) is amended—

(1) by amending subsection (a) to read as follows:

''(a) IN GENERAL.—The Secretary of Energy, in coordination with other appropriate Federal and multilateral agencies (including the United States Agency for Inter-

national Development) shall support collaborative efforts with international partners to promote the research, development, and demonstration of geothermal technologies used to develop hydrothermal and enhanced geothermal system resources.''; and

(2) by striking subsection (c).

SEC. 2553. REAUTHORIZATION OF HIGH COST REGION GEOTHERMAL ENERGY GRANT PROGRAM.

Section 625 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17204) is amended—

(1) in subsection (a)(2), by inserting '' or heat'' after ''electrical power''; and

(2) by amending subsection (e) to read as follows:

''(e) AUTHORIZATION OF APPROPRIATIONS.—Out of funds authorized under section 623, there is authorized to be appropriated to carry out this section $5,000,000 for each of fiscal years 2021 through 2025.''.

PART 4—WATER POWER RESEARCH AND DEVELOPMENT

SEC. 2561. WATER POWER RESEARCH AND DEVELOPMENT.

(a) IN GENERAL.—Subtitle C of title VI of the Energy Independence and Security Act of 2007 (42 U.S.C. 17211 et seq.) is amended to read as follows:

"Subtitle C—Water Power Research and Development

"SEC. 632. DEFINITIONS.

''In this subtitle:

''(1) ELIGIBLE ENTITY.—The term 'eligible entity' means any of the following entities:

''(A) An institution of higher education.

''(B) A National Laboratory.

''(C) A Federal research agency.

''(D) A State research agency.

''(E) A nonprofit research organization.

''(F) An industrial entity or a multi-institutional consortium thereof.

''(2) INSTITUTION OF HIGHER EDUCATION.—The term 'institution of higher education' has the meaning given such term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

''(3) MARINE ENERGY.—The term 'marine energy' means energy from—

''(A) waves, tides, and currents in oceans, estuaries, and tidal areas;

''(B) free flowing water in rivers, lakes, streams, and man-made channels;

''(C) differentials in salinity and pressure gradients; and

''(D) differentials in water temperature, including ocean thermal energy conversion.

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

''(5) WATER POWER.—The term 'water power' refers to hydropower, including conduit power, pumped storage, and marine energy technologies.

''(6) MICROGRID.—The term 'microgrid' has the meaning given such term in section 641 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17231).

''SEC. 633. WATER POWER TECHNOLOGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION.

''The Secretary shall carry out a program to conduct research, development, demonstration, and commercial application of water power technologies in support of each of the following purposes:

''(1) To promote research, development, demonstration, and commercial application of water power generation technologies in order to increase capacity and reduce the cost of those technologies.

''(2) To promote research and development to improve the environmental impact of water power technologies.

''(3) To provide grid reliability and resilience, including through technologies that facilitate new market opportunities, such as ancillary services, for water power.

''(4) To promote the development of water power technologies to improve economic growth and enhance cross-institutional foundational workforce development in the water power sector, including in coastal communities.

''SEC. 634. HYDROPOWER RESEARCH, DEVELOPMENT, AND DEMONSTRATION.

''The Secretary shall conduct a program of research, development, demonstration, and commercial application for technologies that improve the capacity, efficiency, resilience, security, reliability, affordability, and environmental impact, including potential cumulative environmental impacts, of hydropower systems. In carrying out such program, the Secretary shall prioritize activities designed to—

''(1) develop technology for—

''(A) non-powered dams, including aging and potentially hazardous dams;

"(B) pumped storage;

"(C) constructed waterways;

"(D) new stream-reach development;

"(E) modular and small dams;

"(F) increased operational flexibility; and

"(G) enhancement of relevant existing facilities;

"(2) develop new strategies and technologies, including analytical methods, physical and numerical tools, and advanced computing, as well as methods to validate such methods and tools, in order to—

"(A) extend the operational lifetime of hydropower systems and their physical structures, while improving environmental impact, including potential cumulative environmental impacts;

"(B) assist in device and system design, installation, operation, and maintenance; and

"(C) reduce costs, limit outages, and increase unit and plant efficiencies, including by examining the impact of changing water and electricity demand on hydropower generation, flexibility, and provision of grid services;

"(3) study, in conjunction with other relevant Federal agencies as appropriate, methods to improve the hydropower licensing process, including by com-

piling current and accepted best practices, public comments, and methodologies to assess the full range of potential environmental and economic impacts;

''(4) identify opportunities for joint research, development, and demonstration programs between hydropower systems, which may include—

''(A) pumped storage systems and other renewable energy systems;

''(B) small hydro facilities and other energy storage systems;

''(C) other hybrid energy systems;

''(D) small hydro facilities and critical infrastructure, including water infrastructure; and

''(E) hydro facilities and responsive load technologies, which may include smart buildings and city systems;

''(5) improve the reliability of hydropower technologies, including during extreme weather events;

''(6) develop methods and technologies to improve environmental impact, including potential cumulative environmental impacts, of hydropower and pumped storage technologies, including potential impacts on wildlife, such as—

"(A) fisheries;

"(B) aquatic life and resources;

"(C) navigation of waterways; and

"(D) upstream and downstream environmental conditions, including sediment movement, water quality, and flow volumes;

"(7) identify ways to increase power generation by—

"(A) diversifying plant configuration options;

"(B) improving pump-back efficiencies;

"(C) investigating multi-phase systems;

"(D) developing, testing, and monitoring advanced generators with faster cycling times, variable speeds, and improved efficiencies;

"(E) developing, testing, and monitoring advanced turbines capable of improving environmental impact, including potential cumulative environmental impacts, including small turbine designs;

"(F) developing standardized powertrain components;

"(G) developing components with advanced materials and manufacturing processes, including additive manufacturing; and

"(H) developing analytical tools that enable hydropower to provide grid services that, amongst other services, improve grid integration of other energy sources;

"(8) advance new pumped storage technologies, including—

"(A) systems with adjustable speed and other new pumping and generating equipment designs;

"(B) modular systems;

"(C) alternative closed-loop systems, including mines and quarries; and

"(D) other innovative equipment and materials as determined by the Secretary;

"(9) reduce civil works costs and construction times for hydropower and pumped storage systems, including comprehensive data and systems analysis of hydropower and pumped storage construction technologies and processes in order to identify areas for whole-system efficiency gains;

"(10) advance efficient and reliable integration of hydropower and pumped storage systems with the electric grid by—

"(A) improving methods for operational forecasting of renewable energy systems to

identify opportunities for hydropower applications in pumped storage and hybrid energy systems, including forecasting of seasonal and annual energy storage;

''(B) considering aggregating small distributed hydropower assets; and

''(C) identifying barriers to grid scale implementation of hydropower and pumped storage technologies;

''(11) improve computational fluid dynamic modeling methods;

''(12) improve flow measurement methods, including maintenance of continuous flow measurement equipment;

''(13) identify best methods for compiling data on all hydropower resources and assets, including identifying potential for increased capacity; and

''(14) identify mechanisms to test and validate performance of hydropower and pumped storage technologies.

''SEC. 635. MARINE ENERGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION.

''(a) IN GENERAL.—The Secretary, in consultation with the Department of Defense, Secretary of Commerce (acting through the Under Secretary of Commerce for

Oceans and Atmosphere) and other relevant Federal agencies, shall conduct a program of research, development, demonstration, and commercial application of marine energy technology, including activities to—

''(1) assist technology development to improve the components, processes, and systems used for power generation from marine energy resources at a variety of scales;

''(2) establish and expand critical testing infrastructure and facilities necessary to—

''(A) demonstrate and prove marine energy devices at a range of scales in a manner that is cost-effective and efficient; and

''(B) accelerate the technological readiness and commercial application of such devices;

''(3) address marine energy resource variability issues, including through the application of energy storage technologies;

''(4) advance efficient and reliable integration of marine energy with the electric grid, which may include smart building systems;

''(5) identify and study critical short-term and long-term needs to maintaining a sustainable marine energy supply chain based in the United States;

''(6) increase the reliability, security, and resilience of marine energy technologies;

''(7) validate the performance, reliability, maintainability, and cost of marine energy device designs and system components in an operating environment;

''(8) consider the protection of critical infrastructure, such as adequate separation between marine energy devices and submarine telecommunications cables, including through the development of voluntary, consensus-based standards for such purposes;

''(9) identify opportunities for crosscutting research, development, and demonstration programs between existing energy research programs;

''(10) identify and improve, in conjunction with the Secretary of Commerce, acting through the Under Secretary of Commerce for Oceans and Atmosphere, and other relevant Federal agencies as appropriate, the environmental impact, including potential cumulative environmental impacts, of marine energy technologies, including—

''(A) potential impacts on fisheries and other marine resources; and

"(B) developing technologies, including mechanisms for self-evaluation, and other means available for improving environmental impact, including potential cumulative environmental impacts;

"(11) identify, in consultation with relevant Federal agencies, potential navigational impacts of marine energy technologies and strategies to prevent possible adverse impacts, in addition to opportunities for marine energy systems to aid the United States Coast Guard, such as remote sensing for coastal border security;

"(12) develop numerical and physical tools, including models and monitoring technologies, to assist industry in device and system design, installation, operation, and maintenance, including methods to validate such tools;

"(13) support materials science as it relates to marine energy technology, such as the development of corrosive-resistant materials;

"(14) improve marine energy resource forecasting and general understanding of aquatic system behavior, including turbulence and extreme conditions;

''(15) develop metrics and voluntary, consensus-based standards, in coordination with the National Institute of Standards and Technology and appropriate standard development organizations, for marine energy components, systems, and projects, including—

''(A) measuring performance of marine energy technologies; and

''(B) characterizing environmental conditions;

''(16) enhance integration with hybrid energy systems, including desalination;

''(17) identify opportunities to integrate marine energy technologies into new and existing infrastructure; and

''(18) to develop technology necessary to support the use of marine energy—

''(A) for the generation and storage of power at sea; and

''(B) for the generation and storage of power to promote the resilience of coastal communities, including in applications relating to—

''(i) desalination;

''(ii) disaster recovery and resilience; and

''(iii) community microgrids in isolated power systems.

''(b) STUDY OF NON-POWER SECTOR APPLICATIONS FOR ADVANCED MARINE ENERGY TECHNOLOGIES.—

''(1) IN GENERAL.—The Secretary, in consultation with the Secretary of Transportation and the Secretary of Commerce, shall conduct a study to examine opportunities for research and development in advanced marine energy technologies for non-power sector applications, including applications with respect to—

''(A) the maritime transportation sector;

''(B) associated maritime energy infrastructure, including infrastructure that serves ports, to improve system resilience and disaster recovery; and

''(C) enabling scientific missions at sea and in extreme environments, including the Arctic.

''(2) REPORT.—Not later than 1 year 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 Committee on Science, Space, and Technology of the House of

Representatives a report that describes the results of the study conducted under paragraph (1).

"SEC. 636. NATIONAL MARINE ENERGY CENTERS.

"(a) IN GENERAL.—The Secretary shall award grants, each such grant up to $10,000,000 per year, to institutions of higher education (or consortia thereof) for—

"(1) the continuation and expansion of the research, development, demonstration, testing, and commercial application activities at the National Marine Energy Centers (referred to in this section as 'Centers') established as of January 1, 2020; and

"(2) the establishment of new National Marine Energy Centers.

"(b) LOCATION SELECTION.—In selecting institutions of higher education for new Centers, the Secretary shall consider the following criteria:

"(1) Whether the institution hosts an existing marine energy research and development program.

"(2) Whether the institution has proven technical expertise to support marine energy research.

"(3) Whether the institution has access to marine resources.

''(c) PURPOSES.—The Centers shall coordinate among themselves, the Department, and National Laboratories to—

''(1) advance research, development, demonstration, and commercial application of marine energy technologies in response to industry and commercial needs;

''(2) support in-water testing and demonstration of marine energy technologies, including facilities capable of testing—

''(A) marine energy systems of various technology readiness levels and scales;

''(B) a variety of technologies in multiple test berths at a single location;

''(C) arrays of technology devices; and

''(D) interconnectivity to an electrical grid, including microgrids; and

''(3) collect and disseminate information on best practices in all areas relating to developing and managing marine energy resources and energy systems.

''(d) COORDINATION.—To the extent practicable, the Centers shall coordinate their activities with the Secretary of Commerce, acting through the Undersecretary of Com-

merce for Oceans and Atmosphere, and other relevant Federal agencies.

''(e) TERMINATION.—To the extent otherwise authorized by law, the Secretary may terminate funding for a Center described in paragraph (a) if such Center is underperforming.

''SEC. 637. ORGANIZATION AND ADMINISTRATION OF PROGRAMS.

''(a) COORDINATION.—In carrying out this subtitle, the Secretary shall coordinate activities, and effectively manage cross-cutting research priorities across programs of the Department and other relevant Federal agencies, including the National Laboratories and the National Marine Energy Centers.

''(b) COLLABORATION.—

''(1) IN GENERAL.—In carrying out this subtitle, the Secretary shall collaborate with industry, National Laboratories, other relevant Federal agencies, institutions of higher education, including Minority Serving Institutions, National Marine Energy Centers, Tribal entities, including Alaska Native Corporations, and international bodies with relevant scientific and technical expertise.

''(2) PARTICIPATION.—To the extent practicable, the Secretary shall encourage research

projects that promote collaboration between entities specified in paragraph (1) and include entities not historically associated with National Marine Energy Centers, such as Minority Serving Institutions.

''(3) INTERNATIONAL COLLABORATION.—The Secretary of Energy, in coordination with other appropriate Federal and multilateral agencies (including the United States Agency for International Development) shall support collaborative efforts with international partners to promote the research, development, and demonstration of water power technologies used to develop hydropower, pump storage, and marine energy resources.

''(c) DISSEMINATION OF RESULTS AND PUBLIC AVAILABILITY.—The Secretary shall—

''(1) publish the results of projects supported under this subtitle through Department websites, reports, databases, training materials, and industry conferences, including information discovered after the completion of such projects, withholding any industrial proprietary information; and

''(2) share results of such projects with the public except to the extent that the information is protected from disclosure under section 552(b) of title 5, United States Code.

''(d) AWARD FREQUENCY.—The Secretary shall solicit applications for awards under this subtitle no less frequently than once per fiscal year.

''(e) EDUCATION AND OUTREACH.—In carrying out the activities described in this subtitle, the Secretary shall support education and outreach activities to disseminate information and promote public understanding of water power technologies and the water power workforce, including activities at the National Marine Energy Centers.

''(f) TECHNICAL ASSISTANCE AND WORKFORCE DEVELOPMENT.—In carrying out this subtitle, the Secretary may also conduct, for purposes of supporting technical, non-hardware, and information-based advances in water power systems development and operations—

''(1) technical assistance and analysis activities with eligible entities, including activities that support expanding access to advanced water power technologies for rural, Tribal, and low-income communities; and

''(2) workforce development and training activities, including to support the dissemination of standards and best practices for enabling water power production.

''(g) STRATEGIC PLAN.—In carrying out the activities described in this subtitle, the Secretary shall—

''(1) not later than one year after the date of the enactment of the Clean Economy Jobs and Innovation Act, draft a plan, considering input from relevant stakeholders such as industry and academia, to implement the programs described in this subtitle and update the plan on an annual basis; and

''(2) the plan shall address near-term (up to 2 years), mid-term (up to 7 years), and long-term (up to 15 years) challenges to the advancement of water power systems.

''(h) REPORT TO CONGRESS.—Not later than 1 year after the date of the enactment of the Clean Economy Jobs and Innovation Act, and at least once every 2 years thereafter, the Secretary shall provide, and make available to the public and the relevant authorizing and appropriations committees of Congress, a report on the findings of research conducted and activities carried out pursuant to this subtitle, including the most current strategic plan under subsection (g) and the progress made in implementing such plan.

''SEC. 638. APPLICABILITY OF OTHER LAWS.

''Nothing in this subtitle shall be construed as waiving, modifying, or superseding the applicability of any requirement under any environmental or other Federal or State law.

"SEC. 639. AUTHORIZATION OF APPROPRIATIONS.

"There are authorized to be appropriated to the Secretary to carry out this subtitle—

"(1) $229,125,000 for fiscal year 2021, including $168,870,000 for marine energy and $60,255,000 for hydropower research, development, and demonstration activities;

"(2) $236,517,450 for fiscal year 2022, including $174,454,800 for marine energy and $62,062,650 for hydropower research, development, and demonstration activities;

"(3) $244,187,873 for fiscal year 2023, including $180,263,343 for marine energy and $63,924,530 for hydropower research, development, and demonstration activities;

"(4) $252,147,209 for fiscal year 2024, including $186,304,944 for marine energy and $65,842,265 for hydropower research, development, and demonstration activities; and

"(5) $260,406,837 for fiscal year 2025, including $192,589,304 for marine energy and $67,817,533 for hydropower research, development, and demonstration activities.".

(b) CONFORMING TABLE OF CONTENTS AMENDMENT.—The table of contents for the Energy Independence and Security Act of 2007 is amended by striking the

items relating to subtitle C of title VI and inserting the following:

"Subtitle C—Water Power Research and Development

"Sec. 632. Definitions.
"Sec. 633. Water power technology research, development, and demonstration.
"Sec. 634. Hydropower research, development, and demonstration.
"Sec. 635. Marine energy research, development, and demonstration.
"Sec. 636. National Marine Energy Centers.
"Sec. 637. Organization and administration of programs.
"Sec. 638. Applicability of other laws.
"Sec. 639. Authorization of appropriations.".

SEC. 2562. CONFORMING AMENDMENTS.

(a) ENERGY POLICY ACT OF 2005.—The Energy Policy Act of 2005 (42 U.S.C. 15801 et seq.) is amended—

(1) in section 201(a), by striking "ocean (including tidal, wave, current, and thermal)" and inserting "marine";

(2) in section 203(b)(2), by—

(A) inserting "marine energy (as defined in section 632 of the Energy Independence and Security Act of 2007) or" before "electric energy"; and

(B) by striking "ocean (including tidal, wave, current, and thermal)";

(3) in section 931(a)(2)(E)(i), by striking "ocean energy, including wave energy" and inserting "marine energy (as defined in section 632 of the Energy Independence and Security Act of 2007)"; and

(4) in section 1833(a), by striking ''ocean energy resources (including tidal, wave, and thermal energy)'' and inserting ''marine energy resources (within the meaning of section 632 of the Energy Independence and Security Act of 2007)''.

(b) ENERGY POLICY ACT OF 1992.—Section 1212 of the Energy Policy Act of 1992 (42 U.S.C. 13317) is amended—

(1) in subsection (a)(4)(A)(i), by striking ''ocean (including tidal, wave, current, and thermal)'' and inserting ''marine energy (as defined in section 632 of the Energy Independence and Security Act of 2007)'';

(2) in subsection (b), in the matter preceding paragraph (1), by striking ''ocean (including tidal, wave, current, and thermal)'' and inserting ''marine energy (as defined in section 632 of the Energy Independence and Security Act of 2007)''; and

(3) in subsection (e)(1), in the first sentence, by striking ''ocean (including tidal, wave, current, and thermal)'' and inserting ''marine energy (as defined in section 632 of the Energy Independence and Security Act of 2007)''.

(c) RENEWABLE ENERGY AND ENERGY EFFICIENCY TECHNOLOGY COMPETITIVENESS ACT OF 1989.—The Re-

newable Energy and Energy Efficiency Technology Competitiveness Act of 1989 (42 U.S.C. 12001 et seq.) is amended—

(1) in section 4 (42 U.S.C. 12003)—

(A) in subsection (a)(5), by striking ''Ocean'' and inserting ''Marine''; and

(B) in subsection (c), in the matter preceding paragraph (1), by striking ''Ocean'' and inserting ''Marine''; and

(2) in section 9(c) (42 U.S.C. 12006(c)), by striking ''ocean,'' and inserting ''marine,''.

SEC. 2563. PRODUCED WATER RESEARCH AND DEVELOPMENT PROGRAM.

(a) ESTABLISHMENT.—As soon as possible after the date of enactment of this Act, the Secretary of Energy shall establish a research and development program on produced water to develop—

(1) new technologies and practices to reduce the environmental impact; and

(2) opportunities for reprocessing of produced water at natural gas or oil development sites.

(b) PRIORITIZATION.—The Secretary shall give priority to projects that develop and bring to market—

(1) effective systems for on-site management or repurposing of produced water; and

(2) new technologies or approaches to reduce the environmental impact of produced water on local water sources and the environment.

(c) CONDUCT OF PROGRAM.—In carrying out the program described in subsection (a), the Secretary shall carry out science-based research and development activities to pursue—

(1) improved efficiency, technologies, and techniques for produced water recycling stations; and

(2) B. alternative approaches to treating, reusing, storing, or decontaminating produced water.

(d) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated for purposes of this section $10,000,000 for each of fiscal years 2020 through 2025.

SEC. 2564. PRODUCED WATER DEMONSTRATION PROGRAM.

(a) ESTABLISHMENT.—The Secretary of Energy shall establish a demonstration program for on-site treatment of produced water.

(b) REQUIREMENTS.—In developing the demonstration program under this section, the Secretary shall consult with the heads of other relevant Federal departments and agencies, including the Department of the Interior and the Environmental Protection Agency.

(c) PRIORITIZATION.—In carrying out this section, the Secretary should prioritize—

(1) first-of-a-kind or new approaches to treating produced water stationed on site; and

(2) technologies that can be used at natural gas or oil development sites to reduce other environmental harm either through emissions or other environmental impact.

(d) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated for purposes of this section $10,000,000 for each of fiscal years 2020 through 2025.

PART 5—ENERGY EFFICIENCY AND RENEWABLE ENERGY RESEARCH AND DEVELOPMENT

SEC. 2571. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary of Energy or their designee to carry out research, development, demonstration, and commercial application activities under the Office of Energy Efficiency and Renewable Energy—

(1) $3,228,500,000 for fiscal year 2021;

(2) $3,250,775,500 for fiscal year 2022;

(3) $3,291,488,750 for fiscal year 2023;

(4) $3,334,238,188 for fiscal year 2024; and

(5) $3,379,125,097 for fiscal year 2025.

Subtitle F—Public Lands Renewable Energy Development

SEC. 2601. DEFINITIONS.

In this subtitle:

(1) COVERED LAND.—The term ''covered land'' means land that is—

(A) public lands administered by the Secretary; and

(B) not excluded from the development of geothermal, solar, or wind energy under—

(i) a land use plan established under the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); or

(ii) other Federal law.

(2) EXCLUSION AREA.—The term ''exclusion area'' means covered land that is identified by the Bureau of Land Management as not suitable for development of renewable energy projects.

(3) FEDERAL LAND.—The term ''Federal land'' means public lands.

(4) FUND.—The term ''Fund'' means the Renewable Energy Resource Conservation Fund established by section 2608(c)(1).

(5) PRIORITY AREA.—The term ''priority area'' means covered land identified by the land use plan-

ning process of the Bureau of Land Management as being a preferred location for a renewable energy project, including a designated leasing area (as defined in section 2801.5(b) of title 43, Code of Federal Regulations (or a successor regulation)) that is identified under the rule of the Bureau of Land Management entitled ''Competitive Processes, Terms, and Conditions for Leasing Public Lands for Solar and Wind Energy Development and Technical Changes and Corrections'' (81 Fed. Reg. 92122 (December 19, 2016)) (or a successor regulation).

(6) PUBLIC LANDS.—The term ''public lands'' has the meaning given that term in section 103 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1702).

(7) RENEWABLE ENERGY PROJECT.—The term ''renewable energy project'' means a project carried out on covered land that uses wind, solar, or geothermal energy to generate energy.

(8) SECRETARY.—The term ''Secretary'' means the Secretary of the Interior.

(9) VARIANCE AREA.—The term ''variance area'' means covered land that is—

(A) not an exclusion area;

(B) not a priority area; and

(C) identified by the Secretary as potentially available for renewable energy development and could be approved without a plan amendment, consistent with the principles of multiple use (as that term is defined in the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.)).

SEC. 2602. LAND USE PLANNING; SUPPLEMENTS TO PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENTS.

(a) PRIORITY AREAS.—

(1) IN GENERAL.—The Secretary, in consultation with the Secretary of Energy, shall establish priority areas on covered land for geothermal, solar, and wind energy projects. Projects located in those priority areas shall be given the highest priority for review, and shall be offered the opportunity to participate in any regional mitigation plan developed for the relevant priority areas.

(2) DEADLINE.—

(A) GEOTHERMAL ENERGY.—For geothermal energy, the Secretary shall establish priority areas as soon as practicable, but not later than 5 years, after the date of the enactment of this Act.

(B) SOLAR ENERGY.—For solar energy, solar Designated Leasing Areas, including the solar energy zones established by the 2012 western solar plan of the Bureau of Land Management and any subsequent land use plan amendments, shall be considered to be priority areas for solar energy projects. The Secretary shall establish additional solar priority areas as soon as practicable, but not later than 3 years, after the date of the enactment of this Act.

(C) WIND ENERGY.—For wind energy, the Secretary shall establish additional wind priority areas as soon as practicable, but not later than 3 years, after the date of the enactment of this Act.

(b) VARIANCE AREAS.—To the maximum extent practicable, variance areas shall be considered for renewable energy project development, consistent with the principles of multiple use (as defined in the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.)).

(c) REVIEW AND MODIFICATION.—Not less than once every 5 years, the Secretary shall—

(1) review the adequacy of land allocations for geothermal, solar, and wind energy priority and vari-

ance areas for the purpose of encouraging new renewable energy development opportunities; and

(2) based on the review carried out under paragraph (1), add, modify, or eliminate priority, variance, and exclusion areas.

(d) COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT.—For purposes of this section, compliance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) shall be accomplished—

(1) for geothermal energy, by supplementing the October 2008 final programmatic environmental impact statement for geothermal leasing in the Western United States and incorporating any additional regional analyses that have been completed by Federal agencies since the programmatic environmental impact statement was finalized;

(2) for solar energy, by supplementing the July 2012 final programmatic environmental impact statement for solar energy development and incorporating any additional regional analyses that have been completed by Federal agencies since the programmatic environmental impact statement was finalized; and

(3) for wind energy, by supplementing the July 2005 final programmatic environmental impact

statement for wind energy development and incorporating any additional regional analyses that have been completed by Federal agencies since the programmatic environmental impact statement was finalized.

(e) NO EFFECT ON PROCESSING APPLICATIONS.—Any requirements to prepare a supplement to a programmatic environmental impact statement under this section shall not result in any delay in processing a pending application for a renewable energy project.

(f) COORDINATION.—In developing a supplement required by this section, the Secretary shall coordinate, on an ongoing basis, with appropriate State, Tribal, and local governments, transmission infrastructure owners and operators, developers, and other appropriate entities to ensure that priority areas identified by the Secretary are—

(1) economically viable (including having access to existing and/or planned transmission lines);

(2) likely to avoid or minimize impacts to habitat for animals and plants, recreation, cultural resources, and other uses of covered land; and

(3) consistent with section 202 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1712), including subsection (c)(9) of that section (43 U.S.C. 1712(c)(9)).

SEC. 2603. ENVIRONMENTAL REVIEW ON COVERED LAND.

(a) IN GENERAL.—If the Secretary determines that a proposed renewable energy project has been sufficiently analyzed by a programmatic environmental impact statement conducted under section 2602(d), the Secretary shall not require any additional review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.). The Secretary shall publish any such project determinations on a publicly available website.

(b) ADDITIONAL ENVIRONMENTAL REVIEW.—If the Secretary determines that additional environmental review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) is necessary for a proposed renewable energy project, the Secretary shall rely on the analysis in the programmatic environmental impact statement conducted under section 2602(d), to the maximum extent practicable when analyzing the potential impacts of the project.

(c) RELATIONSHIP TO OTHER LAW.—Nothing in this section modifies or supersedes any requirement under applicable law.

SEC. 2604. PROGRAM TO IMPROVE RENEWABLE ENERGY PROJECT PERMIT COORDINATION.

(a) ESTABLISHMENT.—The Secretary shall establish a national Renewable Energy Coordination Office and State, district, or field offices with responsibility to estab-

lish and implement a program to improve Federal permit coordination with respect to renewable energy projects on covered land and other activities deemed necessary by the Secretary. In carrying out the program, the Secretary may temporarily assign qualified staff to Renewable Energy Coordination Offices to expedite the permitting of renewable energy projects.

(b) MEMORANDUM OF UNDERSTANDING.—

(1) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the Secretary shall enter into a memorandum of understanding for purposes of this section, including to specifically expedite the environmental analysis of applications for projects proposed in a variance area or a priority area, with the Secretary of Defense.

(2) STATE AND TRIBAL PARTICIPATION.—The Secretary may request the Governor of any interested State or any Tribal leader of any interested Indian Tribe (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304)) to be a signatory to the memorandum of understanding under paragraph (1).

(c) DESIGNATION OF QUALIFIED STAFF.—

(1) IN GENERAL.—Not later than 30 days after the date on which the memorandum of under-

standing under subsection (b) is executed, all Federal signatories, as appropriate, shall identify for each of the Bureau of Land Management Renewable Energy Coordination Offices one or more employees who have expertise in the regulatory issues relating to the office in which the employee is employed, including, as applicable, particular expertise in—

(A) consultation regarding, and preparation of, biological opinions under section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1536);

(B) permits under section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344);

(C) regulatory matters under the Clean Air Act (42 U.S.C. 7401 et seq.);

(D) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.);

(E) the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.);

(F) the preparation of analyses under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.);

(G) implementation of the requirements of section 306108 of title 54, United States Code

(formerly known as section 106 of the National Historic Preservation Act);

(H) the Bald and Golden Eagle Protection Act (16 U.S.C. 668 through 668d); and

(I) section 100101(a), chapter 1003, and sections 100751(a), 100752, 100753 and 102101 of title 54 , United States Code (previously known as the ''National Park Service Organic Act'').

(2) DUTIES.—Each employee assigned under paragraph (1) shall—

(A) be responsible for addressing all issues relating to the jurisdiction of the home office or agency of the employee; and

(B) participate as part of the team of personnel working on proposed energy projects, planning, monitoring, inspection, enforcement, and environmental analyses.

(d) ADDITIONAL PERSONNEL.—The Secretary may assign such additional personnel for the Bureau of Land Management Renewable Energy Coordination Offices as are necessary to ensure the effective implementation of any programs administered by the offices in accordance with the multiple use mandate of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.).

(e) CLARIFICATION OF EXISTING AUTHORITY.—Under section 307 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1737), the Bureau of Land Management may—

(1) accept donations for the purposes of public lands management; and

(2) accept donations from renewable energy companies working on public lands to help cover the costs of environmental reviews.

(f) REPORT TO CONGRESS.—

(1) IN GENERAL.—Not later than February 1 of the first fiscal year beginning after the date of the enactment of this Act, and each February 1 thereafter, the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Natural Resources of the House of Representatives a report describing the progress made under the program established under subsection (a) during the preceding year.

(2) INCLUSIONS.—Each report under this subsection shall include—

(A) projections for renewable energy production and capacity installations; and

(B) a description of any problems relating to leasing, permitting, siting, or production.

SEC. 2605. INCREASING ECONOMIC CERTAINTY.

(a) CONSIDERATIONS.—The Secretary is authorized to and shall consider acreage rental rates, capacity fees, and other recurring annual fees in total when evaluating existing rates paid for the use of Federal land by renewable energy projects.

(b) INCREASES IN BASE RENTAL RATES.—Once a base rental rate is established upon the issuance of a right-of-way authorization, increases in the base rent shall be limited to the Implicit Price Deflator–Gross Domestic Product (IPD–GDP) index for the entire term of the right-of-way authorization.

(c) REDUCTIONS IN BASE RENTAL RATES.—The Secretary is authorized to reduce acreage rental rates and capacity fees, or both, for existing and new wind and solar authorizations if the Secretary determines—

(1) that the existing rates—

(A) exceed fair market value;

(B) impose economic hardships;

(C) limit commercial interest in a competitive lease sale or right-of-way grant; or

(D) are not competitively priced compared to other available land; or

(2) that a reduced rental rate or capacity fee is necessary to promote the greatest use of wind and solar energy resources, especially those resources in-

side priority areas. Rental rates and capacity fees for projects that are within the boundaries of a Designated Leasing Area but not formally recognized as being in such an area shall be equivalent to rents and fees for new leases inside of a Designated Leasing Area.

SEC. 2606. RENEWABLE ENERGY GOAL.

The Secretary shall seek to issue permits that, in total, authorize production of not less than 25 gigawatts of electricity from wind, solar, and geothermal energy projects by not later than 2025, through management of public lands and administration of Federal laws.

SEC. 2607. FACILITATION OF COPRODUCTION OF GEOTHERMAL ENERGY ON OIL AND GAS LEASES.

Section 4(b) of the Geothermal Steam Act of 1970 (30 U.S.C. 1003(b)) is amended by adding at the end the following:

''(4) LAND SUBJECT TO OIL AND GAS LEASE.—Land under an oil and gas lease issued pursuant to the Mineral Leasing Act (30 U.S.C. 181 et seq.) or the Mineral Leasing Act for Acquired Lands (30 U.S.C. 351 et seq.) that is subject to an approved application for permit to drill and from which oil and gas production is occurring may be available for

noncompetitive leasing under subsection (c) by the holder of the oil and gas lease—

''(A) on a determination that geothermal energy will be produced from a well producing or capable of producing oil and gas; and

''(B) in order to provide for the coproduction of geothermal energy with oil and gas.''.

SEC. 2608. NONCOMPETITIVE LEASING OF ADJOINING AREAS FOR DEVELOPMENT OF GEOTHERMAL RESOURCES.

Section 4(b) of the Geothermal Steam Act of 1970 (30 U.S.C. 1003(b)) is further amended by adding at the end the following:

''(5) ADJOINING LAND.—

''(A) DEFINITIONS.—In this paragraph:

''(i) FAIR MARKET VALUE PER ACRE.—The term 'fair market value per acre' means a dollar amount per acre that—

''(I) except as provided in this clause, shall be equal to the market value per acre (taking into account the determination under subparagraph (B)(iii) regarding a valid discovery on the adjoining land) as determined by

the Secretary under regulations issued under this paragraph;

''(II) shall be determined by the Secretary with respect to a lease under this paragraph, by not later than the end of the 180-day period beginning on the date the Secretary receives an application for the lease; and

''(III) shall be not less than the greater of—

''(aa) 4 times the median amount paid per acre for all land leased under this Act during the preceding year; or

''(bb) $50.

''(ii) INDUSTRY STANDARDS.—The term 'industry standards' means the standards by which a qualified geothermal professional assesses whether downhole or flowing temperature measurements with indications of permeability are sufficient to produce energy from geothermal resources, as determined through flow or injection

testing or measurement of lost circulation while drilling.

''(iii) QUALIFIED FEDERAL LAND.—The term 'qualified Federal land' means land that is otherwise available for leasing under this Act.

''(iv) QUALIFIED GEOTHERMAL PROFESSIONAL.—The term 'qualified geothermal professional' means an individual who is an engineer or geoscientist in good professional standing with at least 5 years of experience in geothermal exploration, development, or project assessment.

''(v) QUALIFIED LESSEE.—The term 'qualified lessee' means a person who may hold a geothermal lease under this Act (including applicable regulations).

''(vi) VALID DISCOVERY.—The term 'valid discovery' means a discovery of a geothermal resource by a new or existing slim hole or production well, that exhibits downhole or flowing temperature measurements with indications of permeability that are sufficient to meet industry standards.

''(B) AUTHORITY.—An area of qualified Federal land that adjoins other land for which a qualified lessee holds a legal right to develop geothermal resources may be available for a noncompetitive lease under this section to the qualified lessee at the fair market value per acre, if—

''(i) the area of qualified Federal land—

''(I) consists of not less than 1 acre and not more than 640 acres; and

''(II) is not already leased under this Act or nominated to be leased under subsection (a);

''(ii) the qualified lessee has not previously received a noncompetitive lease under this paragraph in connection with the valid discovery for which data has been submitted under clause (iii)(I); and

''(iii) sufficient geological and other technical data prepared by a qualified geothermal professional has been submitted by the qualified lessee to the applicable Federal land management agency that would

lead individuals who are experienced in the subject matter to believe that—

"(I) there is a valid discovery of geothermal resources on the land for which the qualified lessee holds the legal right to develop geothermal resources; and

"(II) that geothermal feature extends into the adjoining areas.

"(C) DETERMINATION OF FAIR MARKET VALUE.—

"(i) IN GENERAL.—The Secretary shall—

"(I) publish a notice of any request to lease land under this paragraph;

"(II) determine fair market value for purposes of this paragraph in accordance with procedures for making those determinations that are established by regulations issued by the Secretary;

"(III) provide to a qualified lessee and publish, with an opportunity for public comment for a period of 30

days, any proposed determination under this subparagraph of the fair market value of an area that the qualified lessee seeks to lease under this paragraph; and

''(IV) provide to the qualified lessee and any adversely affected party the opportunity to appeal the final determination of fair market value in an administrative proceeding before the applicable Federal land management agency, in accordance with applicable law (including regulations).

''(ii) LIMITATION ON NOMINATION.—After publication of a notice of request to lease land under this paragraph, the Secretary may not accept under subsection (a) any nomination of the land for leasing unless the request has been denied or withdrawn.

''(iii) ANNUAL RENTAL.—For purposes of section 5(a)(3), a lease awarded under this paragraph shall be considered a lease awarded in a competitive lease sale.

''(D) REGULATIONS.—Not later than 270 days after the date of the enactment of this paragraph, the Secretary shall issue regulations to carry out this paragraph.''.

SEC. 2609. SAVINGS CLAUSE.

Notwithstanding any other provision of this subtitle, the Secretary shall continue to manage public lands under the principles of multiple use and sustained yield in accordance with title I of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.), including due consideration of mineral and nonrenewable energy-related projects and other nonrenewable energy uses, for the purposes of land use planning, permit processing, and conducting environmental reviews.

Subtitle G—Renewable Energy Grant Program

SEC. 2701. RENEWABLE ENERGY GRANT PROGRAM.

(a) ESTABLISHMENT.—Not later than 180 days after the date of enactment of this Act, the Secretary shall establish a renewable energy program (in this section referred to as the ''program'') under which the Secretary may award grants to covered entities to facilitate projects, in territories of the United States, described in subsection (c).

(b) APPLICATIONS.—To be eligible for a grant under the program, a covered entity shall submit to the Secretary an application at such time, in such form, and containing such information as the Secretary may require.

(c) GRANT USES.—

(1) IN GENERAL.—A covered entity receiving a grant under the program may use grant funds for a project, in territories of the United States—

(A) to develop or construct a renewable energy system;

(B) to carry out an activity to increase energy efficiency;

(C) to develop or construct an energy storage system or device for—

(i) a system developed or constructed under subparagraph (A); or

(ii) an activity carried out under subparagraph (B);

(D) to develop or construct—

(i) a smart grid; or

(ii) a microgrid; or

(E) to train residents of territories of the United States to develop, construct, maintain, or operate a renewable energy system.

(2) LIMITATION.—A covered entity receiving a grant under the program may not use grant funds to develop or construct a facility that generates electricity using energy derived from—

(A) fossil fuels; or

(B) nuclear power.

(d) TECHNICAL ASSISTANCE.—The Secretary shall ensure that Department of Energy national laboratories offer to provide technical assistance to each covered entity carrying out a project assisted with a grant under the program.

(e) REPORT.—Not later than two years after the establishment of the program, and on an annual basis thereafter, the Secretary shall submit to Congress a report containing—

(1) an estimate of the amount of funds disbursed under the program;

(2) an estimate of the energy conservation achieved as a result of the program;

(3) a description of challenges encountered in implementing projects described in subsection (c)(1); and

(4) recommendations as to additional legislative measures to increase the use of renewable energy in territories of the United States, as appropriate.

(f) GAO STUDY AND REPORT.—

(1) STUDY AND REPORT.—Not later than 180 days after the date of enactment of this section, the Comptroller General of the United States shall—

(A) conduct a study regarding renewable energy and energy efficiency in territories of the United States; and

(B) submit to Congress a report containing—

(i) the findings of the study; and

(ii) related recommendations.

(2) COMPONENTS.—The study conducted under paragraph (1) shall consider, in relation to territories of the United States, the potential—

(A) to modify existing electric power systems to use renewable energy sources;

(B) to expand the use of microgrids; and

(C) to improve energy resiliency.

(g) DEFINITIONS.—In this section, the following definitions apply:

(1) COVERED ENTITY.—The term ''covered entity'' means a not-for-profit organization determined eligible by the Secretary for purposes of this section.

(2) DEPARTMENT OF ENERGY NATIONAL LABORATORIES.—The term ''Department of Energy na-

tional laboratories'' has the same meaning as the term ''National Laboratory'' under section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801).

(3) MICROGRID.—The term ''microgrid'' means an electric system—

(A) that serves the local community with a power generation and distribution system; and

(B) that has the ability—

(i) to disconnect from a traditional electric grid; and

(ii) to operate autonomously when disconnected.

(4) RENEWABLE ENERGY; RENEWABLE ENERGY SYSTEM.—The terms ''renewable energy'' and ''renewable energy system'' have the meanings given those terms in section 415(c) of the Energy Conservation and Production Act (42 U.S.C. 6865(c)).

(5) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(6) SMART GRID.—The term ''smart grid'' means an intelligent electric grid that uses digital communications technology, information systems, and automation to, while maintaining high system reliability—

(A) detect and react to local changes in usage;

(B) improve system operating efficiency; and

(C) reduce spending costs.

(7) TERRITORY.—The term ''territory'' means the Commonwealth of Puerto Rico, Guam, the United States Virgin Islands, American Samoa, and the Commonwealth of the Northern Mariana Islands.

(h) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated such sums as may be necessary to carry out this section.

Subtitle H—Other

SEC. 2801. AMENDMENT TO ENERGY POLICY ACT OF 2005 DEFINITION OF RENEWABLE ENERGY.

(a) IN GENERAL.—Section 203 of the Energy Policy Act of 2005 (42 U.S.C. 15852) is amended—

(1) in subsection (b)(2), by striking ''generated'' and inserting ''produced''; and

(2) in subsection (c)—

(A) by redesignating paragraphs (1) through (3) as subparagraphs (A) through (C), respectively, and indenting appropriately;

(B) in the matter preceding subparagraph (A) (as so redesignated), by striking ''For purposes'' and inserting the following:

''(1) IN GENERAL.—For purposes''; and

(C) by adding at the end the following:

''(2) SEPARATE CALCULATION.—

''(A) IN GENERAL.—For purposes of determining compliance with the requirement of this section, any energy consumption that is avoided through the use of geothermal energy shall be considered to be renewable energy produced.

''(B) EFFICIENCY ACCOUNTING.—Energy consumption that is avoided through the use of geothermal energy that is considered to be renewable energy under this section shall not be considered energy efficiency for the purpose of compliance with Federal energy efficiency goals, targets, and incentives.''.

(b) CONFORMING AMENDMENT.—Section 2410q(a) of title 10, United States Code, is amended by striking ''section 203(b)(2) of the Energy Policy Act of 2005 (42 U.S.C. 15852(b)(2))'' and inserting ''section 203(b) of the Energy Policy Act of 2005 (42 U.S.C. 15852(b))''.

TITLE III—CARBON POLLUTION REDUCTION TECHNOLOGIES

Subtitle A—Fossil Energy Research and Development

SEC. 3101. DEFINITIONS.

For purposes of this part:

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

(2) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

SEC. 3102. FOSSIL ENERGY OBJECTIVES.

Section 961 of the Energy Policy Act of 2005 (42 U.S.C. 16291) is amended—

(1) in subsection (a)—

(A) by striking paragraph (2) and inserting the following:

''(2) Decreasing the cost of emissions control technologies for fossil energy production, generation, and delivery.'';

(B) by striking paragraph (7) and inserting the following:

''(7) Increasing the export of emissions control technologies from the United States for fossil energy-related equipment, technology, and services.''; and

(C) by adding at the end the following:

''(8) Improving the conversion, use, and storage of carbon oxides.

''(9) Lowering greenhouse gas emissions for all fossil fuel production, generation, delivery, and utilization, to the maximum extent possible.

''(10) Preventing, predicting, monitoring, and mitigating the unintended leaking of methane, carbon dioxide, or other fossil fuel-related emissions into the atmosphere.

''(11) Improving the separation and purification of helium from fossil fuel resources.

''(12) Reducing water use, improving water reuse, and minimizing the surface and subsurface environmental impact in the development of unconventional domestic oil and natural gas resources.

''(13) Developing carbon removal and utilization technologies, products, and methods that result in net reductions in greenhouse gas emissions, including direct air capture and storage and carbon use and reuse for commercial application.'';

(2) by striking subsections (c) through (e) and inserting the following:

''(c) PRIORITIZATION.—In carrying out this section, the Secretary shall prioritize technologies and strategies

that have the potential to meet emissions reduction goals in the agreement of the twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change.

''(d) LIMITATION.—None of the funds authorized under this section may be used for Fossil Energy Environmental Restoration or Import/Export Authorization.''.

SEC. 3103. CARBON CAPTURE TECHNOLOGIES.

(a) CARBON CAPTURE PROGRAM.—Section 962 of the Energy Policy Act of 2005 (42 U.S.C. 16292) is amended to read as follows:

''SEC. 962. CARBON CAPTURE TECHNOLOGIES.

''(a) IN GENERAL.—The Secretary shall conduct a program of research, development, demonstration, and commercial application of carbon capture technologies, which shall include facilitation of the development and use of—

''(1) carbon capture technologies for coal and natural gas;

''(2) innovations to significantly decrease emissions at existing power plants;

''(3) innovations to significantly decrease emissions in manufacturing and industrial applications, including at biofuel facilities; and

''(4) advanced separation technologies.

''(b) INVESTMENT.—As a part of the program under subsection (a), the Secretary shall maintain robust investments in carbon capture technologies for coal and natural gas applications.

''(c) LARGE-SCALE PILOTS.—In carrying out this section, the Secretary is encouraged to support pilot projects that test carbon capture technologies on coal and natural gas power and industrial systems below the 100 megawatt scale, consistent with section 988(b).

''(d) COST AND PERFORMANCE GOALS.—In carrying out the program under subsection (a), the Secretary shall establish cost and performance goals to assist in the transition of carbon capture research to commercially viable technologies.

''(e) CARBON CAPTURE PILOT TEST CENTERS.—

''(1) IN GENERAL.—As a part of the program under subsection (a), not later than 1 year after the date of the enactment of this section, the Secretary shall award grants to eligible entities for the operation of not less than three Carbon Capture Test Centers (in this subsection, known as the 'Centers') to provide unique testing capabilities for innovative carbon capture technologies for power and industrial systems.

''(2) PURPOSE.—Each Center shall—

"(A) advance research, development, demonstration, and commercial application of carbon capture technologies for power and industrial systems; and

"(B) test technologies that represent the scale of technology development beyond laboratory testing, but not yet advanced to testing under operational conditions at commercial scale.

"(3) APPLICATION.—An entity seeking to operate a Center under this subsection shall submit to the Secretary an application at such time and in such manner as the Secretary may require.

"(4) PRIORITY CRITERIA.—In selecting applications to operate a Center under this subsection, the Secretary shall prioritize applicants that—

"(A) have access to existing or planned research facilities with modular technology capabilities;

"(B) are institutions of higher education with established expertise in engineering and design for carbon capture technologies, or partnerships with such institutions;

''(C) have access to existing research and test facilities for pre-combustion, post-combustion, or oxy-combustion technologies; or

''(D) have test capabilities to address scaling challenges of integrating carbon capture technologies with utility scale power plants.

''(5) CONSIDERATIONS.—In awarding grants for the operation of the Centers under this subsection, the Secretary shall ensure that—

''(A) the portfolio of Centers includes a diverse representation of regional and resource characteristics; and

''(B) each new Center demonstrates unique research capabilities, unique regional benefits, or new technology development opportunities.

''(6) SCHEDULE.—Each grant to operate a Center under this subsection shall be awarded for a term of not more than 5 years, subject to the availability of appropriations. The Secretary may renew such 5-year term without limit, subject to a rigorous merit review.

''(7) TERMINATION.—To the extent otherwise authorized by law, the Secretary may eliminate a Center during any 5-year term described in paragraph (6) if such Center is underperforming.

''(f) DEMONSTRATIONS.—

''(1) IN GENERAL.—As a part of the program under subsection (a), the Secretary may provide grants for large-scale demonstration projects for power and industrial systems that test the scale of technology necessary to gain the operational data needed to understand the technical and performance risks of the technology before the application of the technology at commercial scale, in accordance with this subsection.

''(2) ENGINEERING AND DESIGN STUDIES.—The Secretary is authorized to fund front-end engineering and design studies in addition to, or in advance of, issuing an award for a demonstration project under this subsection.

''(3) APPLICATION.—An entity seeking an award to conduct a demonstration project under this subsection shall submit to the Secretary an application at such time and in such manner as the Secretary may require.

''(4) LIMITATIONS.—The Secretary shall only provide an award under this subsection after reviewing each applicant and application regarding—

''(A) financial strength;

''(B) construction schedule;

''(C) market risk; and

''(D) contractor history.

''(5) REQUIREMENTS.—A demonstration project funded under this subsection shall—

''(A) utilize technologies that have completed pilot-scale testing or the equivalent, as determined by the Secretary;

''(B) secure and maintain agreements for the utilization or sequestration of captured carbon dioxide; and

''(C) upon completion, demonstrate carbon capture technologies on a power or industrial system capable of capturing not less than 100,000 tons of carbon dioxide annually.

''(g) DEFINITION OF POWER SYSTEM.—In this section, the term 'power system' means any electricity generating unit that utilizes fossil fuels to generate electricity provided to the electric grid or directly to a consumer.

''(h) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary for activities under subsections (a) through (f)—

''(1) $300,000,000 for fiscal year 2021;

''(2) $315,000,000 for fiscal year 2022;

''(3) $330,750,000 for fiscal year 2023;

''(4) $347,288,000 for fiscal year 2024; and

''(5) $364,652,000 for fiscal year 2025.

''(i) COMMERCIAL DEMONSTRATION.—

''(1) IN GENERAL.—The Secretary shall establish a carbon capture technology commercialization program to improve the efficiency, effectiveness, cost, and environmental performance of such technologies for power, industrial, transportation, and other commercial applications. Such program shall include funding for commercial carbon capture technology projects for up to five demonstrations of a particular technology type.

''(2) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this subsection $1,500,000,000 for each of fiscal years 2021 through 2025.''.

(b) GAO STUDY.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Comptroller General of the United States 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 report on the results of a study of the Department's successes, failures, practices, and improvements in carrying out demonstration projects for carbon capture

technologies for power and industrial systems. In conducting the study, the Comptroller General shall consider—

(A) applicant and contractor qualifications;

(B) project management practices at the Department;

(C) economic or market changes and other factors impacting project viability;

(D) completion of third-party agreements, including power purchase agreements and carbon dioxide offtake agreements;

(E) regulatory challenges; and

(F) construction challenges.

(2) CONSIDERATION.—The Secretary shall consider any relevant recommendations, as determined by the Secretary, provided in the report required under paragraph (1), and shall adopt such recommendations as the Secretary considers appropriate.

(3) POWER SYSTEM DEFINED.—In this section, the term ''power system'' means any electricity generating unit that utilizes fossil fuels to generate electricity provided to the electric grid or directly to a consumer.

SEC. 3104. NATURAL GAS CARBON CAPTURE RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAM.

(a) IN GENERAL.—Subtitle F of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16291 et seq.) is amended by adding at the end the following:

"SEC. 969. NATURAL GAS CARBON CAPTURE RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAM.

''(a) DEFINITIONS.—In this section:

''(1) NATURAL GAS.—The term 'natural gas' includes any fuel consisting in whole or in part of—

''(A) natural gas;

''(B) liquid petroleum gas;

''(C) synthetic gas derived from petroleum or natural gas liquids; or

''(D) any mixture of natural gas and synthetic gas.

''(2) QUALIFYING ELECTRIC GENERATION FACILITY.—The term 'qualifying electric generation facility' means a facility that generates electric energy through the use of natural gas or a facility that generates hydrogen from natural gas.

''(3) QUALIFYING TECHNOLOGY.—The term 'qualifying technology' means any technology to capture carbon dioxide produced during the generation

of electricity from natural gas power systems or during the generation of hydrogen from natural gas.

''(b) ESTABLISHMENT OF RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAM.—

''(1) IN GENERAL.—The Secretary shall establish a program under which the Secretary shall, through a competitive, merit-reviewed process, award grants to eligible entities to conduct research, development, and demonstration of qualifying technologies.

''(2) OBJECTIVES.—The objectives of the program established under paragraph (1) shall be—

''(A) to conduct research to accelerate the development of qualifying technologies to reduce the quantity of carbon dioxide emissions released from qualifying electric generation facilities, including—

''(i) pre- and post-combustion capture technologies; and

''(ii) technologies to improve the thermodynamics, kinetics, scalability, durability, and flexibility of carbon capture technologies for use during the generation of electricity from natural gas power systems;

''(B) to expedite and carry out demonstration projects (including pilot projects) for qualifying technologies in partnership with qualifying electric generation facilities in order to demonstrate the technical feasibility and economic potential for commercial deployment of technologies developed pursuant to subparagraph (A); and

''(C) to identify any barriers to the commercial deployment of any qualifying technologies under development pursuant to research conducted pursuant to subparagraph (A).

''(3) ELIGIBLE ENTITIES.— An entity eligible to receive a grant under this subsection is—

''(A) a National Laboratory;

''(B) an institution of higher education;

''(C) a research facility;

''(D) a multi-institutional collaboration; or

''(E) another appropriate entity or combination of any of the entities specified in subparagraphs (A) through (D).

''(c) CARBON CAPTURE FACILITIES DEMONSTRATION PROGRAM.—

''(1) ESTABLISHMENT.—As part of the program established under paragraph (1), the Secretary shall establish a demonstration program under which the Secretary shall, through a competitive, merit-reviewed process, enter into cooperative agreements with entities that submit applications pursuant to paragraph (4) for demonstration or pilot projects to construct and operate, by not later than September 30, 2025, up to five facilities to capture carbon dioxide from qualifying electric generation facilities. The Secretary shall, to the maximum extent practicable, provide technical assistance to any entity seeking to enter into such a cooperative agreement in obtaining any necessary permits and licenses to demonstrate qualifying technologies.

''(2) COOPERATIVE AGREEMENTS.—The Secretary may enter into a cooperative agreement under this subsection with industry stakeholders, including any such industry stakeholder operating in partnership with National Laboratories, institutions of higher education, multi-institutional collaborations, and other appropriate entities.

''(3) GOALS.—Each demonstration or pilot project carried out pursuant to the demonstration program under this subsection shall—

"(A) be designed to further the development of qualifying technologies that may be used by a qualifying electric generation facility;

"(B) be financed in part by the private sector;

"(C) if necessary, secure agreements for the offtake of carbon dioxide emissions captured by qualifying technologies during the project; and

"(D) support energy production in the United States.

"(4) REQUEST FOR APPLICATIONS.—Not later than 120 days after the date of enactment of this Act, the Secretary shall solicit applications for cooperative agreements for projects—

"(A) to demonstrate qualifying technologies at up to five qualifying electric generation facilities; and

"(B) to construct and operate three or more facilities to capture carbon dioxide from a qualifying electric generation facility.

"(5) REVIEW OF APPLICATIONS.—In considering applications submitted under paragraph (4), the Secretary, to the maximum extent practicable, shall—

"(A) ensure a broad geographic distribution of project sites;

"(B) ensure that a broad selection of qualifying electric generation facilities are represented;

"(C) ensure that a broad selection of qualifying technologies are represented;

"(D) require information and knowledge gained by each participant in the demonstration program to be transferred and shared among all participants in the demonstration program; and

"(E) leverage existing—

"(i) public-private partnerships; and

"(ii) Federal resources.

"(d) COST SHARING.—In carrying out this section, the Secretary shall require cost sharing in accordance with section 988.

"(e) REPORT.—Not later than 180 days after the date on which the Secretary solicits applications under subsection (c)(3), and annually thereafter, the Secretary shall submit to the appropriate committees of jurisdiction of the Senate and the House of Representatives a report that includes—

''(1) a detailed description of how applications for cooperative agreements under subsection (b) will be solicited and evaluated, including—

''(A) a list of any activities carried out by the Secretary to solicit or evaluate applications; and

''(B) a process for ensuring that any projects carried out under a cooperative agreement are designed to result in the development or demonstration of qualifying technologies;

''(2)(A) in the case of the first report under this subsection, a detailed list of technical milestones for the development and demonstration of each qualifying technology pursued under subsection (b); and

''(B) in the case of each subsequent report under this subsection, the progress made towards achieving such technical milestones during the period covered by the report; and

''(3) with respect to the demonstration program established under subsection (c), includes—

''(A) an estimate of the cost of licensing, permitting, constructing, and operating each carbon capture facility expected to be constructed under that demonstration program;

''(B) a schedule for the planned construction and operation of each demonstration or pilot project; and

''(C) an estimate of any financial assistance, compensation, or incentives proposed to be paid by the host State, Indian Tribe, or local government with respect to each facility.

''(f) There are authorized to be appropriated to the Secretary to carry out this section $50,000,000, to remain available until expended, for each of fiscal years 2021 through 2025.''.

(b) CLERICAL AMENDMENT.—The table of contents for the Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 600) is amended by inserting after the item relating to section 968 the following:

''Sec. 969. Natural gas carbon capture research, development, and demonstration program.''.

SEC. 3105. CARBON STORAGE VALIDATION AND TESTING.

Section 963 of the Energy Policy Act of 2005 (42 U.S.C. 16293) is amended to read as follows:

''SEC. 963. CARBON STORAGE VALIDATION AND TESTING.

''(a) CARBON STORAGE.—The Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall carry out a program of research, development, and demonstration for carbon storage. The program shall—

''(1) in coordination with relevant Federal agencies, develop and maintain mapping tools and resources that assess the capacity of geologic storage formations in the United States;

''(2) develop monitoring tools, modeling of geologic formations, and analyses to predict and verify carbon dioxide containment and account for sequestered carbon dioxide in geologic storage sites;

''(3) research potential environmental, safety, and health impacts in the event of a leak to the atmosphere or to an aquifer, and any corresponding mitigation actions or responses to limit harmful consequences;

''(4) evaluate the interactions of carbon dioxide with formation solids and fluids, including the propensity of injections to induce seismic activity;

''(5) assess and ensure the safety of operations related to geologic sequestration of carbon dioxide;

''(6) determine the fate of carbon dioxide concurrent with and following injection into geologic formations;

''(7) support cost and business model assessments to examine the economic viability of technologies and systems developed under this program; and

''(8) provide information to State, local, and Tribal governments, the Environmental Protection Agency, and other appropriate entities, to support development of a regulatory framework for commercial-scale sequestration operations that ensure the protection of human health and the environment.

''(b) GEOLOGIC SETTINGS.—In carrying out research activities under this section, the Secretary shall consider a variety of candidate geologic settings, both onshore and offshore, including—

''(1) operating oil and gas fields;

''(2) depleted oil and gas fields;

''(3) residual oil zones;

''(4) unconventional reservoirs and rock types;

''(5) unmineable coal seams;

''(6) saline formations in both sedimentary and basaltic geologies;

''(7) geologic systems that may be used as engineered reservoirs to extract economical quantities of brine from geothermal resources of low permeability or porosity; and

''(8) geologic systems containing in situ carbon dioxide mineralization formations.

''(c) REGIONAL CARBON SEQUESTRATION PARTNERSHIPS.—

''(1) IN GENERAL.—The Secretary shall carry out large-scale carbon sequestration demonstrations for geologic containment of carbon dioxide to collect and validate information on the cost and feasibility of commercial deployment of technologies for the geologic containment of carbon dioxide. The Secretary may fund new demonstrations or expand the work completed at one or more of the existing regional carbon sequestration partnerships.

''(2) DEMONSTRATION COMPONENTS.—Each demonstration described in paragraph (1) shall include longitudinal tests involving carbon dioxide injection and monitoring, mitigation, and verification operations.

''(3) CLEARINGHOUSE.—The National Energy Technology Laboratory shall act as a clearinghouse of shared information and resources for the regional carbon sequestration partnerships and any new demonstrations funded under this section.

''(4) REPORT.—Not later than 1 year after the date of enactment of this section, the Secretary shall provide 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 report that—

''(A) assesses the progress of all regional carbon sequestration partnerships;

''(B) identifies the remaining challenges in achieving carbon sequestration that is reliable and safe for the environment and public health; and

''(C) creates a roadmap for Department of Energy carbon storage research and development activities through 2030 with the goal of reducing economic and policy barriers to commercial carbon sequestration.

''(5) LARGE-SCALE CARBON SEQUESTRATION.—For purposes of this subsection, 'large-scale carbon sequestration' means a scale that demonstrates the ability to inject and sequester several million metric tons carbon dioxide for at least 10 years.

''(d) INTEGRATED STORAGE PROJECTS.—The Secretary may carry out a program for the purpose of transitioning the large-scale carbon sequestration demonstration projects under subsection (c) into integrated, commercial storage complexes. The program shall focus on—

''(1) qualifying geologic storage sites in order to accept large volumes of carbon dioxide acceptable for commercial contracts;

''(2) understanding the technical and commercial viability of storage sites;

''(3) developing the qualification processes that will be necessary for a diverse range of geologic storage sites to commercially accept carbon dioxide; and

''(4) any other activities the Secretary determines necessary to transition the large scale demonstration storage projects into commercial ventures.

''(e) COST SHARING.—The Secretary shall require cost sharing under this section in accordance with section 988.

''(f) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary for activities under this section—

''(1) $620,000,000 for fiscal year 2021;

''(2) $626,000,000 for fiscal year 2022;

''(3) $632,300,000 for fiscal year 2023;

''(4) $638,915,000 for fiscal year 2024; and

''(5) $645,860,750 for fiscal year 2025.''.

SEC. 3106. CARBON UTILIZATION.

(a) PROGRAM.—Subtitle F of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16291 et seq.), as amended by this Act, is amended by adding at the end the following:

"SEC. 970. CARBON UTILIZATION.

"(a) IN GENERAL.—The Secretary shall carry out a program of research, development, and demonstration for carbon utilization. The program shall—

"(1) assess and monitor potential changes in life cycle carbon dioxide and other greenhouse gas emissions, and other environmental safety indicators of new technologies, practices, processes, or methods, used in enhanced hydrocarbon recovery as part of the activities authorized in section 963 of the Energy Policy Act of 2005 (42 U.S.C. 16293);

"(2) identify and evaluate novel uses for carbon, including the conversion of carbon oxides, in a manner that, on a full life-cycle basis, achieves a permanent reduction in, or avoidance of a net increase in carbon dioxide in the atmosphere, for use in commercial and industrial products, such as—

"(A) chemicals;

"(B) plastics;

"(C) building materials;

"(D) fuels;

"(E) cement;

"(F) products of coal utilization in power systems (as such term is defined in section 962(e)), or other applications; or

''(G) other products with demonstrated market value;

''(3) carbon capture technologies for industrial systems;

''(4) identify and assess alternative uses for coal that result in no net emissions of carbon dioxide or other pollutants, including products derived from carbon engineering, carbon fiber, and coal conversion methods.

''(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary for activities under this section—

''(1) $30,000,000 for fiscal year 2021;

''(2) $31,500,000 for fiscal year 2022;

''(3) $33,075,000 for fiscal year 2023;

''(4) $34,729,000 for fiscal year 2024; and

''(5) $36,465,000 for fiscal year 2025.''.

(b) STUDY.—The Secretary shall enter into an agreement with the National Academies to conduct a study assessing the barriers, and opportunities related to the commercial application of carbon dioxide in the United States. Such study shall—

(1) analyze the technical feasibility, related challenges, and impacts to commercializing carbon dioxide, including—

(A) creating a national system of carbon dioxide pipelines and geologic sequestration sites;

(B) mitigating environmental and landowner impacts; and

(C) regional economic challenges and opportunities;

(2) identify potential markets, industries, or sectors that may benefit from greater access to commercial carbon dioxide;

(3) assess the current state of infrastructure and any necessary updates to allow for the integration of safe and reliable carbon dioxide transportation, utilization, and storage;

(4) estimate the economic, climate, and environmental impacts of any well-integrated national carbon dioxide pipeline system, including suggestions for policies that could improve the economic impact of the system;

(5) assess the global status and progress of carbon utilization technologies (both chemical and biological) in practice today that utilize waste carbon (including carbon dioxide, carbon monoxide, methane, and biogas) from power generation, biofuels production, and other industrial processes that may

be important to minimizing net greenhouse gas emissions;

(6) identify emerging technologies and approaches for carbon utilization that show promise for scale-up, demonstration, deployment, and commercialization relevant to minimizing net greenhouse gas emissions;

(7) analyze the factors associated with making carbon utilization technologies that may be important to minimizing net greenhouse gas emissions viable at a commercial scale, including carbon waste stream availability, economics, market capacity, energy and lifecycle requirements;

(8) assess the major technical challenges associated with increasing the commercial viability of carbon reuse technologies, and identify the research and development questions that will address those challenges;

(9) assess current research efforts, including engineering and computational, that are addressing these challenges and identify gaps in the current research portfolio; and

(10) develop a comprehensive research agenda that addresses both long- and short-term research needs and opportunities for technologies that may be

important to minimizing net greenhouse gas emissions.

SEC. 3107. ADVANCED ENERGY SYSTEMS.

Subtitle F of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16291 et seq.), as amended by this Act, is further amended by adding at the end the following:

"SEC. 970A. ADVANCED ENERGY SYSTEMS.

''(a) IN GENERAL.—The Secretary shall conduct a program, with the purpose of reducing emissions from fossil fuel power generation by not less than 50 percent, of research, development, demonstration, and commercial application with respect to the following:

''(1) High-efficiency turbines in accordance with the program under section 970A–1.

''(2) Supercritical and ultrasupercritical carbon dioxide, with an emphasis on developing directly-fired and indirectly fired cycles in the next 10 years.

''(3) Advanced combustion systems, including oxy-combustion systems and chemical looping.

''(4) Fuel cell technologies for low-cost, high-efficiency, fuel-flexible, modular power systems, including solid oxide fuel cell technology for commercial, residential, and distributed generation systems, using improved manufacturing production and processes.

''(5) Gasification systems to enable carbon capture, improve efficiency, and reduce capital and operating costs.

''(6) Thermal cycling with ramping or rapid black start capabilities that do not compromise efficiency or environmental performance.

''(7) Small-scale and modular coal-fired technologies with reduced carbon outputs or carbon capture that can support incremental power generation capacity additions.

''(b) PRIORITY.—In carrying out the program under subsection (a), the Secretary is encouraged to prioritize transformational technologies that enable a step change in reduction of emissions as compared to the technology in existence on the date of enactment of this section.

''(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary for activities under this section and section 970A–1—

''(1) $150,000,000 for fiscal year 2021;

''(2) $157,500,000 for fiscal year 2022;

''(3) $165,375,000 for fiscal year 2023;

''(4) $173,643,750 for fiscal year 2024; and

''(5) $182,325,938 for fiscal year 2025.

"SEC. 970A–1. HIGH EFFICIENCY GAS TURBINES.

"(a) IN GENERAL.—The Secretary of Energy, through the Office of Fossil Energy, shall carry out a multiyear, multiphase program of research, development, and technology demonstration to improve the efficiency of gas turbines used in power generation systems and to identify the technologies that ultimately will lead to gas turbine combined cycle efficiency of 67 percent or simple cycle efficiency of 50 percent.

"(b) PROGRAM ELEMENTS.—The program under this section shall—

"(1) support first-of-a-kind engineering and detailed gas turbine design for megawatt-scale and utility-scale electric power generation, including—

"(A) high temperature materials, including superalloys, coatings, and ceramics;

"(B) improved heat transfer capability;

"(C) manufacturing technology required to construct complex three-dimensional geometry parts with improved aerodynamic capability;

"(D) combustion technology to produce higher firing temperature while lowering nitrogen oxide and carbon monoxide emissions per unit of output;

"(E) advanced controls and systems integration;

''(F) advanced high performance compressor technology; and

''(G) validation facilities for the testing of components and subsystems;

''(2) include technology demonstration through component testing, subscale testing, and full-scale testing in existing fleets;

''(3) include field demonstrations of the developed technology elements so as to demonstrate technical and economic feasibility; and

''(4) assess overall combined cycle and simple cycle system performance.

''(c) PROGRAM GOALS.—The goals of the multiphase program established under subsection (a) shall be—

''(1) in phase I—

''(A) to develop the conceptual design of advanced high efficiency gas turbines that can achieve at least 65-percent combined cycle efficiency or 47-percent simple cycle efficiency on a lower heating value basis; and

''(B) to develop and demonstrate the technology required for advanced high efficiency gas turbines that can achieve at least 65-percent combined cycle efficiency or 47-percent simple

cycle efficiency on a lower heating value basis; and

''(2) in phase II, to develop the conceptual design for advanced high efficiency gas turbines that can achieve at least 67-percent combined cycle efficiency or 50-percent simple cycle efficiency on a lower heating value basis.

''(d) PROPOSALS.—Not later than 180 days after the date of enactment of this section, the Secretary shall solicit grant and contract proposals from industry, small businesses, universities, and other appropriate parties for conducting activities under this Act. In selecting proposals, the Secretary shall emphasize—

''(1) the extent to which the proposal will stimulate the creation or increased retention of jobs in the United States; and

''(2) the extent to which the proposal will promote and enhance United States technology leadership.

''(e) COMPETITIVE AWARDS.—The provision of funding under this section shall be on a competitive basis with an emphasis on technical merit.

''(f) COST SHARING.—Section 988 of the Energy Policy Act of 2005 (42 U.S.C. 16352) shall apply to an award of financial assistance made under this section.

''(g) LIMITS ON PARTICIPATION.—The limits on participation applicable under section 999E of the Energy Policy Act of 2005 (42 U.S.C. 16375) shall apply to financial assistance awarded under this section.''.

SEC. 3108. RARE EARTH ELEMENTS.

Subtitle F of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16291 et seq.) is further amended by adding at the end the following:

''SEC. 970B. RARE EARTH ELEMENTS.

''(a) IN GENERAL.—In coordination with the relevant Federal agencies, the Secretary shall conduct research to develop and assess methods to separate and recover rare earth elements and other strategic minerals and coproducts from coal and coal byproduct streams. The program shall—

''(1) develop advanced rare earth element separation and extraction processes using coal-based resources as feedstock materials;

''(2) assess the technical and economic feasibility of recovering rare earth elements from coal-based resources and validate such feasibility with prototype systems producing salable, high-purity rare earth elements from coal-based resources; and

''(3) assess and mitigate any environmental and public health impacts of recovering rare earth elements from coal-based resources.

''(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary for activities under this section—

''(1) $23,000,000 for fiscal year 2021;

''(2) $24,150,000 for fiscal year 2022;

''(3) $25,357,500 for fiscal year 2023;

''(4) $26,625,375 for fiscal year 2024; and

''(5) $27,956,644 for fiscal year 2025.''.

SEC. 3109. METHANE HYDRATE RESEARCH AMENDMENTS.

(a) REPEAL.—Section 2 of the Methane Hydrate Research and Development Act of 2000 (30 U.S.C. 2001) is repealed.

(b) DEVELOPMENT.—Section 4 of the Methane Hydrate Research and Development Act of 2000 (30 U.S.C. 2003) is amended by striking ''and development'' in each place it occurs.

(c) IN GENERAL.—Section 4(b) of the Methane Hydrate Research and Development Act of 2000 (30 U.S.C. 2003(b)) is amended to read as follows:

''(b) GRANTS, CONTRACTS, COOPERATIVE AGREEMENTS, INTERAGENCY FUNDS TRANSFER AGREEMENTS, AND FIELD WORK PROPOSALS.—

''(1) ASSISTANCE AND COORDINATION.—In carrying out the program of methane hydrate research authorized by this section, the Secretary may award grants, or enter into contracts or cooperative agreements to—

''(A) conduct research to assess and mitigate the environmental impact of natural methane hydrate degassing;

''(B) conduct research to identify the environmental and health impacts of methane hydrate development;

''(C) assess and develop technologies to mitigate environmental impacts of natural methane hydrate degassing and to mitigate environmental impacts of the exploration and commercial development of methane hydrates, including through the avoidance of the use of seismic testing; or

''(D) expand education and training programs in methane hydrate research through fellowships or other means for graduate education and training.

''(2) ENVIRONMENTAL MONITORING AND RESEARCH.—

''(A) IN GENERAL.—The Secretary, Secretary of Commerce, and Secretary of the Interior shall conduct a long-term environmental monitoring and research program to study methane hydrates.

''(B) NOTICE AND COMMENT.—In developing a plan for long-term environmental monitoring and research under subparagraph (A), the Secretaries shall publish in the Federal Register a notice providing for an opportunity for the public to comment on such plan prior to conducting monitoring and research under such subparagraph.

''(3) COMPETITIVE PEER REVIEW.—Funds made available to carry out paragraphs (1) and (2) shall be made available based on a competitive process using external scientific peer review of proposed research.''.

(d) RESPONSIBILITIES OF THE SECRETARY.—Section 4(e) of the Methane Hydrate Research and Development Act of 2000 (30 U.S.C. 2003(e)) is amended to read as follows:

''(e) RESPONSIBILITIES OF THE SECRETARY.—In carrying out subsection (b)(1), the Secretary shall—

''(1) facilitate and develop partnerships among government, industrial enterprises, and institutions of higher education to research methane hydrates;

''(2) ensure that the data and information developed through the program are accessible and widely disseminated as needed and appropriate;

''(3) promote cooperation among agencies that are developing technologies that may hold promise for methane hydrate research;

''(4) report annually to Congress on the results of actions taken to carry out this chapter; and

''(5) ensure, to the maximum extent practicable, greater participation by the Department of Energy in international cooperative efforts.''.

(e) CONFORMING AMENDMENT.—Section 4(e) of such Act (30 U.S.C. 2003(e)) is amended in the matter preceding paragraph (1) by striking ''subsection (b)(1)'' and inserting ''paragraphs (1) and (2) of subsection (b)''.

(f) AUTHORIZATION OF APPROPRIATIONS.—Section 7 of such Act (30 U.S.C. 2006) is amended to read as follows:

''SEC. 7. AUTHORIZATION OF APPROPRIATIONS.

''There are authorized to be appropriated to the Secretary to carry out this Act $15,000,000, to remain avail-

able until expended, for each of fiscal years 2021 through 2025.''.

SEC. 3110. CARBON REMOVAL.

Subtitle F of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16291 et seq.) is further amended by adding at the end the following:

''SEC. 970C. CARBON REMOVAL.

''(a) ESTABLISHMENT.—The Secretary, in coordination with the appropriate Federal agencies, shall establish a research, development, and demonstration program to remove carbon dioxide from the atmosphere on a large scale. The program may include activities in—

''(1) direct air capture and storage technologies;

''(2) enhanced carbon mineralization;

''(3) bioenergy with carbon capture and sequestration;

''(4) agricultural and grazing practices;

''(5) forest management and afforestation; and

''(6) planned or managed carbon sinks, including natural and artificial.

''(b) PRIORITIZATION.—In carrying out the program established in subsection (a), the Secretary shall prioritize—

''(1) the activities described in paragraphs (1) and (2) of subsection (a), acting through the Assistant Secretary for Fossil Energy;

''(2) the activities described in subsection (a)(3), acting through the Assistant Secretary for Energy Efficiency and Renewable Energy and the Assistant Secretary for Fossil Energy;

''(3) the activities described in subsection (a)(4), acting through the Assistant Secretary for Fossil Energy in consultation with the Secretary of Agriculture; and

''(4) the activities described in subsection (a)(5), acting through the Assistant Secretary for Fossil Energy in consultation with the Secretary of Agriculture.

''(c) CONSIDERATIONS.—The program under this section shall identify and develop carbon removal technologies and strategies that consider the following:

''(1) Land use changes, including impacts on natural and managed ecosystems.

''(2) Ocean acidification.

''(3) Net greenhouse gas emissions.

''(4) Commercial viability.

''(5) Potential for near-term impact.

''(6) Potential for carbon reductions on a gigaton scale.

''(7) Economic co-benefits.

''(d) ACCOUNTING.—The Department shall collaborate with the Environmental Protection Agency and other relevant agencies to develop and improve accounting frameworks and tools to accurately measure carbon removal and sequestration methods and technologies across the Federal Government.

''(e) AIR CAPTURE TECHNOLOGY PRIZE.—Not later than 1 year after the date of enactment of this Act, as part of the program carried out under this section, the Secretary shall carry out a program to award competitive technology prizes for carbon dioxide capture from ambient air or water. In carrying out this subsection, the Secretary shall—

''(1) in accordance with section 24 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3719), develop requirements for—

''(A) the prize competition process;

''(B) minimum performance standards for projects eligible to participate in the prize competition; and

''(C) monitoring and verification procedures for projects selected to receive a prize award;

''(2) establish minimum levels for the capture of carbon dioxide from ambient air or water that are required to qualify for a prize award; and

''(3) offer prize awards for any of the following:

''(A) A design for a promising capture technology that will—

''(i) be operated on a demonstration scale; and

''(ii) have the potential to achieve significant reduction in the level of carbon dioxide in the atmosphere.

''(B) A successful bench-scale demonstration of a capture technology.

''(f) COMMERCIAL DIRECT AIR CAPTURE PRIZE.—

''(1) DEFINITIONS.—In this subsection:

''(A) QUALIFIED CARBON DIOXIDE.—

''(i) IN GENERAL.—The term 'qualified carbon dioxide' means any carbon dioxide that—

''(I) is captured directly from the ambient air; and

''(II) is measured at the source of capture and verified at the point of disposal, injection, or utilization.

''(ii) INCLUSION.—The term 'qualified carbon dioxide' includes the initial deposit of captured carbon dioxide used as a tertiary injectant.

''(iii) EXCLUSION.—The term 'qualified carbon dioxide' does not include carbon dioxide that is recaptured, recycled, and reinjected as part of the enhanced oil and natural gas recovery process.

''(B) QUALIFIED DIRECT AIR CAPTURE FACILITY.—

''(i) IN GENERAL.—Subject to clause (ii), the term 'qualified direct air capture facility' means any facility that—

''(I) uses carbon capture equipment to capture carbon dioxide directly from the ambient air; and

''(II) captures more than 10,000 metric tons of qualified carbon dioxide annually.

''(ii) EXCLUSION.—The term 'qualified direct air capture facility' does not in-

clude any facility that captures carbon dioxide—

"(I) that is deliberately released from naturally occurring subsurface springs; or

"(II) using natural photosynthesis.

"(2) ESTABLISHMENT.—Not later than 1 year after the date of enactment of this section, the Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall establish a commercial direct air capture prize designed to significantly reward commercial applications of direct air capture technologies.

"(3) COMMERCIAL DIRECT AIR CAPTURE PRIZE PROGRAM.—

"(A) AWARDS.—Under the prize program, the Secretary shall provide financial awards in a competitive setting equally for each ton of qualified carbon dioxide captured by a qualified direct air capture facility until appropriated funds are expended. The prize per metric ton shall not exceed—

''(i) $180 for qualified carbon dioxide captured and stored in saline storage formations;

''(ii) a lesser amount as determined by the Secretary for qualified carbon dioxide captured and stored in conjunction with enhanced oil recovery operations; or

''(iii) a lesser amount as determined by the Secretary for qualified carbon dioxide captured and utilized in any activity consistent with section 45Q(f)(5) of the Internal Revenue Code of 1986.

''(B) ADMINISTRATION.—

''(i) REQUIREMENTS.—Not later than 1 year after the date of enactment of this section, the Administrator, in consultation with the Secretary, shall submit requirements for qualifying metric tons of carbon dioxide. In carrying out this clause, the Administrator shall develop specific requirements for—

''(I) the process of applying for prizes; and

''(II) the demonstration of performance of approved projects.

"(ii) DETERMINATION.—For purposes of determining the amount of metric tons of qualified carbon dioxide eligible for prizes under clause (i), the amount shall be equal to the net metric tons of carbon dioxide removal demonstrated by the recipient, subject to the requirements set forth by the Administrator under such clause.

"(C) SCHEDULE OF PAYMENT.—The Secretary shall award prizes on an annual basis to qualified direct air capture facilities for metric tons of qualified carbon dioxide captured and verified at the point of disposal, injection, or utilization.

"(4) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this subsection $200,000,000 for the period of fiscal years 2021 through 2025, and $400,000,000 for the period of fiscal years 2026 through 2030, to remain available until expended.

"(g) DIRECT AIR CAPTURE TEST CENTER.—

"(1) IN GENERAL.—Not later than 1 year after the date of enactment of this section, the Secretary shall award grants to one or more eligible entities for the operation of one or more test centers (in this

subsection, known as 'Centers') to provide unique testing capabilities for innovative direct air capture and storage technologies.

''(2) PURPOSE.—Each Center shall—

''(A) advance research, development, demonstration, and commercial application of direct air capture and storage technologies;

''(B) support pilot plant and full-scale demonstration projects and test technologies that represent the scale of technology development beyond laboratory testing but not yet advanced to test under operational conditions at commercial scale;

''(C) develop front-end engineering design and economic analysis; and

''(D) maintain a public record of pilot and full-scale plant performance.

''(3) PRIORITY CRITERIA.—In selecting applications to operate a Center under this subsection, the Secretary shall prioritize applicants that—

''(A) have access to existing or planned research facilities;

''(B) are institutions of higher education with established expertise in engineering for di-

rect air capture technologies, or partnerships with such institutions; or

''(C) have access to existing research and test facilities for bulk materials design and testing, component design and testing, or professional engineering design.

''(4) SCHEDULE.—Each grant to operate a Center under this subsection shall be awarded for a term of not more than 5 years, subject to the availability of appropriations. The Secretary may renew such 5-year term without limit, subject to a rigorous merit review.

''(5) TERMINATION.—To the extent otherwise authorized by law, the Secretary may eliminate the center during any 5-year term described in the last paragraph if it is underperforming.

''(h) LARGE-SCALE PILOTS AND DEMONSTRATIONS.—In supporting the technology development activities under this section, the Secretary is encouraged to support carbon removal pilot and demonstration projects, including—

''(1) pilot projects that test direct air capture systems capable of capturing 10 to 100 tonnes of carbon oxides per year to provide data for demonstration-scale projects; and

''(2) direct air capture demonstration projects capable of capturing greater than 1,000 tonnes of carbon oxides per year.

''(i) INTRA-AGENCY RESEARCH.—In carrying out the program established in (a), the Secretary shall encourage and promote collaborations among relevant offices and agencies within the Department.

''(j) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary for activities under this section—

''(1) $275,000,000 for fiscal year 2021, of which $15,000,000 are authorized to carry out subsection (e) and of which $200,000,000 are authorized to carry out subsection (f);

''(2) $263,000,000 for fiscal year 2022, of which $200,000,000 are authorized to carry out subsection (f);

''(3) $266,150,000 for fiscal year 2023, of which $200,000,000 are authorized to carry out subsection (f);

''(4) $269,458,000 for fiscal year 2024, of which $200,000,000 are authorized to carry out subsection (f); and

''(5) $272,930,000 for fiscal year 2025, of which $200,000,000 are authorized to carry out subsection (f).''.

SEC. 3111. METHANE LEAK DETECTION AND MITIGATION.

Subtitle F of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16291 et seq.) is further amended by adding at the end the following:

''SEC. 970D. METHANE LEAK DETECTION AND MITIGATION.

''(a) IN GENERAL.—The Secretary, in consultation with the Administrator of the Environmental Protection Agency and other appropriate Federal agencies, shall carry out a program of methane leak detection and mitigation research, development, demonstration, and commercial application for technologies and methods that significantly reduce emissions. In carrying out the program, the Secretary shall—

''(1) develop cooperative agreements with State or local governments or private entities to provide technical assistance to—

''(A) prevent or respond to methane leaks, including detection, mitigation, and identification of leaks throughout the natural gas infrastructure (which includes natural gas storage, pipelines, and natural gas production sites); and

''(B) protect public health in the event of a major methane leak;

''(2) promote demonstration and adoption of effective methane emissions-reduction technologies in the private sector;

''(3) in coordination with representatives from private industry, State and local governments, and institutions of higher education, create a publicly accessible resource for best practices in the design, construction, maintenance, performance, monitoring, and incident response for—

''(A) pipeline systems;

''(B) wells;

''(C) compressor stations;

''(D) storage facilities; and

''(E) other vulnerable infrastructure;

''(4) identify high-risk characteristics of pipelines, wells, and materials, geologic risk factors, or other key factors that increase the likelihood of methane leaks; and

''(5) in collaboration with private entities and institutions of higher education, quantify and map significant geologic methane seeps across the United States.

''(b) CONSIDERATIONS.—In carrying out the program under this section, the Secretary shall consider the following:

''(1) Historical data of methane leaks.

''(2) Public health consequences.

''(3) Public safety.

''(4) Novel materials and designs for pipelines, compressor stations, components, and wells (including casing, cement, wellhead).

''(5) Regional geologic traits.

''(6) Induced and natural seismicity.

''(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary for activities under this section—

''(1) $22,000,000 for fiscal year 2021;

''(2) $23,100,000 for fiscal year 2022;

''(3) $24,255,000 for fiscal year 2023;

''(4) $25,467,750 for fiscal year 2024; and

''(5) $26,741,138 for fiscal year 2025.''.

SEC. 3112. WASTE GAS UTILIZATION.

Subtitle F of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16291 et seq.) is further amended by adding at the end the following:

''SEC. 970E. WASTE GAS UTILIZATION.

''The Secretary shall carry out a program of research, development, and demonstration for waste gas utilization. The program shall—

''(1) identify and evaluate novel uses for light hydrocarbons, such as methane, ethane, propane, butane, pentane, and hexane, produced during oil and shale gas production, including the production of chemicals or transportation fuels;

''(2) develop advanced gas conversion technologies that are modular and compact, and may leverage advanced manufacturing technologies;

''(3) support demonstration activities at operating oil and gas facilities to test the performance and cost-effectiveness of new gas conversion technologies; and

''(4) assess and monitor potential changes in life cycle greenhouse gas emissions that may result from the use of technologies developed under this program.''.

SEC. 3113. NATIONAL ENERGY TECHNOLOGY LABORATORY REFORMS.

(a) SPECIAL HIRING AUTHORITY FOR SCIENTIFIC, ENGINEERING, AND PROJECT MANAGEMENT PERSONNEL.—

(1) IN GENERAL.—The Director of the National Energy Technology Laboratory shall have the authority to—

(A) make appointments to positions in the Laboratory to assist in meeting a specific project or research need, without regard to civil service laws, of individuals who—

(i) have an advanced scientific or engineering background; or

(ii) have a business background and can assist in specific technology-to-market needs;

(B) fix the basic pay of any employee appointed under this section at a rate not to exceed level II of the Executive Schedule; and

(C) pay any employee appointed under this section payments in addition to basic pay, except that the total amount of additional payments paid to an employee under this subsection for any 12-month period shall not exceed the least of—

(i) $25,000;

(ii) the amount equal to 25 percent of the annual rate of basic pay of that employee; and

(iii) the amount of the limitation that is applicable for a calendar year under section 5307(a)(1) of title 5, United States Code.

(2) LIMITATIONS.—

(A) IN GENERAL.—The term of any employee appointed under this section shall not exceed 3 years.

(B) FULL-TIME EMPLOYEES.—Not more than 10 full-time employees appointed under this subsection may be employed at the National Energy Technology Laboratory at any given time.

(b) DISCRETIONARY RESEARCH AND DEVELOPMENT.—

(1) IN GENERAL.—The Secretary shall establish mechanisms under which the Director of the National Energy Technology Laboratory may use an amount that is, in total, not less than 2 percent and not more than 4 percent of all funds available to the Laboratory for the following purposes:

(A) To fund innovative research that is conducted at the Laboratory and supports the mission of the Department.

(B) To fund technology development programs that support the transition of technologies developed by the Laboratory into the commercial market.

(C) To fund workforce development activities to strengthen external engineering and manufacturing partnerships to ensure safe, efficient, productive, and useful fossil energy technology production.

(D) To fund the revitalization, recapitalization, or minor construction of the Laboratory infrastructure.

(2) PRIORITIZATION.—The Director shall prioritize innovative experiments and proposals proposed by scientists and researchers at the National Energy Technology Laboratory.

(3) ANNUAL REPORT ON USE OF AUTHORITY.—Not later than March 1 of each year, 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 report on the use of the authority under this subsection during the preceding fiscal year.

(c) LABORATORY OPERATIONS.—The Secretary shall delegate human resources operations of the National Energy Technology Laboratory to the Director of the National Energy Technology Laboratory.

(d) REVIEW.—Not later than 2 years after the date of enactment of this Act, 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 report assessing the National Energy Technology Laboratory's management and research. The report shall include—

(1) an assessment of the quality of science and research at the National Energy Technology Laboratory relative to similar work at other national laboratories;

(2) a review of the effectiveness of authorities provided in subsections (a) and (b); and

(3) recommendations for policy changes within the Department and legislative changes to provide the National Energy Technology Laboratory the necessary tools and resources to advance its research mission.

SEC. 3114. CLIMATE SOLUTIONS CHALLENGES.

(a) AUTHORITY.—Not later than 180 days after the date of enactment of this Act, the Secretary of Energy

shall establish a program to be known as ''Fossil Energy Climate Solutions Challenges'' for carrying out prize competitions described under subsection (d) pursuant to section 24 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3719) relating to the climate and energy.

(b) PRIZE COMMITTEES.—

(1) IN GENERAL.—The Secretary shall assemble a prize committee that shall define the scope and detail of, and provide the requirements for, the prize competitions under this section. Such committee may be composed of—

(A) members from the Office of Fossil Energy, Advanced Research Projects Energy, Office of Technology Transitions, or other offices that most appropriately corresponds with the topic of the prize competition; and

(B) representatives of any other entities, as determined appropriate by the Secretary, including other Federal agencies, State and local governments, and the private sector.

(2) DEFINING TOPIC AREAS.—The prize committee may modify and define the scope of the prize areas described under subsection (c), so long as such

modification is in accordance with descriptions in such subsection.

(3) INCENTIVE FOR PRIZE COMPETITION.—The prize committee for each prize competition shall determine the incentive for the prize competition. In determining the incentive, the committee shall consider—

(A) a cash prize;

(B) access to Government facilities, such as through a lab-embedded entrepreneurship program of the Department of Energy, a cooperative research and development agreement, or other method;

(C) advance market commitments for technologies of use or promise to the Federal Government; and

(D) any other incentive provided for by law.

(4) JUDGING CRITERIA.—The prize committee for each prize competition shall establish judging criteria for the competition that shall include, at a minimum—

(A) potential for the solution to become a commercial product or service or advance knowledge to further the public good;

(B) consideration of how likely the solution is to lead to subsequent research, development, deployment, or manufacturing in the United States;

(C) the degree to which the solution will lower the climate footprint of the United States; and

(D) the degree to which the solution will lower the global climate footprint.

(5) CONSIDERATION.—In carrying out this section, the committee shall take into consideration the best practices provided for in the challenges and prizes toolkit made publicly available on December 15, 2016, by the General Services Administration.

(c) PRIZE COMPETITIONS.—In carrying out the program, the Secretary shall offer prize awards for any of the following:

(1) Solutions to capture carbon emissions from sources that would otherwise be emitted to the atmosphere.

(2) Solutions to convert carbon emissions to a beneficial use that does not result in near-term re-release into the atmosphere, unless such re-release offsets the emission of additional carbon into the atmosphere, such that the net effect of the solution is

to reduce the overall amount of carbon being emitted to the atmosphere.

(3) Other solutions that have potential to achieve reduction in greenhouse gas emissions associated with fossil-based energy production.

(d) ACCEPTANCE OF FUNDS.—In addition to such sums as may be appropriated or otherwise made available to the Secretary to award prizes under this section, the Secretary may accept funds from other Federal agencies, private sector entities, and State and local governments to award prizes under this section. The Secretary may not give any special consideration relating to the selection of awards under the prize competition to any private sector entity or individual in return for a donation to the Secretary or prize committee.

(e) ELIGIBILITY.—Notwithstanding section 24(g)(3) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3719(g)(3)), a group may be eligible for an award under this section if one or more members of such group is a citizen or permanent resident of the United States.

(f) COMPLETION OF PRIZE COMPETITIONS.—The prize competitions carried out under this section shall be completed not later than the date that is 5 years after the program is established under subsection (a).

(g) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated $15,000,000 to carry out this section, to remain available until expended.

SEC. 3115. CARBON DIOXIDE REMOVAL TASK FORCE AND REPORT.

(a) REPORT.—Not later than 180 days after the date of enactment of this Act, the Secretary of Energy (referred to in this section as the ''Secretary''), in consultation with the head of any other relevant Federal agency, shall prepare a report that—

(1) estimates the magnitude of excess carbon dioxide in the atmosphere that will need to be removed by 2050 to achieve net-zero emissions and stabilize the climate;

(2) inventories current and emerging approaches of carbon dioxide removal and evaluates the advantages and disadvantages of each such approach; and

(3) identifies recommendations for legislation, funding, rules, revisions to rules, financing mechanisms, or other policy tools that the Federal Government can use to sufficiently advance the deployment of carbon dioxide removal projects in order to meet, in the aggregate, the magnitude of needed removals

estimated under paragraph (1), including policy tools such as—

(A) grants;

(B) loans or loan guarantees;

(C) public-private partnerships;

(D) direct procurement;

(E) incentives, including subsidized Federal financing mechanisms available to project developers;

(F) advance market commitments;

(G) regulations; and

(H) and any other policy mechanism determined by the Secretary to be beneficial for advancing carbon dioxide removal methods and the deployment of carbon dioxide removal projects.

(b) SUBMISSION; PUBLICATION.—The Secretary shall submit the report prepared under subsection (a) to the Committee on Energy and Natural Resources of the Senate and the Committee on Energy and Commerce of the House of Representatives, and as soon as practicable, make the report publicly available.

(c) EVALUATION.—The Secretary shall—

(1) not later than 2 years after the publication of the report under subsection (a), and every 2 years

thereafter, evaluate the findings and recommendations of the report, taking into consideration any issues and recommendations identified by the task force established under subsection (d); and

(2) after each evaluation under paragraph (1), revise the report as necessary and submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Energy and Commerce of the House of Representatives an updated report.

(d) TASK FORCE.—

(1) ESTABLISHMENT AND DUTIES.—Not later than 60 days after the date of enactment of this Act, the Secretary shall establish a task force to—

(A) identify barriers to advancement of carbon dioxide removal methods and the deployment of carbon dioxide removal projects;

(B) inventory existing or potential Federal legislation, rules, revisions to rules, financing mechanisms, or other policy tools that are capable of advancing carbon dioxide removal methods and the deployment of carbon dioxide removal projects;

(C) assist in drafting the report described in subsection (a) and any updates thereto; and

(D) advise the Secretary on matters pertaining to carbon dioxide removal.

(2) MEMBERS AND SELECTION.—The Secretary shall—

(A) develop criteria for the selection of members to the task force; and

(B) select members for the task force in accordance with the criteria developed under subparagraph (A).

(3) MEETINGS.—The task force shall meet not less than once each year.

(4) EVALUATION.—Not later than 7 years after the date of enactment of this Act, the Secretary shall—

(A) reevaluate the need for the task force; and

(B) submit to Congress a recommendation as to whether the task force should continue.

(e) CARBON DIOXIDE REMOVAL DEFINITION.—In this section, the term ''carbon dioxide removal'' means the capture of carbon dioxide directly from ambient air or, in dissolved form, from seawater, combined with the sequestration of such carbon dioxide, including through direct air capture and sequestration, enhanced carbon mineralization, bioenergy with carbon capture and sequestra-

tion, forest restoration, soil carbon management, and direct ocean capture.

SEC. 3116. NATIONAL ACADEMY OF SCIENCES STUDY ON CARBON CAPTURE TECHNOLOGY.

(a) IN GENERAL.—The Secretary of Energy shall enter into an agreement with the National Academy of Sciences, Engineering, and Medicine to conduct a study evaluating the efficacy of carbon capture and storage technology by industry in reducing emissions and the cost-effectiveness of such technologies. Such study shall include a description of the following:

(1) Analysis of the effectiveness of emissions reductions and cost through implementation of carbon capture as compared to transitioning to other low-emissions technologies.

(2) Differences in performance of various carbon capture technologies and storage methods, including the net amount of carbon dioxide that can be permanently sequestered, the cost (in terms of dollar per ton captured/sequestered) of each technology, and the potential to increase the net amount of carbon dioxide captured/sequestered and lower operational costs.

(3) Barriers, in terms of cost, infrastructure, geology, aquifers, and markets, to ensuring perma-

nent carbon storage including both point of source capture and removal from the atmosphere of captured carbon dioxide.

(4) Analysis of the lifecycle emissions associated with carbon capture technologies, including construction and operation of the carbon capture technology, as well as transport, processing, and injection of carbon dioxide, including the permanence of carbon storage and sequestration, and strategies to reduce those emissions. This should include the amount of carbon dioxide emitted from a facility outfitted with carbon capture technologies that is permanently sequestered compared to the amount of carbon dioxide emitted by the carbon capture process itself.

(5) Evaluation of the impact of carbon capture technologies on air pollution, including particulate emissions and ozone precursors, with specific analysis on the impacts on communities historically overburdened with pollution, including rural communities.

(b) REPORT.—The agreement under subsection (a) shall specify that, not later than 1 year after the date of enactment of this Act, the National Academy of Sciences shall submit to Congress a report containing the results and findings of study authorized under this section.

SEC. 3117. STUDY ON BLUE HYDROGEN TECHNOLOGY.

(a) STUDY.—The Secretary of Energy shall conduct a study to examine opportunities for research and development in integrating blue hydrogen technology in the industrial power sector and how that could enhance the deployment and adoption of carbon capture and storage.

(b) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary of Energy shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report that describes the results of the study under subsection (a).

Subtitle B—Controlling Methane Leaks

SEC. 3201. IMPROVING THE NATURAL GAS DISTRIBUTION SYSTEM.

(a) PROGRAM.—The Secretary of Energy shall establish a grant program to provide financial assistance to States to offset the incremental rate increases paid by low-income households resulting from the implementation of infrastructure replacement, repair, and maintenance programs that are approved by the rate-setting entity and designed to accelerate the necessary replacement, repair, or maintenance of natural gas distribution systems.

(b) DATE OF ELIGIBILITY.—Awards may be provided under this section to offset rate increases described in subsection (a) occurring on or after the date of enactment of this Act.

(c) PRIORITIZATION.—The Secretary shall collaborate with States to prioritize the distribution of grants made under this section. At a minimum, the Secretary shall consider prioritizing the distribution of grants to States which have—

(1) authorized or adopted enhanced infrastructure replacement programs or innovative rate recovery mechanisms, such as infrastructure cost trackers and riders, infrastructure base rate surcharges, deferred regulatory asset programs, and earnings stability mechanisms; and

(2) a viable means for delivering financial assistance to low-income households.

(d) AUDITING AND REPORTING REQUIREMENTS.—The Secretary shall establish auditing and reporting requirements for States with respect to the performance of eligible projects funded pursuant to grants awarded under this section.

(e) PREVAILING WAGES.—All laborers and mechanics employed by contractors or subcontractors in the performance of construction, alteration, or repair work assisted,

in whole or in part, by a grant under this section shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40. With respect to the labor standards in this subsection, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40.

(f) DEFINITIONS.—In this section:

(1) INNOVATIVE RATE RECOVERY MECHANISMS.—The term ''innovative rate recovery mechanisms'' means rate structures that allow State public utility commissions to modify tariffs and recover costs of investments in utility replacement incurred between rate cases.

(2) LOW-INCOME HOUSEHOLD.—The term ''low-income household'' means a household that is eligible to receive payments under section 2605(b)(2) of the Low-Income Home Energy Assistance Act of 1981 (42 U.S.C. 8624(b)(2)).

(g) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out this section $250,000,000 in each of fiscal years 2021 through 2025.

Subtitle C—Eminent Domain Reform

SEC. 3301. MODIFICATIONS TO EXERCISE OF THE RIGHT OF EMINENT DOMAIN BY HOLDER OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY.

(a) REQUIREMENT.—Section 7(h) of the Natural Gas Act (15 U.S.C. 717f(h)) is amended—

(1) by striking ''When any holder'' and inserting the following: '' (1) Subject to paragraph (2), when any holder''; and

(2) by adding at the end the following new paragraphs:

''(2) A holder of a certificate of public convenience and necessity may not exercise the right of eminent domain under paragraph (1) unless the holder—

''(A) obtains all Federal and State permits required by law for the construction and operation of pipeline facilities;

''(B) complies with all environmental conditions appended to the certificate order; and

''(C) is in compliance with subsection (i)(2).

''(3) A holder of a certificate of public convenience and necessity shall be suspended from the exercise of the right of eminent domain under paragraph (1)—

''(A) if the holder requests a material amendment to the certificate, until such time as the conditions in paragraph (4) are satisfied; or

''(B) if a Federal or State permit held by the holder is vacated or remanded, until such time as—

''(i) all vacated or remanded permits are reinstated or reissued to the holder; and

''(ii) the holder complies with all environmental conditions appended to the certificate order.

''(4) A holder of a certificate of public convenience and necessity who requests a material amendment to the certificate and has the exercise of the right of eminent domain suspended under paragraph (3)(A) may not commence a new action or proceeding to exercise the right of eminent domain under paragraph (1) until such time as—

''(A) the Commission issues an amended certificate of public convenience and necessity; and

''(B) the holder—

''(i) obtains all additional Federal and State permits required by law pursuant to the amended certificate; and

''(ii) complies with all environmental conditions appended to the amended certificate order.''.

(b) ACCESS FOR SURVEYS.—Section 7 of the Natural Gas Act (15 U.S.C. 717f) is further amended by adding at the end the following:

''(i)(1) For purposes of subsection (h), the exercise of the right of eminent domain does not include accessing property for purposes of surveying prior to acquiring the property, except in accordance with paragraph (2).

''(2) If a holder of a certificate of public convenience and necessity is unable to agree with the owner of property on access to the property for purposes of surveying, the holder shall enter into the dispute resolution process of the Commission. If dispute resolution fails, or if the property owner refuses to participate in such process, the Commission may, upon a showing by the holder of documented repeated, good faith efforts to work with the property owner to agree on such access, issue an order declaring that, upon a court order, for purposes of the relevant certificate and with respect to the relevant property, the exercise of the right of eminent domain under subsection (h) includes accessing the property, in a limited, non-land-disturbing manner, for purposes of surveying prior to acquiring the property.''.

(c) EFFECTIVE DATE.—The amendments made by this subtitle shall apply—

(1) to any action or proceeding for eminent domain under section 7(h)(1) of the Natural Gas Act, as amended by this subtitle, commencing on or after the date of enactment of this Act; and

(2) to any request for a material amendment to a certificate of public convenience and necessity occurring on or after the date of enactment of this Act.

Subtitle D—Climate Smart Ports

SEC. 3401. CLIMATE SMART PORTS GRANT PROGRAM.

(a) ESTABLISHMENT.—Not later than 6 months after the date of enactment of this section, the Administrator shall establish a program to award grants to eligible entities to purchase, and as applicable install, zero emissions port equipment and technology.

(b) USE OF GRANTS.—

(1) IN GENERAL.—An eligible entity may use a grant awarded under this section to purchase, and as applicable install, zero emissions port equipment and technology.

(2) PROHIBITED USE.—

(A) IN GENERAL.—An eligible entity may not use a grant awarded under this section to

purchase or install fully automated cargo handling equipment or terminal infrastructure that is designed for fully automated cargo handling equipment.

(B) HUMAN-OPERATED ZERO EMISSIONS PORT EQUIPMENT AND TECHNOLOGY.—Nothing in subparagraph (A) prohibits an eligible entity from using a grant awarded under this section to purchase human-operated zero emissions port equipment and technology or infrastructure that supports such human-operated zero emissions port equipment and technology.

(3) COST SHARE.—

(A) IN GENERAL.—Except as provided in subparagraph (B), an eligible entity may not use a grant awarded under this section to cover more than 70 percent of the cost of purchasing, and as applicable installing, zero emissions port equipment and technology.

(B) CERTAIN GRANTS.—With respect to a grant in an amount equal to or greater than $3,000,000, an eligible entity may use such grant to cover not more than 85 percent of the cost of purchasing and installing zero emissions

port equipment and technology if such eligible entity certifies to the Administrator that—

(i) such grant will be used, at least in part, to employ laborers or mechanics to install zero emissions port equipment and technology; and

(ii) such eligible entity is a party to a project labor agreement or requires that each subgrantee of such eligible entity, and any subgrantee thereof at any tier, that performs such installation participate in a project labor agreement.

(4) PROJECT LABOR.—An eligible entity that uses a grant awarded under this section to install zero emissions port equipment and technology shall ensure, to the greatest extent practicable, that any subgrantee of such eligible entity, and any subgrantee thereof at any tier, that carries out such installation employs laborers or mechanics for such installation that—

(A) are domiciled not further than 50 miles from such installation;

(B) are members of the Armed Forces serving on active duty, separated from active duty, or retired from active duty;

(C) have been incarcerated or served time in a juvenile detention facility; or

(D) have a disability.

(c) WAGES.—

(1) IN GENERAL.—All laborers and mechanics employed by a subgrantee of an eligible entity, and any subgrantee thereof at any tier, to perform construction, alteration, installation, or repair work that is assisted, in whole or in part, by a grant awarded under this section shall be paid wages at rates not less than those prevailing on similar construction, alteration, installation, or repair work in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code.

(2) LABOR STANDARDS.—With respect to the labor standards in this subsection, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40, United States Code.

(d) APPLICATION.—

(1) IN GENERAL.—To be eligible to be awarded a grant under this section, an eligible entity shall submit to the Administrator an application at such

time, in such manner, and containing such information as the Administrator may require.

(2) PRIORITY.—The Administrator shall prioritize awarding grants under this section to eligible entities based on the following:

(A) The degree to which the proposed use of the grant will—

(i) reduce greenhouse gas emissions;

(ii) reduce emissions of any criteria pollutant and precursor thereof;

(iii) reduce hazardous air pollutant emissions; and

(iv) reduce public health disparities in communities that receive a disproportionate quantity of air pollution from a port.

(B) The amount of matching, non-Federal funds expected to be used by an applicant to purchase, and as applicable install, zero emissions port equipment and technology.

(C) Whether the applicant will use such grant to purchase, and as applicable install, zero emissions port equipment and technology that is produced in the United States.

(D) As applicable, whether the applicant will meet the utilization requirements for registered apprentices established by the Secretary of Labor or a State Apprenticeship Agency.

(E) As applicable, whether the applicant will recruit and retain skilled workers through a State-approved joint labor management apprenticeship program.

(e) OUTREACH.—

(1) IN GENERAL.—Not later than 90 days after funds are made available to carry out this section, the Administrator shall develop and carry out an educational outreach program to promote and explain the grant program established under subsection (a) to prospective grant recipients.

(2) PROGRAM COMPONENTS.—In carrying out the outreach program developed under paragraph (1), the Administrator shall—

(A) inform prospective grant recipients how to apply for a grant awarded under this section;

(B) describe to prospective grant recipients the benefits of available zero emissions port equipment and technology;

(C) explain to prospective grant recipients the benefits of participating in the grant program established under this section; and

(D) facilitate the sharing of best practices and lessons learned between grant recipients and prospective grant recipients with respect to how to apply for and use grants awarded under this section.

(f) REPORTS.—

(1) REPORT TO ADMINISTRATOR.—Not later than 90 days after the date on which an eligible entity uses a grant awarded under this section, such eligible entity shall submit to the Administrator a report containing such information as the Administrator shall require.

(2) ANNUAL REPORT TO CONGRESS.—Not later than January 31, 2021, and annually thereafter, the Administrator shall submit to Congress and make available on the website of the Environmental Protection Agency a report that includes, with respect to each grant awarded under this section during the preceding calendar year—

(A) the name and location of the eligible entity that was awarded such grant;

(B) the amount of such grant that the eligible entity was awarded;

(C) the name and location of the port where the zero emissions port equipment and technology that was purchased, and as applicable installed, with such grant is used;

(D) an estimate of the impact of such zero emissions port equipment and technology on reducing—

(i) greenhouse gas emissions;

(ii) emissions of criteria pollutants and precursors thereof;

(iii) hazardous air pollutant emissions; and

(iv) public health disparities; and

(E) any other information the Administrator determines necessary to understand the impact of grants awarded under this section.

(g) AUTHORIZATION OF APPROPRIATIONS.—

(1) IN GENERAL.—There is authorized to be appropriated to carry out this section $1,000,000,000 for each of fiscal years 2021 through 2030.

(2) NONATTAINMENT AREAS.—To the extent practicable, at least 25 percent of amounts made

available to carry out this section in each fiscal year shall be used to award grants to eligible entities to provide zero emissions port equipment and technology to ports that are in nonattainment areas.

(h) DEFINITIONS.—In this section:

(1) ACTIVE DUTY.— The term ''active duty'' has the meaning given such term in section 101 of title 10, United States Code.

(2) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of the Environmental Protection Agency.

(3) ALTERNATIVE EMISSIONS CONTROL TECHNOLOGY.—The term ''alternative emissions control technology'' means a technology, technique, or measure that—

(A) captures the emissions of nitrogen oxide, particulate matter, reactive organic compounds, and greenhouse gases from the auxiliary engine and auxiliary boiler of an ocean-going vessel at berth;

(B) is verified or approved by a State or Federal air quality regulatory agency;

(C) the use of which achieves at least the equivalent reduction of emissions as the use of shore power for an ocean-going vessel at berth;

(D) the use of which results in reducing emissions of the auxiliary engine of an ocean-going vessel at berth to a rate of less than—

(i) 2.8 g/kW-hr for nitrogen oxide;

(ii) 0.03 g/kW-hr for particulate matter 2.5; and

(iii) 0.1 g/kW-hr for reactive organic compounds; and

(E) reduces the emissions of the auxiliary engine and boiler of an ocean-going vessel at berth by at least 80 percent of the default emissions rate, which is 13.8 g.

(4) CRITERIA POLLUTANT.—The term ''criteria pollutant'' means each of the following:

(A) Ground-level ozone.

(B) Particulate matter.

(C) Carbon monoxide.

(D) Lead.

(E) Sulfur dioxide.

(F) Nitrogen dioxide.

(5) DISTRIBUTED ENERGY RESOURCE.—

(A) IN GENERAL.—The term ''distributed energy resource'' means an energy resource that—

(i) is located on or near a customer site;

(ii) is operated on the customer side of the electric meter; and

(iii) is interconnected with the electric grid.

(B) INCLUSIONS.—The term ''distributed energy resource'' includes—

(i) clean electric generation;

(ii) customer electric efficiency measures;

(iii) electric demand flexibility; and

(iv) energy storage.

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

(A) a port authority;

(B) a State, regional, local, or Tribal agency that has jurisdiction over a port authority or a port;

(C) an air pollution control district or air quality management district; or

(D) a private or nonprofit entity, applying for a grant awarded under this section in collaboration with another entity described in sub-

paragraphs (A) through (C), that owns or uses cargo or transportation equipment at a port.

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

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

(B) uses a mechanical, electrical, chemical, electrochemical, or thermal process to store energy that—

(i) was generated at an earlier time for use at a later time; or

(ii) was generated from a mechanical process, and would otherwise be wasted, for delivery at a later time.

(8) FULLY AUTOMATED CARGO HANDLING EQUIPMENT.—The term ''fully automated cargo handling equipment'' means cargo handling equipment that—

(A) is remotely operated or remotely monitored; and

(B) with respect to the use of such equipment, does not require the exercise of human intervention or control.

(9) NONATTAINMENT AREA.—The term ''nonattainment area'' has the meaning given such term in section 171 of the Clean Air Act (42 U.S.C. 7501).

(10) PORT.—The term ''port'' includes a maritime port and an inland port.

(11) PORT AUTHORITY.—The term ''port authority'' means a governmental or quasi-governmental authority formed by a legislative body to operate a port.

(12) PROJECT LABOR AGREEMENT.—The term ''project labor agreement'' means a pre-hire collective bargaining agreement with one or more labor organization that establishes the terms and conditions of employment for a specific construction project and is described in section 8(f) of the National Labor Relations Act (29 U.S.C. 158(f)).

(13) REGISTERED APPRENTICE.—The term ''registered apprentice'' means a person who is participating in a registered apprenticeship program.

(14) REGISTERED APPRENTICESHIP PROGRAM.—The term ''registered apprenticeship program'' means a program registered pursuant to the Act of August 16, 1937 (commonly known as the

''National Apprenticeship Act''; 50 Stat. 664, chapter 663; 29 U.S.C. 50 et seq.).

(15) SHORE POWER.—The term ''shore power'' means the provision of shoreside electrical power to a ship at berth that has shut down main and auxiliary engines.

(16) STATE APPRENTICESHIP AGENCY.—The term ''State Apprenticeship Agency'' has the meaning given such term in section 29.2 of title 29, Code of Federal Regulations (as in effect on January 1, 2020).

(17) ZERO EMISSIONS PORT EQUIPMENT AND TECHNOLOGY.—

(A) IN GENERAL.—The term ''zero emissions port equipment and technology'' means equipment and technology, including the equipment and technology described in subparagraph (B), that—

(i) is used at a port; and

(ii)(I) produces zero exhaust emissions of—

(aa) any criteria pollutant and precursor thereof; and

(bb) any greenhouse gas, other than water vapor; or

(II) captures 100 percent of the exhaust emissions produced by an ocean-going vessel at berth.

(B) EQUIPMENT AND TECHNOLOGY DESCRIBED.—The equipment and technology described in this subparagraph is the following:

(i) Any equipment that handles cargo.

(ii) A drayage truck that transports cargo.

(iii) A train that transports cargo.

(iv) Port harbor craft.

(v) A distributed energy resource.

(vi) An energy storage system.

(vii) Electrical charging infrastructure.

(viii) Shore power or an alternative emissions control technology.

(ix) An electric transport refrigeration unit.

Subtitle E—Interagency Task Force on Short-Lived Climate Pollutant Mitigation

SEC. 3501. INTERAGENCY TASK FORCE ON SHORT-LIVED CLIMATE POLLUTANT MITIGATION.

(a) ESTABLISHMENT.—Not later than 90 days after the date of enactment of this Act, the President shall establish a task force, to be known as the Interagency Task Force on Short-Lived Climate Pollutant Mitigation.

(b) MEMBERSHIP.—The members of the Task Force shall include the head (or a designee thereof) of each of—

(1) the Department of Agriculture;

(2) the Department of Commerce;

(3) the Department of Defense;

(4) the Department of Energy;

(5) the Department of Health and Human Services;

(6) the Department of the Interior;

(7) the Department of State;

(8) the Department of Transportation;

(9) the Environmental Protection Agency;

(10) the National Oceanic and Atmospheric Administration;

(11) the Council on Environmental Quality;

(12) the United States Agency for International Development; and

(13) any other Federal agency the President determines appropriate.

(c) DUTIES.—The Task Force shall—

(1) review the policy recommendations made by—

(A) the Intergovernmental Panel on Climate Change;

(B) the United States Climate Alliance;

(C) the Interagency Strategy to Reduce Methane Emissions;

(D) the Council on Climate Preparedness and Resilience; and

(E) the Clean Cooking Alliance;

(2) develop an action plan to reduce short-lived climate pollutants that incorporates any appropriate proposals or recommendations made by the entities referred to in paragraph (1) that are relevant to short-lived climate pollutants;

(3) identify any Federal program that is, or could be, relevant to reducing short-lived climate pollutants—

(A) in the United States; or

(B) worldwide;

(4) identify overlapping and duplicative Federal programs addressing short-lived climate pollutants that would benefit from consolidation and streamlining;

(5) identify gaps and serious deficiencies in Federal programs targeted at short-lived climate pollutants, including gaps and deficiencies that can be addressed through a combination of assessment, scientific research, monitoring, and technological development activities, with an emphasis on—

(A) industry standards; and

(B) public-private partnerships;

(6) in developing recommendations, consult with affected stakeholders in private industry; and

(7) not later than 18 months after the date of enactment of this Act, submit to the Committee on Energy and Commerce of the House of Representatives and the Committee on Environment and Public Works of the Senate a report describing the findings and recommendations resulting from the activities described in paragraphs (1) through (6).

Subtitle F—Black Carbon

SEC. 3601. REDUCTION OF BLACK CARBON EMISSIONS.

(a) COMPREHENSIVE PLAN.—

(1) IN GENERAL.—The Administrator of the Environmental Protection Agency (in this section referred to as the ''Administrator''), in consultation with the Secretary of Energy, the Secretary of State, the Secretary of Transportation, the Secretary of Commerce, and the Commandant of the Coast Guard, shall develop a comprehensive plan to reduce black carbon emissions from ships based on appropriate emissions data from oceangoing vessels. The plan shall provide for such reduction through—

(A) a clean freight partnership;

(B) limits on black carbon emissions; and

(C) efforts that include protection of access to critical fuel shipments and emergency needs of coastal communities.

(2) ROADMAP.—A principal objective of the plan developed pursuant to paragraph (1) shall be the establishment, in coordination with the Secretary of State, of a roadmap for helping countries to reduce fine-particle (PM2.5) and black carbon emissions in the shipping sector through—

(A) the installation of advanced emissions controls;

(B) the reduction of sulfur content in fuels; and

(C) the adoption of black carbon control policies.

(b) BLACK CARBON EMISSIONS REDUCTION GOALS.—The Administrator, in coordination with the Secretary of State, and other relevant Federal agencies, shall—

(1) lead an effort to reduce black carbon through an Arctic-wide aspirational black carbon goal; and

(2) encourage observers of the Arctic Council (including India and China) to adopt mitigation plans consistent with the findings and recommendations of the Arctic Council's Framework for Action on Black Carbon and Methane.

(c) CLIMATE AND CLEAN AIR COALITION.—The Administrator, in coordination with the Secretary of State, is encouraged to work with the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants to craft specific financing mechanisms for the incremental cost of international black carbon mitigation activities.

(d) BLACK CARBON MITIGATION ACTIVITIES.—

(1) PRIORITIZATION.—The Administrator of the United States Agency for International Development, in cooperation with the Administrator, shall—

(A) encourage black carbon mitigation activities as part of official development assistance and programmatic activities;

(B) give special emphasis to projects that produce substantial environmental, gender, livelihood, and public health benefits, including support for clean-burning cookstoves and fuels; and

(C) work with the Global Alliance for Clean Cookstoves to help developing nations establish thriving markets for clean and efficient cooking solutions.

(2) EMISSIONS REDUCTIONS.—The Secretary of State, in collaboration with the Administrator, the Secretary of Energy, and the Secretary of Transportation, shall provide aid to international efforts to reduce black carbon emissions from diesel trucks and ships, 2-stroke engines, diesel generators, and industrial processes by providing technical assistance—

(A) to help developing nations lower the sulfur content of diesel fuels;

(B) to expand access to diesel particulate filters;

(C) to provide vehicle manufacturers with low- and zero-emission engine designs;

(D) to deploy on-road, off-road, and shoreside infrastructure to support zero-emission engine technologies;

(E) to develop other mitigation activities, including energy efficiency alternatives for generators and industrial processes; and

(F) to reduce ammonia emissions from agriculture.

TITLE IV—NUCLEAR ENERGY

Subtitle A—Advanced Nuclear Fuel Availability

SEC. 4101. PROGRAM.

(a) ESTABLISHMENT.—The Secretary shall establish and carry out, through the Office of Nuclear Energy, a program to support the availability of HA–LEU for civilian domestic demonstration and commercial use.

(b) PROGRAM ELEMENTS.—In carrying out the program under subsection (a), the Secretary—

(1) shall develop, in consultation with the Commission, criticality benchmark data to assist the Commission in—

(A) the licensing and regulation of category II spent nuclear material fuel fabrication

and enrichment facilities under part 70 of title 10, Code of Federal Regulations; and

(B) certification of transportation packages under part 71 of title 10, Code of Federal Regulations;

(2) may conduct research and development, and provide financial assistance to assist commercial entities, to design and license transportation packages for HA–LEU, including canisters for metal, gas, and other HA–LEU compositions;

(3) shall, to the extent practicable—

(A) by January 1, 2024, have commercial entities submit such transportation package designs to the Commission for certification by the Commission under part 71 of title 10, Code of Federal Regulations; and

(B) encourage the Commission to have such transportation package designs so certified by the Commission by January 1, 2026;

(4) shall consider options for acquiring or providing HA–LEU from a stockpile of uranium owned by the Department, or using enrichment technology, to make available to members of the consortium established pursuant to paragraph (6) for commercial use or demonstration projects, taking into account

cost and amount of time required, and prioritizing methods that would produce usable HA–LEU the quickest, including options for acquiring or providing HA–LEU—

(A) that—

(i) directly meets the needs of an end user; and

(ii) has been previously used or fabricated for another purpose;

(B) that meets the needs of an end user after having radioactive or other contaminants that resulted from a previous use or fabrication of the fuel for research, development, demonstration, or deployment activities of the Department removed;

(C) that is produced from high-enriched uranium that is blended with lower assay uranium to become HA–LEU to meet the needs of an end user;

(D) that is produced by United States or foreign-owned commercial entities; or

(E) that does not require extraction of uranium or development of uranium from lands managed by the Federal Government, cause harm to the natural or cultural resources of

Tribal communities or sovereign Native Nations, or result in degraded ground or surface water quality on publicly managed or privately owned lands;

(5) not later than 1 year after the date of enactment of this Act, and biennially thereafter, shall conduct a survey of stakeholders to estimate the quantity of HA–LEU necessary for domestic commercial use for each of the 5 subsequent years;

(6) shall establish a consortium, which may include entities involved in any stage of the nuclear fuel cycle, to partner with the Department to support the availability of HA–LEU for civilian domestic demonstration and commercial use, including by—

(A) providing information to the Secretary for purposes of surveys conducted under paragraph (5);

(B) purchasing HA–LEU made available to members of the consortium by the Secretary under the program; and

(C) carrying out demonstration projects using HA–LEU awarded by the Secretary under the program;

(7) shall, prior to acquiring or providing HA–LEU under paragraph (8), in coordination with the consortium established pursuant to paragraph (6), develop a schedule for cost recovery of HA–LEU made available to members of the consortium using HA–LEU for commercial use pursuant to paragraph (8);

(8) shall, beginning not later than 3 years after the establishment of a consortium under paragraph (6), have the capability to acquire or provide HA–LEU, in order to make such HA–LEU available to members of the consortium beginning not later than January 1, 2026, in amounts that are consistent, to the extent practicable, with—

(A) the quantities estimated under the surveys conducted under paragraph (5); plus

(B) the quantities necessary for demonstration projects carried out under the program, as determined by the Secretary; and

(9) shall, for advanced reactor demonstration projects, determine awardees of HA–LEU under this subtitle through a merit-based, competitive selection process.

(c) APPLICABILITY OF USEC PRIVATIZATION ACT.—

(1) SALE OR TRANSFER TO CONSORTIUM.—The requirements of subparagraphs (A) and (C) of section 3112(d)(2) of the USEC Privatization Act (42 U.S.C. 2297h–10(d)(2)) shall apply to a sale or transfer of HA–LEU for commercial use by the Secretary to a member of the consortium under this section.

(2) DEMONSTRATION.—HA–LEU made available to members of the consortium established pursuant to subsection (b)(6) for demonstration projects shall remain the property of the Department, which shall be responsible for the storage, use, and disposition of all radioactive waste created by the irradiation, processing, or purification of such uranium, and shall not be treated as a sale or transfer of uranium subject to sections 3112 and 3113 of the USEC Privatization Act (42 U.S.C. 2297h–10; 42 U.S.C. 2297h–11).

(d) DOE ACQUISITION OF HA–LEU.—The Secretary may not make commitments under this section (including cooperative agreements (used in accordance with section 6305 of title 31, United States Code), purchase agreements, guarantees, leases, service contracts, or any other type of commitment) for the purchase or other acquisition of HA–LEU unless funds are specifically pro-

vided for such purposes in advance in subsequent appropriations Acts, and only to the extent that the full extent of anticipated costs stemming from such commitments is recorded as an obligation up front and in full at the time it is made.

(e) SUNSET.—The authority of the Secretary to carry out the program under this section shall expire on the earlier of—

(1) September 30, 2034; or

(2) 90 days after the date on which HA–LEU is available to provide a reliable and adequate supply for civilian domestic advanced nuclear reactors in the commercial market.

(f) LIMITATION.—The Secretary shall not barter or otherwise sell or transfer uranium in any form in exchange for services relating to the final disposition of radioactive waste from uranium that is made available under this section.

SEC. 4102. REPORTS TO CONGRESS.

(a) COMMISSION REPORT ON NECESSARY REGULATORY UPDATES.—Not later than 12 months after the date of enactment of this Act, the Commission shall submit to Congress a report that includes—

(1) identification of updates to regulations, certifications, and other regulatory policies that the

Commission determines are necessary in order for HA–LEU to be commercially available, including—

(A) guidance for material control and accountability of category II special nuclear material;

(B) certifications relating to transportation packaging for HA–LEU; and

(C) licensing of enrichment, conversion, and fuel fabrication facilities for HA–LEU, and associated physical security plans for such facilities;

(2) a description of such updates; and

(3) a timeline to complete such updates.

(b) DOE REPORT ON PROGRAM TO SUPPORT THE AVAILABILITY OF HA–LEU FOR CIVILIAN DOMESTIC DEMONSTRATION AND COMMERCIAL USE.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this section, the Secretary shall submit to Congress a report that describes actions proposed to be carried out by the Secretary under the program described in section 4101(a).

(2) COORDINATION AND STAKEHOLDER INPUT.—In developing the report under this subsection, the Secretary shall consult with—

(A) the Nuclear Regulatory Commission;

(B) the National Nuclear Security Administration;

(C) the National Laboratories;

(D) institutions of higher education;

(E) a diverse group of entities from the nuclear energy industry;

(F) a diverse group of technology developers;

(G) experts in nuclear nonproliferation, environmental safety, public health and safety, and economics; and

(H) members of the consortium created under section 4101(b)(6).

(3) COST AND SCHEDULE ESTIMATES.—The report under this subsection shall include estimated costs, budgets, and timeframes for all activities carried out under this subtitle.

(4) REQUIRED EVALUATIONS.—The report under this subsection shall evaluate—

(A) the actions required to establish and carry out the program under section 4101(a) and the cost of such actions, including with respect to—

(i) proposed preliminary terms for contracting between the Department and recipients of HA-LEU under the program (including guidelines defining the roles and responsibilities between the Department and the recipient); and

(ii) the potential to coordinate with recipients of HA-LEU under the program regarding—

(I) fuel fabrication; and

(II) fuel transport;

(B) the potential sources and fuel forms available to provide uranium for the program under section 4101(a);

(C) options to coordinate the program under section 4101(a) with the operation of the versatile, reactor-based fast neutron source under section 959A of the Energy Policy Act of 2005 (as added by this title);

(D) the ability of uranium producers to provide materials for advanced nuclear reactor fuel;

(E) any associated legal, regulatory, and policy issues that should be addressed to enable—

(i) implementation of the program under section 4101(a); and

(ii) the establishment of an industry capable of providing HA–LEU; and

(F) any research and development plans to develop criticality benchmark data under section 4101(b)(1), if needed.

(c) ALTERNATE FUELS REPORT.—Not later than 180 days after the date of enactment of this Act, the Secretary shall, after consulting with relevant entities, including National Laboratories, institutions of higher education, and technology developers, submit to Congress a report identifying any and all options for providing nuclear material, containing isotopes other than the uranium-235 isotope, such as uranium-233 and thorium-232 to be used as fuel for advanced nuclear reactor research, development, demonstration, or commercial application purposes.

SEC. 4103. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to carry out this subtitle—

(1) $31,500,000 for fiscal year 2021;

(2) $33,075,000 for fiscal year 2022;

(3) $34,728,750 for fiscal year 2023;

(4) $36,465,188 for fiscal year 2024; and

(5) $38,288,447 for fiscal year 2025.

SEC. 4104. DEFINITIONS.

In this subtitle:

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

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

(3) HA–LEU.—The term ''HA–LEU'' means high-assay low-enriched uranium.

(4) HIGH-ASSAY LOW-ENRICHED URANIUM.—The term ''high-assay low-enriched uranium'' means uranium having an assay greater than 5.0 weight percent and less than 20.0 weight percent enrichment of the uranium-235 isotope.

(5) HIGH-ENRICHED URANIUM.—The term ''high-enriched uranium'' means uranium with an assay of 20.0 weight percent enrichment or more of the uranium-235 isotope.

(6) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

Subtitle B—Nuclear Energy Leadership Act

SEC. 4201. DEFINITIONS.

Section 951(b) of the Energy Policy Act of 2005 (42 U.S.C. 16271(b)) is amended—

(1) by amending paragraph (1) to read as follows:

''(1) ADVANCED NUCLEAR REACTOR.—The term 'advanced nuclear reactor' means—

''(A) a nuclear fission reactor, including a prototype plant (as defined in sections 50.2 and 52.1 of title 10, Code of Federal Regulations (or successor regulations)), with significant improvements compared to reactors operating on the date of enactment of the Clean Economy Jobs and Innovation Act, including improvements such as—

''(i) additional inherent safety features;

''(ii) lower waste yields;

''(iii) improved fuel and material performance;

''(iv) increased tolerance to loss of fuel cooling;

''(v) enhanced reliability;

''(vi) increased proliferation resistance;

''(vii) increased thermal efficiency;

''(viii) reduced consumption of cooling water and other environmental impacts;

"(ix) the ability to integrate into electric applications and nonelectric applications;

"(x) modular sizes to allow for deployment that corresponds with the demand for electricity or process heat;

"(xi) operational flexibility to respond to changes in demand for electricity or process heat and to complement integration with intermittent renewable energy or energy storage; or

"(xii) improved resilience; and

"(B) a fusion reactor."; and

(2) by adding at the end the following:

"(7) INSTITUTION OF HIGHER EDUCATION.—The term 'institution of higher education' has the meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a))."

SEC. 4202. NUCLEAR ENERGY RESEARCH, DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION PROGRAMS.

(a) REACTOR CONCEPTS RESEARCH, DEVELOPMENT, AND DEMONSTRATION.—Section 952 of the Energy Policy

Act of 2005 (42 U.S.C. 16272) is amended to read as follows:

"SEC. 952. REACTOR CONCEPTS RESEARCH, DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION.

"(a) SUSTAINABILITY PROGRAM FOR LIGHT WATER REACTORS.—

"(1) IN GENERAL.—The Secretary shall carry out a program of research, development, demonstration, and commercial application to support existing operating nuclear power plants which shall address technologies to modernize and improve, with respect to such plants—

"(A) reliability;

"(B) capacity;

"(C) component aging;

"(D) safety;

"(E) physical security and security costs;

"(F) plant lifetime;

"(G) operations and maintenance costs, including by utilizing risk-informed systems analysis;

"(H) the ability for plants to operate flexibly;

"(I) nuclear hybrid energy system applications described in subsection (c);

"(J) efficiency;

"(K) environmental impacts; and

"(L) resilience.

"(2) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out the program under this subsection—

"(A) $55,000,000 for fiscal year 2021;

"(B) $57,750,000 for fiscal year 2022;

"(C) $60,637,500 for fiscal year 2023;

"(D) $63,669,375 for fiscal year 2024; and

"(E) $66,852,844 for fiscal year 2025.

"(3) REPORT.—The Secretary shall submit annually a public report to the Congressional Committees of Jurisdiction documenting funds spent under the program, including those that could benefit the entirety of the existing reactor fleet, such as with respect to aging management and related sustainability concerns, and identifying funds awarded to private entities.

"(b) ADVANCED REACTOR TECHNOLOGIES.—

''(1) IN GENERAL.—The Secretary shall carry out a program of research, development, demonstration, and commercial application to support advanced reactor technologies.

''(2) REQUIREMENTS.—In carrying out the program under this subsection, the Secretary shall—

''(A) prioritize designs for advanced nuclear reactors that are proliferation resistant and passively safe, including designs that, compared to reactors operating on the date of enactment of the Clean Economy Jobs and Innovation Act—

''(i) are economically competitive with other electric power generation plants;

''(ii) have higher efficiency, lower cost, less environmental impacts, increased resilience, and improved safety;

''(iii) use fuels that are proliferation-resistant and have reduced production of high-level waste per unit of output; and

''(iv) use advanced instrumentation and monitoring systems;

''(B) consult with the Nuclear Regulatory Commission on appropriate metrics to consider for the criteria specified in subparagraph (A);

"(C) support research and development to resolve materials challenges relating to extreme environments, including environments that contain high levels of—

"(i) radiation fluence;

"(ii) temperature;

"(iii) pressure; and

"(iv) corrosion;

"(D) support research and development to aid in the qualification of advanced fuels, including fabrication techniques;

"(E) support activities that address near-term challenges in modeling and simulation to enable accelerated design of and licensing of advanced nuclear reactors, including the identification of tools and methodologies for validating such modeling and simulation efforts;

"(F) develop technologies, including technologies to manage, reduce, or reuse nuclear waste;

"(G) ensure that nuclear research infrastructure is maintained or constructed, including—

"(i) currently operational research reactors at the National Laboratories and institutions of higher education;

"(ii) hot cell research facilities;

"(iii) a versatile fast neutron source; and

"(iv) advanced coolant testing facilities, including coolants such as lead, sodium, gas, and molten salt;

"(H) improve scientific understanding of nonlight water coolant physics and chemistry;

"(I) develop advanced sensors and control systems, including the identification of tools and methodologies for validating such sensors and systems;

"(J) investigate advanced manufacturing and advanced construction techniques and materials to reduce the cost of advanced nuclear reactors, including the use of digital twins and of strategies to implement project and construction management best practices, and study the effects of radiation and corrosion on materials created with these techniques;

"(K) consult with the Administrator of the National Nuclear Security Administration to in-

tegrate reactor safeguards and security into design;

''(L) support efforts to reduce any technical barriers that would prevent commercial application of advanced nuclear energy systems; and

''(M) develop various safety analyses and emergency preparedness and response methodologies.

''(3) COORDINATION.—The Secretary shall coordinate with individuals engaged in the private sector and individuals who are experts in nuclear nonproliferation, environmental and public health and safety, and economics to advance the development of various designs of advanced nuclear reactors. In carrying out this paragraph, the Secretary shall convene an advisory committee of such individuals and such committee shall submit annually a report to the relevant committees of Congress with respect to the progress of the program.

''(4) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out the program under this subsection $55,000,000 for each of fiscal years 2021 through 2025.

''(c) NUCLEAR HYBRID ENERGY SYSTEMS RESEARCH, DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION PROGRAM.—

''(1) IN GENERAL.—The Secretary shall carry out a program of research, development, demonstration, and commercial application to develop nuclear hybrid energy systems, composed of 2 or more co-located or jointly operated subsystems of energy generation, energy storage, or other technologies and in which not less than 1 such subsystem is a nuclear energy system, to reduce greenhouse gas emissions in both the power and nonpower sectors.

''(2) COORDINATION.—In carrying out the program under paragraph (1), the Secretary shall coordinate with relevant program offices within the Department of Energy.

''(3) FOCUS AREAS.—The program under paragraph (1) may include research, development, demonstration, or commercial application of nuclear hybrid energy systems with respect to—

''(A) desalination of water;

''(B) hydrogen or other liquid and gaseous fuel or chemical production;

''(C) heat for industrial processes;

''(D) district heating;

"(E) heat or electricity generation and storage;

"(F) carbon capture, use, utilization, and storage;

"(G) microgrid or island applications;

"(H) integrated systems modeling, analysis, and optimization, inclusive of different configurations of hybrid energy systems; and

"(I) integrated design, planning, building, and operation of systems with existing infrastructure, including interconnection requirements with the electric grid, as appropriate.

"(4) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out the program under this subsection—

"(A) $52,500,000 for fiscal year 2021;

"(B) $55,125,000 for fiscal year 2022;

"(C) $57,881,250 for fiscal year 2023;

"(D) $60,775,313 for fiscal year 2024; and

"(E) $63,814,078 for fiscal year 2025.".

(b) FUEL CYCLE RESEARCH AND DEVELOPMENT.—Section 953 of the Energy Policy Act of 2005 (42 U.S.C. 16273) is amended to read as follows:

"SEC. 953. FUEL CYCLE RESEARCH, DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION.

"(a) USED NUCLEAR FUEL RESEARCH, DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION.—

"(1) IN GENERAL.—The Secretary shall conduct an advanced fuel cycle research, development, demonstration, and commercial application program that improves fuel cycle performance and supports a variety of options for used nuclear fuel storage, use, and disposal, including advanced nuclear reactor and non-reactor concepts (such as radioisotope power systems), while minimizing environmental and public health and safety impacts, including—

"(A) dry cask storage;

"(B) consolidated interim storage;

"(C) deep geological storage and disposal, including mined repository, and other technologies;

"(D) used nuclear fuel transportation;

"(E) integrated waste management systems;

"(F) vitrification;

"(G) fuel recycling and transmutation technologies, including advanced reprocessing

technologies such as electrochemical and molten salt technologies, and advanced redox extraction technologies;

"(H) advanced materials to be used in subparagraphs (A) through (G); and

"(I) other areas as determined by the Secretary.

"(2) REQUIREMENTS.—In carrying out the program under this subsection, the Secretary shall—

"(A) ensure all activities and designs incorporate state of the art safeguards technologies and techniques to reduce risk of proliferation;

"(B) consult with the Administrator of the National Nuclear Security Administration to integrate safeguards and security by design;

"(C) consider the potential benefits and other impacts of those activities for civilian nuclear applications, environmental health and safety, and national security, including consideration of public consent; and

"(D) consider the economic viability of all activities and designs.

"(3) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Sec-

retary to carry out the program under this subsection—

"(A) $91,875,000 for fiscal year 2021;

"(B) $96,468,750 for fiscal year 2022;

"(C) $101,292,188 for fiscal year 2023;

"(D) $106,356,797 for fiscal year 2024; and

"(E) $111,674,637 for fiscal year 2025.

"(b) ADVANCED FUELS.—

"(1) IN GENERAL.—The Secretary shall conduct an advanced fuels research, development, demonstration, and commercial application program on next-generation light water reactor and advanced reactor fuels that demonstrate the potential for improved—

"(A) performance;

"(B) accident tolerance;

"(C) proliferation resistance;

"(D) use of resources;

"(E) environmental impact; and

"(F) economics.

"(2) REQUIREMENTS.—In carrying out the program under this subsection, the Secretary shall—

"(A) focus on the development of advanced technology fuels, including fabrication tech-

niques, that offer improved accident-tolerance and economic performance with the goal of initial commercial application by December 31, 2025; and

''(B) cooperate with private industry and with institutions of higher education through the Nuclear Energy University and Integrated Research Projects programs of the Department.

''(3) REPORT.—Not later than 180 days after the date of enactment of this section, 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 report that describes how the technologies and concepts studied under this program would impact reactor economics, the fuel cycle, operations, safety, proliferation, and the environment.

''(4) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out the program under this subsection—

''(A) $133,000,000 for fiscal year 2021;

''(B) $139,650,000 for fiscal year 2022;

''(C) $146,632,500 for fiscal year 2023;

''(D) $153,964,125 for fiscal year 2024; and

''(E) $161,662,331 for fiscal year 2025.''.

(c) NUCLEAR SCIENCE AND ENGINEERING SUPPORT.—Section 954 of the Energy Policy Act of 2005 (42 U.S.C. 16274) is amended—

(1) in the section heading, by striking ''**UNIVERSITY NUCLEAR**'' and inserting ''**NUCLEAR**'';

(2) in subsection (b)—

(A) in the matter preceding paragraph (1), by striking ''this section'' and inserting ''this subsection''; and

(B) by redesignating paragraphs (1) through (5) as subparagraphs (A) through (E), respectively, and indenting appropriately;

(3) in subsection (c), by redesignating paragraphs (1) and (2) as subparagraphs (A) and (B), respectively, and indenting appropriately;

(4) in subsection (d)—

(A) in the matter preceding paragraph (1), by striking ''this section'' and inserting ''this subsection''; and

(B) by redesignating paragraphs (1) through (4) as subparagraphs (A) through (D), respectively, and indenting appropriately;

(5) in subsection (e), by striking ''this section'' and inserting ''this subsection'';

(6) in subsection (f)—

(A) by striking ''this section'' and inserting ''this subsection''; and

(B) by striking ''subsection (b)(2)'' and inserting ''paragraph (2)(B)'';

(7) by redesignating subsections (a) through (d) as paragraphs (1) through (4), respectively, and indenting appropriately;

(8) by redesignating subsections (e) and (f) as paragraphs (7) and (8), respectively;

(9) by inserting after paragraph (4) (as so redesignated) the following:

''(5) RADIOLOGICAL FACILITIES MANAGEMENT.—

''(A) IN GENERAL.—The Secretary shall carry out a program under which the Secretary shall provide project management, technical support, quality engineering and inspection, and nuclear material handling support to research reactors located at universities.

''(B) AUTHORIZATION OF APPROPRIATIONS.—Of any amounts appropriated to carry out the program under this subsection, there

are authorized to be appropriated to the Secretary to carry out the program under this paragraph $20,000,000 for each of fiscal years 2021 through 2030.

''(6) NUCLEAR ENERGY UNIVERSITY PROGRAM.—In carrying out the programs under this section, the Department shall allocate 20 percent of funds appropriated to nuclear energy research and development programs annually to fund university-led research and university infrastructure projects through an open, competitive solicitation process.'';

(10) by inserting before paragraph (1) (as so redesignated) the following:

''(a) UNIVERSITY NUCLEAR SCIENCE AND ENGINEERING SUPPORT.—''; and

(11) by adding at the end the following:

''(b) NUCLEAR ENERGY APPRENTICESHIP SUBPROGRAM.—

''(1) ESTABLISHMENT.—In carrying out the program under subsection (a), the Secretary shall establish a nuclear energy apprenticeship subprogram under which the Secretary shall competitively award traineeships and apprenticeships in coordination with universities to provide focused, advanced training to meet critical mission needs of the De-

partment, including in industries that are represented by skilled labor unions.

"(2) REQUIREMENTS.—In carrying out the subprogram under this subsection, the Secretary shall—

"(A) encourage appropriate partnerships among National Laboratories, affected universities, and industry; and

"(B) on an annual basis, evaluate the needs of the nuclear energy community to implement traineeships for focused topical areas addressing mission-specific workforce needs.

"(3) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out the subprogram under this subsection $5,000,000 for each of fiscal years 2021 through 2030.".

(d) CONFORMING AMENDMENT.—The table of contents of the Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 600) is amended by striking the items relating to sections 952 through 954 and inserting the following:

"Sec. 952. Reactor concepts research, development, demonstration, and commercial application.
"Sec. 953. Fuel cycle research, development, demonstration, and commercial application
"Sec. 954. Nuclear science and engineering support.".

(e) UNIVERSITY NUCLEAR LEADERSHIP PROGRAM.—Section 313 of the Omnibus Appropriations Act, 2009 (42 U.S.C. 16274a), is amended to read as follows:

"SEC. 313. UNIVERSITY NUCLEAR LEADERSHIP PROGRAM.

"(a) IN GENERAL.—In carrying out section 954 of the Energy Policy Act of 2005 (42 U.S.C. 16274), the Secretary of Energy shall support a program to be known as the University Nuclear Leadership Program (in this section referred to as the 'Program').

"(b) USE OF FUNDS.—

"(1) IN GENERAL.—Except as provided in paragraph (2), amounts made available to carry out the Program shall be used to provide financial assistance for scholarships, fellowships, and research and development projects at institutions of higher education with respect to research, development, demonstration, and commercial application activities relevant to civilian advanced nuclear reactors including, but not limited to—

"(A) relevant fuel cycle technologies;

"(B) project management; and

"(C) advanced construction, manufacturing, and fabrication methods.

"(2) EXCEPTION.—Notwithstanding paragraph (1), amounts made available to carry out the Pro-

gram may be used to provide financial assistance for a scholarship, fellowship, or multiyear research and development project that does not align directly with a programmatic mission of the Department of Energy, if the activity for which assistance is provided would facilitate the maintenance of the discipline of nuclear science or nuclear engineering.

''(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated $15,000,000 to the Secretary of Energy to carry out the Program for each of fiscal years 2021 through 2030.''.

(f) VERSATILE NEUTRON SOURCE.—Section 955(c) of the Energy Policy Act of 2005 (42 U.S.C. 16275(c)) is amended—

(1) in paragraph (1)—

(A) in the paragraph heading, by striking ''MISSION NEED'' and inserting ''AUTHORIZATION''; and

(B) in subparagraph (A), by striking ''determine the mission need'' and inserting ''provide''; and

(2) by adding at the end the following:

''(7) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Sec-

retary to carry out to completion the construction of the facility under this section—

"(A) $300,000,000 for fiscal year 2021;

"(B) $550,000,000 for fiscal year 2022;

"(C) $638,000,000 for fiscal year 2023;

"(D) $765,000,000 for fiscal year 2024; and

"(E) $763,000,000 for fiscal year 2025.".

(g) ADVANCED NUCLEAR REACTOR RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAM.—

(1) IN GENERAL.—Subtitle E of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16271 et seq.) is amended by adding at the end the following:

"SEC. 959A. ADVANCED NUCLEAR REACTOR RESEARCH, DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION PROGRAM.

"(a) DEMONSTRATION PROJECT DEFINED.—For the purposes of this section, the term 'demonstration project' means—

"(1) an advanced nuclear reactor operated for the purpose of demonstrating the suitability for commercial application of the advanced nuclear reactor—

"(A) as part of the power generation facilities of an electric utility system; or

''(B) in any other manner; or

''(2) the operation of one or more experimental advanced nuclear reactors, for the purpose of demonstrating the suitability for commercial application of such advanced nuclear reactors.

''(b) ESTABLISHMENT.—The Secretary shall establish a program to advance the research, development, demonstration, and commercial application of domestic advanced, affordable, nuclear energy technologies by—

''(1) demonstrating a variety of advanced nuclear reactor technologies that could be used to produce—

''(A) safer, emissions-free power at a lower cost compared to reactors operating on the date of enactment of the Clean Economy Jobs and Innovation Act;

''(B) heat for community heating, industrial purposes, heat storage, or synthetic fuel production;

''(C) remote or off-grid energy supply; or

''(D) backup or mission-critical power supplies;

''(2) identifying research areas that the private sector is unable or unwilling to undertake due to the cost of, or risks associated with, the research; and

''(3) facilitating the access of the private sector—

''(A) to Federal research facilities and personnel; and

''(B) to the results of research relating to civil nuclear technology funded by the Federal Government.

''(c) DEMONSTRATION PROJECTS.—In carrying out demonstration projects under the program established in subsection (b), the Secretary shall—

''(1) include, as an evaluation criterion, diversity in designs for the advanced nuclear reactors demonstrated under this section, including designs using various—

''(A) primary coolants;

''(B) fuel types and compositions; and

''(C) neutron spectra;

''(2) consider, as an evaluation criterion, the likelihood that the operating cost for future commercial units for each design implemented through a demonstration project under this subsection is cost-competitive in the applicable market, including those designs configured as hybrid energy systems as described in section 952(c);

''(3) ensure that each evaluation of candidate technologies for the demonstration projects is completed through an external review of proposed designs, which review shall—

''(A) be conducted by a panel that includes not fewer than 1 representative that does not have a conflict of interest of each of—

''(i) an electric utility;

''(ii) an entity that uses high-temperature process heat for manufacturing or industrial processing, such as a petrochemical or synthetic fuel company, a manufacturer of metals or chemicals, or a manufacturer of concrete;

''(iii) an expert from the investment community;

''(iv) a project management practitioner; and

''(v) an environmental health and safety expert; and

''(B) include a review of each demonstration project under this subsection which shall include consideration of cost-competitiveness and other value streams, together with the technology readiness level, the technical abilities

and qualifications of teams desiring to demonstrate a proposed advanced nuclear reactor technology, the capacity to meet cost-share requirements of the Department, if Federal funding is provided, and environmental impacts;

''(4) for federally funded demonstration projects, enter into cost-sharing agreements with private sector partners in accordance with section 988 for the conduct of activities relating to the research, development, and demonstration of advanced nuclear reactor designs under the program;

''(5) consult with—

''(A) National Laboratories;

''(B) institutions of higher education;

''(C) traditional end users (such as electric utilities);

''(D) potential end users of new technologies (such as users of high-temperature process heat for manufacturing processing, including petrochemical or synthetic fuel companies, manufacturers of metals or chemicals, or manufacturers of concrete);

''(E) developers of advanced nuclear reactor technology;

''(F) environmental and public health and safety experts; and

''(G) non-proliferation experts;

''(6) seek to ensure that the demonstration projects carried out under this section do not cause any delay in the progress of an advanced reactor project by private industry and the Department of Energy that is underway as of the date of enactment of this section;

''(7) establish a streamlined approval process for expedited contracting between awardees and the Department;

''(8) identify technical challenges to candidate technologies;

''(9) support near-term research and development to address the highest risk technical challenges to the successful demonstration of a selected advanced reactor technology, in accordance with—

''(A) paragraph (8);

''(B) the research and development activities under section 952(b); and

''(C) the research and development activities under section 958; and

''(10) establish such technology advisory working groups as the Secretary determines to be appro-

priate to advise the Secretary regarding the technical challenges identified under paragraph (8) and the scope of research and development programs to address the challenges, in accordance with paragraph (9), to be comprised of—

"(A) private sector advanced nuclear reactor technology developers;

"(B) technical experts with respect to the relevant technologies at institutions of higher education;

"(C) technical experts at the National Laboratories;

"(D) environmental and public health and safety experts;

"(E) non-proliferation experts; and

"(F) any other entities the Secretary determines appropriate.

"(d) MILESTONE-BASED DEMONSTRATION PROJECTS.—The Secretary may carry out demonstration projects under subsection (c) as a milestone-based demonstration project under section 8304 of the Clean Economy Jobs and Innovation Act.

"(e) NONDUPLICATION.—Entities may not receive funds under this program if receiving funds from another

reactor demonstration program at the Department in the same fiscal year.

''(f) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out the program under this subsection—

''(1) $530,000,000 for fiscal year 2021;

''(2) $680,000,000 for fiscal year 2022;

''(3) $680,000,000 for fiscal year 2023;

''(4) $680,000,000 for fiscal year 2024; and

''(5) $680,000,000 for fiscal year 2025.''.

(2) TABLE OF CONTENTS.—The table of contents of the Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 594) is amended—

(A) in the items relating to sections 957, 958, and 959, by inserting ''Sec.'' before ''9'' each place it appears; and

(B) by inserting after the item relating to section 959 the following:

''Sec. 959A. Advanced nuclear reactor research, development, demonstration, and commercial application program.''.

(h) INTERNATIONAL NUCLEAR ENERGY COOPERATION.—

(1) IN GENERAL.—Subtitle E of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16271 et seq.), as amended by subsection (g), is further amended by adding at the end the following:

"SEC. 959B. INTERNATIONAL NUCLEAR ENERGY COOPERATION.

"(a) IN GENERAL.—The Secretary, in consultation with international regulators, shall carry out a program—

"(1) to coordinate international efforts with respect to research, development, demonstration, and commercial application of nuclear technology that supports diplomatic, nonproliferation, climate, and international economic objectives for the safe, secure, and peaceful use of such technology; and

"(2) to develop collaboration initiatives with respect to such efforts with a variety of countries through—

"(A) research and development agreements;

"(B) the development of coordinated action plans; and

"(C) new or existing multilateral cooperation commitments including—

"(i) the International Framework for Nuclear Energy Cooperation;

"(ii) the Generation IV International Forum;

"(iii) the International Atomic Energy Agency;

"(iv) the Organization for Economic Co-operation and Development Nuclear Energy Agency; and

"(v) any other international collaborative effort with respect to advanced nuclear reactor operations and safety.

"(b) REQUIREMENTS.—The program under subsection (a) shall be carried out to facilitate, to the maximum extent practicable, workshops and expert-based exchanges to engage industry, stakeholders, and foreign governments regarding international civil nuclear issues, such as training, financing, safety, and options for multinational cooperation on used nuclear fuel disposal.".

(2) TABLE OF CONTENTS.—The table of contents of the Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 594), as amended by subsection (g), is further amended by inserting after the item relating to section 959A the following:

"Sec. 959B. International nuclear energy cooperation.".

SEC. 4203. NUCLEAR ENERGY BUDGET PLAN.

Section 959 of the Energy Policy Act of 2005 (42 U.S.C. 16279) is amended—

(1) by amending subsection (b) to read as follows:

"(b) BUDGET PLAN ALTERNATIVE 1.—One of the budget plans submitted under subsection (a) shall assume

constant annual funding for 10 years at the appropriated level for the current fiscal year for the civilian nuclear energy research and development of the Department.''; and

(2) by inserting after subsection (d) the following:

''(e) UPDATES.—Not less frequently than once every 2 years, 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 updated 10-year budget plans which shall identify, and provide a justification for, any major deviation from a previous budget plan submitted under this section.''.

SEC. 4204. ORGANIZATION AND ADMINISTRATION OF PROGRAMS.

(a) IN GENERAL.—Subtitle E of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16271 et seq.), as amended by this Act, is further amended by adding at the end of the following:

''SEC. 959C. ORGANIZATION AND ADMINISTRATION OF PROGRAMS.

''(a) COORDINATION.—In carrying out this subtitle, the Secretary shall coordinate activities, and effectively manage crosscutting research priorities across programs

of the Department and other relevant Federal agencies, including the National Laboratories.

''(b) COLLABORATION.—

''(1) IN GENERAL.—In carrying out this subtitle, the Secretary shall collaborate with industry, National Laboratories, other relevant Federal agencies, institutions of higher education, including minority-serving institutions and research reactors, Tribal entities, including Alaska Native Corporations, and international bodies with relevant scientific and technical expertise.

''(2) PARTICIPATION.—To the extent practicable, the Secretary shall encourage research projects that promote collaboration between entities specified in paragraph (1).

''(c) DISSEMINATION OF RESULTS AND PUBLIC AVAILABILITY.—The Secretary shall, except to the extent protected from disclosure under section 552(b) of title 5, United States Code, publish the results of projects supported under this subtitle through Department websites, reports, databases, training materials, and industry conferences, including information discovered after the completion of such projects.

''(d) EDUCATION AND OUTREACH.—In carrying out the activities described in this subtitle, the Secretary shall

support education and outreach activities to disseminate information and promote public understanding of nuclear energy.

''(e) TECHNICAL ASSISTANCE.—In carrying out this subtitle, for the purposes of supporting technical, non-hardware, and information-based advances in nuclear energy development and operations, the Secretary shall also conduct technical assistance and analysis activities, including activities that support commercial application of nuclear energy in rural, Tribal, and low-income communities.

''(f) PROGRAM REVIEW.—At least annually, all programs in this subtitle shall be subject to an annual review by the Nuclear Energy Advisory Committee of the Department or other independent entity, as appropriate.

''(g) SENSITIVE INFORMATION.—The Secretary shall not publish any information generated under this subtitle that is detrimental to national security, as determined by the Secretary.''.

(b) TABLE OF CONTENTS.—The table of contents of the Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 594), as amended by this Act, is further amended by inserting after the item relating to section 959B the following:

''Sec. 959C. Organization and administration of programs.''.

Subtitle C—Defending Against Rosatom Exports

SEC. 4301. EXTENSION AND EXPANSION OF LIMITATIONS ON IMPORTATION OF URANIUM FROM RUSSIAN FEDERATION.

(a) IN GENERAL.—Section 3112A of the USEC Privatization Act (42 U.S.C. 2297h–10a) is amended—

(1) in subsection (a)—

(A) by redesignating paragraph (7) as paragraph (8); and

(B) by inserting after paragraph (6) the following:

''(7) SUSPENSION AGREEMENT.—The term 'Suspension Agreement' has the meaning given that term in section 3102(13).'';

(2) in subsection (b)—

(A) by striking ''United States to support'' and inserting the following: ''United States—

''(1) to support'';

(B) by striking the period at the end and inserting a semicolon; and

(C) by adding at the end the following:

''(2) to reduce reliance on uranium imports in order to protect essential national security interests of the United States;

''(3) to revive and strengthen the supply chain for nuclear fuel produced and used in the United States; and

''(4) to expand production of nuclear fuel in the United States.''; and

(3) in subsection (c)—

(A) in paragraph (2)—

(i) in subparagraph (A)—

(I) by striking ''After'' and inserting ''Except as provided in subparagraph (B), after'';

(II) in clause (vi), by striking ''; and'' and inserting a semicolon;

(III) in clause (vii), by striking the period at the end and inserting a semicolon; and

(IV) by adding at the end the following:

''(viii) in calendar year 2021, 596,682 kilograms;

''(ix) in calendar year 2022, 489,617 kilograms;

''(x) in calendar year 2023, 578,877 kilograms;

"(xi) in calendar year 2024, 476,536 kilograms;

"(xii) in calendar year 2025, 470,376 kilograms;

"(xiii) in calendar year 2026, 464,183 kilograms;

"(xiv) in calendar year 2027, 459,083 kilograms;

"(xv) in calendar year 2028, 344,312 kilograms;

"(xvi) in calendar year 2029, 340,114 kilograms;

"(xvii) in calendar year 2030, 332,141 kilograms;

"(xviii) in calendar year 2031, 328,862 kilograms;

"(xix) in calendar year 2032, 322,255 kilograms;

"(xx) in calendar year 2033, 317,536 kilograms;

"(xxi) in calendar year 2034, 298,088 kilograms;

"(xxii) in calendar year 2035, 294,511 kilograms;

"(xxiii) in calendar year 2036, 286,066 kilograms;

"(xxiv) in calendar year 2037, 281,272 kilograms;

"(xxv) in calendar year 2038, 277,124 kilograms;

"(xxvi) in calendar year 2039, 277,124 kilograms; and

"(xxvii) in calendar year 2040, 267,685 kilograms.";

(ii) by redesignating subparagraph (B) as subparagraph (C); and

(iii) by inserting after subparagraph (A) the following:

"(B) ADMINISTRATION.—

"(i) IN GENERAL.—The Secretary of Commerce shall administer the import limitations described in subparagraph (A) in accordance with the provisions of the Suspension Agreement, including—

"(I) the limitations on sales of enriched uranium product and separative work units plus conversion;

"(II) the requirements for natural uranium returned feed associated

with sales of enrichment, or enrichment plus conversion from the Russian Federation; and

''(III) any other provisions of the Suspension Agreement.

''(ii) EFFECT OF TERMINATION OF SUSPENSION AGREEMENT.—Clause (i) shall remain in effect if the Suspension Agreement is terminated.'';

(B) in paragraph (3)—

(i) in subparagraph (A), by striking the semicolon and inserting ''; or'';

(ii) in subparagraph (B), by striking ''; or'' and inserting a period; and

(iii) by striking subparagraph (C);

(C) in paragraph (5)—

(i) in subparagraph (A)—

(I) by striking ''reference data'' and all that follows through ''2019'' and inserting the following: ''Lower Scenario data in the 2019 report of the World Nuclear Association entitled 'The Nuclear Fuel Report: Global Scenarios for Demand and Supply Availability 2019–2040'. In each of

calendar years 2023, 2029, and 2035''; and

(II) by striking ''report or a subsequent report'' and inserting ''report'';

(ii) by redesignating subparagraphs (B) and (C) as subparagraphs (C) and (D), respectively;

(iii) by inserting after subparagraph (A) the following:

''(B) REPORT REQUIRED.—Not later than one year after the date of the enactment of the Clean Economy Jobs and Innovation Act, and every 3 years thereafter, the Secretary shall submit to Congress a report that includes—

''(i) a recommendation on the use of all publicly available data to ensure accurate forecasting by scenario data to comport to actual demand for low-enriched uranium for nuclear reactors in the United States; and

''(ii) an identification of the steps to be taken to adjust the import limitations described in paragraph (2)(A) based on the most accurate scenario data.''; and

(iv) in subparagraph (D), as redesignated by clause (ii), by striking ''subparagraph (B)'' and inserting ''subparagraph (C)'';

(D) in paragraph (9), by striking ''2020'' and inserting ''2040'';

(E) in paragraph (12)(B), by inserting ''or the Suspension Agreement'' after ''the Russian HEU Agreement''; and

(F) by striking ''(2)(B)'' each place it appears and inserting ''(2)(C)''.

(b) APPLICABILITY.—The amendments made by subsection (a) apply with respect to uranium imported from the Russian Federation on or after January 1, 2021.

Subtitle D—FUSION ENERGY RESEARCH

SEC. 4401. FUSION ENERGY RESEARCH.

(a) PROGRAM.—Section 307 of the Department of Energy Research and Innovation Act (42 U.S.C. 18645) is amended—

(1) by redesignating subsections (a) through (g) as subsections (b) through (h), respectively;

(2) by inserting before subsection (b), as so redesignated, the following:

''(a) PROGRAM.—As part of the activities authorized under section 209 of the Department of Energy Organization Act (42 U.S.C. 7139) and section 972 of the Energy Policy Act of 2005 (42 U.S.C. 16312), the Director shall carry out a fusion energy sciences research and enabling technology development program to effectively address the scientific and engineering challenges to building a cost competitive fusion power plant and to establish a competitive fusion power industry in the United States. As part of this program, the Director shall carry out research activities to expand the fundamental understandings of plasmas and matter at very high temperatures and densities for fusion applications and for other plasma science applications.'';

(3) by amending subsection (d) to read as follows:

''(d) INERTIAL FUSION RESEARCH AND DEVELOPMENT.—

''(1) IN GENERAL.—The Director shall carry out a program of research and technology development in inertial fusion for energy applications, including ion beam, laser, and pulsed power fusion systems.

''(2) ACTIVITIES.—As part of the program described in paragraph (1), the Director shall support

activities at and partnerships with universities and the National Laboratories to—

"(A) develop novel target designs;

"(B) support modeling of various inertial fusion energy concepts and systems;

"(C) develop diagnostic tools; and

"(D) improve inertial fusion energy driver technologies.

"(3) AUTHORIZATION OF APPROPRIATIONS.—Out of funds authorized to be appropriated under subsection (o), there are authorized to be appropriated to the Secretary to carry out the activities described in subsection (d)—

"(A) $25,000,000 for fiscal year 2021;

"(B) $26,250,000 for fiscal year 2022;

"(C) $27,563,000 for fiscal year 2023;

"(D) $28,941,000 for fiscal year 2024; and

"(E) $30,377,000 for fiscal year 2025.";

(4) by amending subsection (e) to read as follows:

"(e) ALTERNATIVE AND ENABLING CONCEPTS.—

"(1) IN GENERAL.—The Director shall support research and development activities and facility operations at institutions of higher education, National

Laboratories, and private facilities in the United States for a portfolio of alternative and enabling fusion energy concepts that may provide solutions to significant challenges to the establishment of a commercial magnetic fusion power plant, prioritized based on the ability of the United States to play a leadership role in the international fusion research community.

''(2) ACTIVITIES.—Fusion energy concepts and activities explored under paragraph (1) may include—

''(A) alternative fusion energy concepts, including—

''(i) advanced stellarator concepts;

''(ii) non-tokamak confinement configurations operating at low magnetic fields;

''(iii) magnetized target fusion energy concepts; or

''(iv) other promising fusion energy concepts identified by the Director;

''(B) enabling fusion technology development activities, including—

"(i) high magnetic field approaches facilitated by high temperature superconductors;

"(ii) liquid metals to address issues associated with fusion plasma interactions with the inner wall of the encasing device; and

"(iii) advanced blankets for heat management and fuel breeding; and

"(C) advanced scientific computing activities.

"(3) INNOVATION NETWORK FOR FUSION ENERGY.—

"(A) IN GENERAL.—The Secretary, acting through the Office of Science, shall support a program to provide fusion energy researchers with access to scientific and technical resources and expertise at facilities supported by the Department, including such facilities at National Laboratories and universities, to advance innovative fusion energy technologies toward commercial application.

"(B) AWARDS.—Financial assistance under the program established in subsection (a)

may be in the form of grants, vouchers, equipment loans, or contracts to private entities.

''(3) AUTHORIZATION OF APPROPRIATIONS.—Out of funds authorized to be appropriated under subsection (o), there are authorized to be appropriated to the Secretary to carry out the activities described in subsection (e)—

''(A) $100,000,000 for fiscal year 2021;

''(B) $105,000,000 for fiscal year 2022;

''(C) $110,250,000 for fiscal year 2023;

''(D) $115,763,000 for fiscal year 2024; and

''(E) $121,551,000 for fiscal year 2025.''; and

(5) by adding at the end the following:

''(i) MILESTONE-BASED DEVELOPMENT PROGRAM.—

''(1) IN GENERAL.—Using the authority of the Secretary under section 646(g) of the Department of Energy Organization Act (42 U.S.C. 7256(g)), notwithstanding paragraph (10) of such section, the Secretary shall establish, within 3 months of enactment of this Act, a milestone-based fusion energy development program that requires projects to meet particular technical milestones before a participant is awarded funds by the Department.

''(2) PURPOSE.—The purpose of the program established by paragraph (1) shall be to support the development of a U.S.-based fusion power industry through the research and development of technologies that will enable the construction of new full-scale fusion systems capable of demonstrating significant improvements in the performance of such systems, as defined by the Secretary, within 10 years of the enactment of this Act.

''(3) ELIGIBILITY.—Any entity is eligible to participate in the program provided that the Under Secretary has deemed it as having the necessary resources and expertise.

''(4) REQUIREMENTS.—In carrying out the milestone-based program under paragraph (1), the Secretary shall, for each relevant project—

''(A) request proposals from eligible entities, as determined by the Secretary, that include proposed technical milestones, including estimated project timelines and total costs;

''(B) set milestones based on a rigorous technical review process;

''(C) award funding of a predetermined amount to projects that successfully meet proposed milestones under paragraph (1), or for

expenses deemed reimbursable by the Secretary, in accordance with terms negotiated for an individual award; and

''(D) communicate regularly with selected eligible entities and, if the Secretary deems appropriate, exercise small amounts of flexibility for technical milestones as projects mature.

''(5) AWARDS.—For the program established under paragraph (1)—

''(A) an award recipient shall be responsible for all costs until milestones are achieved, or reimbursable expenses are reviewed and verified by the Department; and

''(B) should an awardee not meet the milestones described in paragraph (4), the Secretary may end the partnership with an award recipient and use the remaining funds in the ended agreement for new or existing projects carried out under this section.

''(6) APPLICATIONS.—Any project proposal submitted to the program under paragraph (1) shall be evaluated based upon its scientific, technical, and business merits through a peer-review process, which shall include reviewers with appropriate expertise from the private sector, the investment community,

and experts in the science and engineering of fusion and plasma physics.

''(7) PROJECT MANAGEMENT.—In carrying out projects under this program and assessing the completion of their milestones in accordance with paragraph (4), the Secretary shall consult with experts that represent diverse perspectives and professional experiences, including those from the private sector, to ensure a complete and thorough review.

''(8) PROGRAMMATIC REVIEW.—Not later than 4 years after the Secretary has established 3 milestones under this program, the Secretary shall enter into a contractual arrangement with the National Academy of Sciences to review and provide a report describing the findings of this review to the House Committee on Science, Space, and Technology and the Senate Committee on Energy and Natural Resources on the program established under this paragraph (1) that assesses—

''(A) the benefits and drawbacks of a milestone-based fusion program as compared to traditional program structure funding models at the Department;

''(B) lessons-learned from program operations; and

"(C) any other matters the Secretary determines regarding the program.

"(9) ANNUAL REPORT.—As part of the annual budget request submitted for each fiscal year, the Secretary shall provide the House Committee on Science, Space, and Technology and the Senate Committee on Energy and Natural Resources a report describing partnerships supported by the program established under paragraph (1) during the previous fiscal year.

"(10) AUTHORIZATIONS FOR APPROPRIATIONS.—Out of funds authorized to be appropriated under subsection (o), there are authorized to be appropriated to the Secretary to carry out the activities described in subsection (i), to remain available until expended—

"(A) $45,000,000 for fiscal year 2021;

"(B) $110,000,000 for fiscal year 2022;

"(C) $140,000,000 for fiscal year 2023;

"(D) $110,000,000 for fiscal year 2024; and

"(E) $45,000,000 for fiscal year 2025.

"(j) FUSION REACTOR SYSTEM DESIGN.—The Director shall support research and development activities to

design future fusion reactor systems and examine and address the technical drivers for the cost of these systems.

''(k) GENERAL PLASMA SCIENCE AND APPLICATIONS.—The Director shall support research in general plasma science and high energy density physics that advance the understanding of the scientific community of fundamental properties and complex behavior of matter to control and manipulate plasmas for a broad range of applications, including support for research relevant to advancements in chip manufacturing and microelectronics.

''(l) SENSE OF CONGRESS.—It is the sense of Congress that the United States should support a robust, diverse program in addition to providing sufficient support to, at a minimum, meet its commitments to ITER and maintain the schedule of the project as determined by the Secretary in coordination with the ITER Organization at the time of the enactment of this Act. It is further the sense of Congress that developing the scientific basis for fusion, providing research results key to the success of ITER, and training the next generation of fusion scientists are of critical importance to the United States and should in no way be diminished by participation of the United States in the ITER project.

''(m) INTERNATIONAL COLLABORATION.—The Director shall—

''(1) as practicable and in coordination with other appropriate Federal agencies as necessary, ensure the access of United States researchers to the most advanced fusion research facilities and research capabilities in the world, including ITER;

''(2) to the maximum extent practicable, continue to leverage United States participation ITER, and prioritize expanding international partnerships and investments in current and future fusion research facilities within the United States; and

''(3) to the maximum extent practicable, prioritize engagement in collaborative efforts in support of future international facilities that would provide access to the most advanced fusion research facilities in the world to United States researchers.

''(n) FISSION AND FUSION RESEARCH COORDINATION REPORT.—

''(1) IN GENERAL.—Not later than 6 months after the date of enactment of this Act, the Secretary shall transmit to Congress a report addressing opportunities for coordinating fusion energy research and development activities between the Office of Nuclear Energy and the Office of Science.

''(2) COMPONENTS.—The report shall assess opportunities for collaboration on research and development of—

''(A) liquid metals to address issues associated with fusion plasma interactions with the inner wall of the encasing device and other components within the reactor;

''(B) immersion blankets for heat management and fuel breeding;

''(C) technologies and methods for instrumentation and control;

''(D) computational methods and codes for system operation and maintenance;

''(E) codes and standard development;

''(F) radioactive waste handling;

''(G) radiological safety;

''(H) potential for non-electricity generation applications; and

''(I) any other overlapping priority as identified by the Director of the Office of Science or the Assistant Secretary of Energy for Nuclear Energy.

''(3) IMPLEMENTATION.—The Secretary shall implement the recommendations made by the report

directed in this section upon transmission of the report to Congress.

''(o) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out the activities described in this section—

''(1) $976,000,000 for fiscal year 2021;

''(2) $1,033,000,000 for fiscal year 2022;

''(3) $1,104,000,000 for fiscal year 2023;

''(4) $1,181,000,000 for fiscal year 2024; and

''(5) $1,264,000,000 for fiscal year 2025.''.

(b) ITER.—Section 972(c) of the Energy Policy Act of 2005 (42 U.S.C. 16312) is amended to read as follows:

''(c) UNITED STATES PARTICIPATION IN ITER.—

''(1) IN GENERAL.—There is authorized United States participation in the construction and operations of the ITER project, as agreed to under the April 25, 2007 'Agreement on the Establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project'. The Director shall coordinate and carry out the responsibilities of the United States with respect to this Agreement.

''(2) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to Congress a report providing an assessment

of the most recent schedule for ITER that has been approved by the ITER Council.

''(3) AUTHORIZATION OF APPROPRIATIONS.—Out of funds authorized to be appropriated under section 307(o) of the Department of Energy Research and Innovation Act (42 U.S.C. 18645), there shall be made available to the Secretary to carry out the construction of ITER—

''(A) $374,000,000 for fiscal year 2021; and

''(B) $300,000,000 for each of fiscal years 2022 through 2025.''.

TITLE V—ELECTRIC GRID AND CYBERSECURITY

Subtitle A—Electric Grid

PART 1—21ST CENTURY POWER GRID

SEC. 5101. 21ST CENTURY POWER GRID.

(a) IN GENERAL.—The Secretary of Energy shall establish a program to provide financial assistance to eligible partnerships to carry out projects related to the modernization of the electric grid, including—

(1) projects for the deployment of technologies to improve monitoring of, advanced controls for, and prediction of performance of, a distribution system; and

(2) projects related to transmission system planning and operation.

(b) ELIGIBLE PROJECTS.—Projects for which an eligible partnership may receive financial assistance under subsection (a)—

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

(2) may be designed to deploy a new product or technology that could be used by customers of an electric utility; and

(3) shall demonstrate—

(A) secure integration and management of energy resources, including through distributed energy generation, combined heat and power, microgrids, energy storage, electric vehicles, energy efficiency, demand response, or controllable loads; or

(B) secure integration and interoperability of communications and information technologies related to the electric grid.

(c) CYBERSECURITY PLAN.—Each project carried out with financial assistance provided under subsection (a) shall include the development of a cybersecurity plan writ-

ten in accordance with guidelines developed by the Secretary of Energy.

(d) PRIVACY EFFECTS ANALYSIS.—Each project carried out with financial assistance provided under subsection (a) shall include a privacy effects analysis that evaluates the project in accordance with the Voluntary Code of Conduct of the Department of Energy, commonly known as the ''DataGuard Energy Data Privacy Program'', or the most recent revisions to the privacy program of the Department.

(e) DEFINITIONS.—In this section:

(1) ELIGIBLE PARTNERSHIP.—The term ''eligible partnership'' means a partnership consisting of two or more entities, which—

(A) may include—

(i) any institution of higher education;

(ii) a National Laboratory;

(iii) a State, territory, or a local government or other public body created by or pursuant to State law;

(iv) an Indian Tribe;

(v) a Federal power marketing administration; or

(vi) an entity that develops and provides technology; and

(B) shall include at least one of any of—

(i) an electric utility;

(ii) a Regional Transmission Organization; or

(iii) an Independent System Operator.

(2) ELECTRIC UTILITY.—The term ''electric utility'' has the meaning given that term in section 3(22) of the Federal Power Act (16 U.S.C. 796(22)), except that such term does not include an entity described in subparagraph (B) of such section.

(3) FEDERAL POWER MARKETING ADMINISTRATION.—The term ''Federal power marketing administration'' means the Bonneville Power Administration, the Southeastern Power Administration, the Southwestern Power Administration, or the Western Area Power Administration.

(4) INDEPENDENT SYSTEM OPERATOR; REGIONAL TRANSMISSION ORGANIZATION.—The terms ''Independent System Operator'' and ''Regional Transmission Organization'' have the meanings given those terms in section 3 of the Federal Power Act (16 U.S.C. 796).

(5) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the

meaning given that term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(f) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary of Energy to carry out this section $700,000,000 for each of fiscal years 2021 through 2025, to remain available until expended.

SEC. 5102. DEFINITIONS.

In sections 5103 and 5104:

(1) ADVANCED ENERGY TECHNOLOGY.—The term ''advanced energy technology'' means any energy generation, load-modifying transmission, or storage technology with zero or minimal greenhouse gas emissions that is connected—

(A) to the distribution system;

(B) to the transmission system; or

(C) behind the meter.

(2) ADVISORY COMMITTEE.—The term ''Advisory Committee'' means the advisory committee established under section 5103(a)(2)(A).

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

(4) ELECTRIC UTILITY.—The term ''electric utility'' has the meaning given the term in section 3 of the Federal Power Act (16 U.S.C. 796).

(5) GRID OPERATOR.—The term ''grid operator'' means—

(A) a Transmission Organization, including—

(i) an Independent System Operator; and

(ii) a Regional Transmission Organization;

(B) a public utility; and

(C) an electric utility.

(6) INDEPENDENT SYSTEM OPERATOR.—The term ''Independent System Operator'' has the meaning given the term in section 3 of the Federal Power Act (16 U.S.C. 796).

(7) INITIATIVE.—The term ''Initiative'' means the Advanced Energy Technology Research Initiative established under section 5103(a)(1).

(8) PUBLIC UTILITY.—The term ''public utility'' has the meaning given the term in section 201(e) of the Federal Power Act (16 U.S.C. 824(e)).

(9) REGIONAL TRANSMISSION ORGANIZATION.—The term ''Regional Transmission Organization'' has the meaning given the term in section 3 of the Federal Power Act (16 U.S.C. 796).

(10) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(11) TRANSMISSION ORGANIZATION.—The term ''Transmission Organization'' has the meaning given the term in section 3 of the Federal Power Act (16 U.S.C. 796).

SEC. 5103. POWER SYSTEM MODELING REFORM AND UPDATES TO GRID SERVICES AND GRID OPERATOR SOFTWARE.

(a) ADVANCED ENERGY TECHNOLOGY RESEARCH INITIATIVE.—

(1) IN GENERAL.—Not later than 90 days after the date of enactment of this Act, the Commission, in coordination with the Secretary, shall establish an initiative, to be known as the ''Advanced Energy Technology Research Initiative'', to research and provide recommendations on how to improve the modeling, operational, and planning practices used for the bulk electric system.

(2) ADVISORY COMMITTEE.—

(A) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Commission, in coordination with the Secretary, shall establish an advisory committee to research, report on, and provide recommenda-

tions on matters relating to the Initiative, including—

(i) whether the existing modeling and long-term and short-term planning practices used by grid operators for power systems, including power markets, adequately incorporate expected integration with respect to advanced energy technologies;

(ii) whether the methods used to determine future transmission and capacity needs and make reliability-related determinations use the right data to adequately forecast and model the integration of advanced energy technology into electric power systems;

(iii) whether the modeling and planning practices described in clause (i) and the methods described in clause (ii) need to be updated to better account for the integration of advanced energy technology into electric power systems;

(iv) any undue barriers to the adoption of advanced energy technology presented by—

(I) existing modeling, operational, and planning practices; and

(II) State estimation tools for planning and reliability;

(v) any need to develop emerging technologies or software for use in improving modeling, planning, and operations in wholesale electricity markets to resolve computational or technical barriers to the adoption of advanced energy technology, including software relating to—

(I) the use of big data, artificial intelligence, and probabilistic methods to predict, in near-real-time—

(aa) energy generation from variable and distributed resources;

(bb) load profiles; and

(cc) consumption and congestion; and

(II) the use of artificial intelligence to improve the responsiveness of energy system operations;

(vi) whether existing and future grid reliability service definitions and the mod-

eling techniques, operational processes, and planning processes used to procure grid reliability services—

(I) appropriately account for the technical and operational characteristics of advanced energy technologies;

(II) allow for the use of those advanced energy technologies to provide grid reliability services; and

(III) include appropriate cybersecurity safeguards; and

(vii) any rulemaking, technical conference, or policy statement that, in the determination of the Advisory Committee, the Commission should consider.

(B) COMPOSITION.—The Advisory Committee shall consist of—

(i) not fewer than 1 representative from each of—

(I) the Commission;

(II) the Department of Energy;

(III) the Electric Reliability Organization (as defined in section 215(a) of the Federal Power Act (16 U.S.C. 824o(a)));

(IV) an Independent System Operator or a Regional Transmission Organization;

(V) an entity generating electric power that is not affiliated with a transmission-owning public or non-public utility;

(VI) an environmental organization with expertise on the bulk electric system; and

(VII) an institution of higher education with expertise on the bulk electric system;

(ii) not fewer than 2 designees of the National Association of Regulatory Utility Commissioners;

(iii) not fewer than 3 representatives from public utilities or electric utilities in areas not serviced by an Independent System Operator or a Regional Transmission Organization; and

(iv) not fewer than 2 representatives from private and nonprofit associations with expertise in the development, deploy-

ment, and use of advanced energy technologies.

(C) REPORTS.—Not later than 18 months after the date of enactment of this Act, and every 2 years thereafter for 10 years, the Advisory Committee 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 on the Initiative, including the findings or recommendations of the Advisory Committee with respect to the matters described in clauses (i) through (vii) of subparagraph (A).

(b) ADVANCED ENERGY TECHNOLOGY AND GRID SERVICES PROGRAM.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary shall establish a competitive financial assistance program, to be known as the ''Advanced Energy Technology and Grid Services Program'', under which the Secretary shall enter into Federal financial assistance agreements with eligible entities described in paragraph (2) for the purpose of increasing the market penetration of advanced energy tech-

nology through advanced research and development and pilot demonstrations of—

(A) software upgrades, including upgrades to the software platforms used to operate wholesale energy markets;

(B) updated power system planning;

(C) new power system (including power market) modeling platforms;

(D) cybersecurity and physical security upgrades; and

(E) resilience upgrades.

(2) ELIGIBLE ENTITIES DESCRIBED.—An eligible entity referred to in paragraph (1) is—

(A) a grid operator;

(B) a State public utility commission;

(C) an energy cooperative;

(D) a municipality;

(E) an electric utility;

(F) a gas utility; or

(G) a State energy office.

(3) ELIGIBLE ACTIVITIES.—The Secretary may enter into a financial assistance agreement under this subsection for—

(A) software upgrades by grid operators;

(B) new power system (including power market) modeling platforms;

(C) enhancements to cybersecurity safeguards; or

(D) updated power system (including power market) planning, updated power system (including power market) modeling, or updated reliability planning and modeling by grid operators.

(4) COST SHARING.—In awarding Federal financial assistance (including grants, loans, and any other form of financial assistance) to fund eligible activities under this subsection, the Secretary shall require cost sharing in accordance with section 988 of the Energy Policy Act of 2005 (42 U.S.C. 16352).

(5) COORDINATION.—In carrying out the Advanced Energy Technology and Grid Services Program established under this subsection, the Secretary, to the maximum extent practicable, shall coordinate with existing programs of the Department of Energy that focus on grid modernization efforts.

SEC. 5104. ADVANCED ENERGY AND GRID EFFICIENCY STUDIES AND REPORT.

(a) STUDIES.—

(1) ADVANCED ENERGY STUDY.—The Secretary, in coordination with the Commission, shall carry out a study of the costs and benefits to consumers of updating power system planning, modeling, and operational practices, including reliability-related planning, and energy market participation rules on advanced energy technologies and resources, including distributed energy technologies and resources, such as—

(A) energy storage technologies;

(B) energy efficiency and transmission efficiency technologies;

(C) distributed solar and wind energy generation;

(D) fuel cells;

(E) smart thermostats and smart building technologies;

(F) demand response technologies, including natural gas demand response technologies;

(G) advanced metering technologies;

(H) electric vehicles and electric vehicle charging infrastructure;

(I) any aggregation of the distributed energy technologies and resources described in subparagraph (A) or (C); and

(J) any other advanced energy technologies, as determined by the Secretary.

(2) GRID EFFICIENCY STUDY.—

(A) IN GENERAL.—The Secretary, in coordination with the Commission, shall carry out a study of the barriers and opportunities for advanced energy technologies that provide increased, more efficient, or more effective delivery over the existing transmission network.

(B) REQUIREMENTS.—The study under subparagraph (A) shall include—

(i) an examination of—

(I) the reliability, resilience, and economic benefits of technologies such as power flow control, topology optimization, and dynamic line ratings;

(II) the costs, benefits, and challenges associated with deployment of the advanced energy technologies described in subparagraph (A); and

(III) the impact of grid efficiency improvements on wholesale and retail electricity rates; and

(ii) an analysis of the role of financial and regulatory incentives in the deploy-

ment of advanced energy technologies, as determined by the Secretary.

(b) REPORT.—Not later than 18 months 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 Committee on Energy and Commerce of the House of Representatives a report describing the results of the studies under paragraphs (1) and (2) of subsection (a).

PART 2—TRANSMISSION PLANNING

SEC. 5111. INTERREGIONAL TRANSMISSION PLANNING REPORT.

Not later than 6 months after the date of enactment of this Act, the Secretary of Energy shall submit to Congress a report that—

(1) examines the effectiveness of interregional transmission planning processes for identifying transmission projects across regions that provide economic, reliability, or operational benefits, taking into consideration the public interest, the integrity of markets, and the protection of consumers;

(2) evaluates the current architecture of regional electricity grids (including international transmission connections of such grids) that together

comprise the Nation's electricity grid, with respect to—

(A) potential growth in renewable energy generation, including energy generation from offshore wind;

(B) potential growth in electricity demand; and

(C) retirement of existing electricity generation assets;

(3) analyzes—

(A) the range of benefits that interregional transmission provides;

(B) the impact of basing transmission project approvals on a comprehensive assessment of the multiple benefits provided;

(C) synchronization of processes described in paragraph (1) among neighboring regions;

(D) how often interregional transmission planning should be completed;

(E) whether voltage, size, or cost requirements should be a factor in the approval of interregional transmission projects;

(F) cost allocation methodologies for interregional transmission projects; and

(G) current barriers and challenges to construction of interregional transmission projects; and

(4) identifies potential changes, based on the analysis under paragraph (3), to the processes described in paragraph (1) to ensure the most efficient, cost effective, and broadly beneficial transmission projects are selected for construction.

SEC. 5112. INTERREGIONAL TRANSMISSION PLANNING RULEMAKING.

(a) IN GENERAL.—Not later than 6 months after the date of the enactment of this section, the Federal Energy Regulatory Commission (hereinafter in this section referred to as ''the Commission'') shall initiate a rulemaking to increase the effectiveness of the interregional transmission planning process.

(b) ASSESSMENT.—In conducting the rulemaking under subsection (a), the Commission shall assess—

(1) the effectiveness of interregional transmission planning processes for identifying transmission planning solutions that provide economic, reliability, operation, and public policy benefits, taking into consideration—

(A) the public interest;

(B) the integrity of markets; and

(C) the protection of consumers; and

(2) proposed changes to the processes described in paragraph (1) to ensure that efficient, cost-effective, and broadly beneficial transmission solutions are selected for construction, taking into consideration—

(A) the public interest;

(B) the integrity of markets;

(C) the protection of consumers; and

(D) the range of benefits that interregional transmission provides.

(c) EMPHASIS.—In conducting the rulemaking under subsection (a), the Commission shall develop rules that emphasize—

(1) the need for a solution to secure approval based on a comprehensive assessment of the multiple benefits the solution is expected to provide;

(2) that interregional benefit analyses made between multiple regions should not be subject to reassessment by a single regional entity;

(3) the importance of synchronizing the planning processes between regions that neighbor one another, including using one timeline with a single set of needs, input assumptions, and benefit metrics;

(4) that evaluation of long-term scenarios should align with the expected life of an interregional transmission solution;

(5) that transmission planning authorities should allow for the identification and joint evaluation between regions of alternative proposals;

(6) that the interregional transmission planning process should take place not less frequently than once every 3 years;

(7) the elimination of arbitrary voltage, size, or cost requirements for an interregional transmission solution; and

(8) cost allocation methodologies that reflect the multiple benefits provided by an interregional transmission solution.

(d) TIMING.—Not later than 18 months after the date of the enactment of this section, the Commission shall complete the rulemaking initiated under subsection (a).

(e) DEFINITIONS.—In this section:

(1) INTERREGIONAL BENEFIT ANALYSIS.—The term ''interregional benefit analysis'' means the identification and evaluation of the estimated benefits of interregional transmission facilities in two or more neighboring transmission planning regions to

meet the needs for transmission system reliability, resilience, economic, and public policy requirements.

(2) INTERREGIONAL TRANSMISSION PLANNING PROCESS.—The term ''interregional transmission planning process'' means an evaluation of transmission needs established by public utility transmission providers in two or more neighboring transmission planning regions that are jointly evaluated by those regions.

(3) INTERREGIONAL TRANSMISSION SOLUTION.—The term ''interregional transmission solution'' means an interregional transmission facility that is evaluated by two or more neighboring transmission planning regions and determined by each of those regions for the ability of the project to efficiently or cost effectively meet regional transmission needs or to provide substantial benefits that are not addressed in either of the region's regional planning processes.

(4) TRANSMISSION PLANNING AUTHORITY.—The term ''transmission planning authority'' means the public utility transmission provider within a transmission planning region that is required to create a regional transmission plan that identifies

transmission facilities and nontransmission alternatives needed to meet regional needs.

(5) TRANSMISSION PLANNING REGIONS.—The term ''transmission planning regions'' means the transmission planning regions recognized by the Commission as compliant with the final rule entitled ''Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities'' located at part 35 of title 18, Code of Federal Regulations (or any successor regulation).

Subtitle B—State Energy Security Plans

SEC. 5201. STATE ENERGY SECURITY PLANS.

(a) IN GENERAL.—Part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.) is amended by adding at the end the following:

''SEC. 367. STATE ENERGY SECURITY PLANS.

''(a) IN GENERAL.—Federal financial assistance made available to a State under this part may be used for the implementation, review, and revision of a State energy security plan that assesses the State's existing circumstances and proposes methods to strengthen the ability of the State, in consultation with owners and operators of energy infrastructure in such State, to—

''(1) secure the energy infrastructure of the State against all physical and cybersecurity threats;

''(2) mitigate the risk of energy supply disruptions to the State and enhance the response to, and recovery from, energy disruptions; and

''(3) ensure the State has a reliable, secure, and resilient energy infrastructure.

''(b) CONTENTS OF PLAN.—A State energy security plan described in subsection (a) shall—

''(1) address all fuels, including petroleum products, other liquid fuels, coal, electricity, and natural gas, as well as regulated and unregulated energy providers;

''(2) provide a State energy profile, including an assessment of energy production, distribution, and end-use;

''(3) address potential hazards to each energy sector or system, including physical threats and cybersecurity threats and vulnerabilities;

''(4) provide a risk assessment of energy infrastructure and cross-sector interdependencies;

''(5) provide a risk mitigation approach to enhance reliability and end-use resilience; and

''(6) address multi-State, Indian Tribe, and regional coordination planning and response, and to

the extent practicable, encourage mutual assistance in cyber and physical response plans.

''(c) COORDINATION.—In developing a State energy security plan under this section, the energy office of the State shall, to the extent practicable, coordinate with—

''(1) the public utility or service commission of the State;

''(2) energy providers from the private sector; and

''(3) other entities responsible for maintaining fuel or electric reliability.

''(d) FINANCIAL ASSISTANCE.—A State is not eligible to receive Federal financial assistance under this part, for any purpose, for a fiscal year unless the Governor of such State submits to the Secretary, with respect to such fiscal year—

''(1) a State energy security plan described in subsection (a) that meets the requirements of subsection (b); or

''(2) after an annual review of the State energy security plan by the Governor—

''(A) any necessary revisions to such plan; or

''(B) a certification that no revisions to such plan are necessary.

''(e) TECHNICAL ASSISTANCE.—Upon request of the Governor of a State, the Secretary may provide information and technical assistance, and other assistance, in the development, implementation, or revision of a State energy security plan.

''(f) SUNSET.—This section shall expire on October 31, 2024.''.

(b) TECHNICAL AND CONFORMING AMENDMENTS.—

(1) CONFORMING AMENDMENTS.—Section 363 of the Energy Policy and Conservation Act (42 U.S.C. 6323) is amended—

(A) by redesignating subsection (f) as subsection (e); and

(B) by striking subsection (e).

(2) TECHNICAL AMENDMENT.—Section 366(3)(B)(i) of the Energy Policy and Conservation Act (42 U.S.C. 6326(3)(B)(i)) is amended by striking ''approved under section 367''.

(3) REFERENCE.—The item relating to ''Department of Energy—Energy Conservation'' in title II of the Department of the Interior and Related Agencies Appropriations Act, 1985 (42 U.S.C. 6323a) is amended by striking ''sections 361 through 366'' and inserting ''sections 361 through 367''.

(4) TABLE OF SECTIONS.—The table of sections for part D of title III of the Energy Policy and Conservation Act is amended by adding at the end the following:

''Sec. 367. State energy security plans.''.

Subtitle C—Research and Development

PART 1—BETTER ENERGY STORAGE TECHNOLOGY

SEC. 5301. ENERGY STORAGE.

(a) IN GENERAL.—The United States Energy Storage Competitiveness Act of 2007 (42 U.S.C. 17231) is amended—

(1) by redesignating subsections (l) through (p) as subsections (p) through (t), respectively; and

(2) by inserting after subsection (k) the following:

''(l) ENERGY STORAGE RESEARCH AND DEVELOPMENT PROGRAM.—

''(1) IN GENERAL.—Not later than 180 days after the date of enactment of this subsection, the Secretary shall establish a research and development program for energy storage systems, components, and materials across multiple program offices of the Department.

''(2) REQUIREMENTS.—In carrying out the program under paragraph (1), the Secretary shall—

''(A) coordinate across all relevant program offices throughout the Department, including the Office of Electricity, the Office of Energy Efficiency and Renewable Energy, the Advanced Research Projects Agency – Energy, the Office of Science, and the Office of Cybersecurity, Energy Security, and Emergency Response;

''(B) adopt long-term cost, performance, and demonstration targets for different types of energy storage systems and for use in a variety of regions, including rural areas;

''(C) incorporate considerations of sustainability, sourcing, recycling, reuse, and disposal of materials, including critical elements, in the design of energy storage systems;

''(D) identify energy storage duration needs;

''(E) analyze the need for various types of energy storage to improve electric grid resilience and reliability; and

''(F) support research and development of advanced manufacturing technologies that have

the potential to improve United States competitiveness in energy storage manufacturing.

''(3) STRATEGIC PLAN.—

''(A) IN GENERAL.—No later than 180 days after the date of enactment of this subsection, the Secretary shall develop a 5-year strategic plan identifying research, development, demonstration, and commercial application goals for the program in accordance with this section. The Secretary shall submit this 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.

''(B) CONTENTS.—The strategic plan submitted under subparagraph (A) shall—

''(i) identify programs at the Department related to energy storage systems that support the research and development activities described in paragraph (4), and the demonstration projects under subsection (m); and

''(ii) include timelines for the accomplishment of goals developed under the plan.

''(C) UPDATES TO PLAN.—Not less frequently than once every 3 years, 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 an updated version of the plan under subparagraph (A).

''(4) RESEARCH AND DEVELOPMENT.—In carrying out the program established in paragraph (1), the Secretary shall focus on developing—

''(A) energy storage systems that can store energy and deliver stored energy for a minimum of 6 hours in duration to balance electricity needs over the course of a single day;

''(B) long-duration energy storage systems that can store energy and deliver stored energy for 10 to 100 hours in duration; and

''(C) energy storage systems that can store energy and deliver stored energy over several months and address seasonal scale variations in supply and demand.

''(5) TESTING AND VALIDATION.—The Secretary shall support the standardized testing and validation of energy storage systems under the program through collaboration with 1 or more National

Laboratories, including the development of methodologies to independently validate energy storage technologies by—

"(A) performance of energy storage systems on the electric grid, including—

"(i) when appropriate, testing of application-driven charge and discharge protocols;

"(ii) evaluation of power capacity and energy output;

"(iii) degradation of the energy storage systems from cycling and aging;

"(iv) safety; and

"(v) reliability testing under grid duty cycles; and

"(B) prediction of lifetime metrics.

"(6) COORDINATION.—In carrying out the program established in paragraph (1), the Secretary shall coordinate with—

"(A) programs and offices that aim to increase domestic manufacturing and production of energy storage systems, such as those within the Department and within the National Institute of Standards and Technology;

''(B) other Federal agencies that are carrying out initiatives to increase energy reliability through the development of energy storage systems, including the Department of Defense; and

''(C) other stakeholders working to advance the development of commercially viable energy storage systems.

''(7) TECHNICAL ASSISTANCE PROGRAM.—

''(A) IN GENERAL.—The Secretary shall provide technical assistance for commercial application of energy storage technologies to eligible entities.

''(B) TECHNICAL ASSISTANCE.—Technical assistance provided under this paragraph—

''(i) may include assistance with—

''(I) assessment of relevant technical and geographic characteristics;

''(II) interconnection of electricity storage systems with the electric grid; and

''(III) engineering design; and

''(ii) may not include assistance relating to modification of Federal, State, or

local regulations or policies with respect to energy storage systems.

''(C) APPLICATIONS.—

''(i) IN GENERAL.—The Secretary shall seek applications for technical assistance under the program—

''(I) on a competitive basis; and

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

''(ii) PRIORITIES.—In selecting eligible entities for technical assistance for commercial applications, the Secretary shall give priority to eligible entities with projects that have the greatest potential for—

''(I) strengthening the reliability and resilience of the electric grid to the impact of extreme weather events, power grid failures, and interruptions in supply of electricity;

''(II) reducing the cost of energy storage systems; or

''(III) facilitating the use of net zero emission energy resources.

"(8) PROGRAM DEFINED.—In this subsection (except in paragraph (9)), the term 'program' means the research and development program established under paragraph (1).

"(9) TECHNICAL ASSISTANCE GRANT PROGRAM.—

"(A) IN GENERAL.—The Secretary shall establish a technical assistance grant program (referred to in this subsection as the 'program') to award grants to eligible entities so that entities may seek technical assistance outside of the Department of Energy to identify, evaluate, plan, design, and develop processes to procure energy storage systems.

"(B) TECHNICAL ASSISTANCE.—

"(i) IN GENERAL.—Grants for technical assistance may be used to obtain technical assistance with one or more of the following activities relating to energy storage systems:

"(I) Identification of opportunities to use energy storage systems.

"(II) Assessment of technical and economic characteristics.

"(III) Utility interconnection.

"(IV) Permitting and siting issues.

"(V) Business planning and financial analysis.

"(VI) Engineering design.

"(VII) Carrying out initial assessment to identify net system benefits of using energy storage systems.

"(VIII) Obtaining guidance relating to methods to assess energy storage in long-term resource planning and resource procurement.

"(IX) Carrying out studies to assess the cost-benefit ratio of energy storage systems.

"(X) Obtaining guidance on complying with state and local regulatory technical standards, including siting and permitting standards.

"(ii) EXCLUSION.—The grants for technical assistance described in subparagraph (A) shall not be used for assistance relating to modification of Federal, State, or local regulations or policies relating to energy storage systems.

''(C) APPLICATIONS.—

''(i) IN GENERAL.—An eligible entity desiring grants for technical assistance 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.

''(ii) APPLICATION PROCESS.—The Secretary shall seek applications for technical assistance grants under the program—

''(I) on a competitive basis; and

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

''(D) PRIORITIES.—In selecting eligible entities for grants under the program, the Secretary shall give priority to eligible entities with projects that have the greatest potential for—

''(i) strengthening the reliability of energy infrastructure and the resilience of energy infrastructure to the effects of extreme weather events, power grid failures, and interruptions in supply of power;

"(ii) reducing the cost of energy storage systems;

"(iii) facilitating the use of renewable energy resources;

"(iv) minimizing environmental impact, including regulated air pollutants and greenhouse gas emissions;

"(v) improving the feasibility of microgrids or island-mode operation, particularly in rural areas, including rural areas with high energy costs; and

"(vi) maximizing local job creation.

"(E) RULES AND PROCEDURES.—

"(i) RULES.—Not later than 180 days after the date of enactment of this Act, the Secretary shall, by rule, establish procedures for carrying out the program.

"(ii) GRANTS.—Not later than 120 days after the date on which the Secretary establishes procedures for the program under subparagraph (A), the Secretary shall issue grants under this subsection.

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

''(i) not less frequently than once every 2 years, a report describing the performance of the program under this subsection, including a synthesis and analysis of any information the Secretary requires grant recipients to provide to the Secretary as a condition of receiving a grant; and

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

''(10) DEPARTMENT OF ENERGY WORKSHOPS.—The Secretary shall hold one or more workshops during each of calendar years 2021 and 2023 to facilitate the sharing, across the Department of Energy, the States, local and Tribal governments, industry, and the academic research community, of research developments and new technical knowledge gained in carrying out this subsection.''.

(b) ENERGY STORAGE DEMONSTRATION PROGRAM.—The United States Energy Storage Competitiveness Act of 2007 (42 U.S.C. 17231), as amended, is further amended by inserting after subsection (l), as added by subsection (a), the following:

''(m) ENERGY STORAGE DEMONSTRATION PROGRAM.—

''(1) ESTABLISHMENT.—The Secretary shall establish a competitive grant program for the demonstration of energy storage systems, as identified by the Secretary, that use either—

''(A) a single system; or

''(B) aggregations of multiple systems.

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

''(A) ensure regional diversity among eligible entities that receive the grants, including participation by rural States and small States;

''(B) ensure that specific projects selected for grants—

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

''(ii) are designed to achieve one or more of the objectives described in paragraph (3);

''(C) give consideration to proposals from eligible entities for securing energy storage

through competitive procurement or contract for service; and

"(D) prioritize projects that leverage matching funds from non-Federal sources.

"(3) OBJECTIVES.—Each demonstration project selected for a grant under paragraph (1) shall include one or more of the following objectives:

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

"(B) To improve the reliability of the transmission and distribution system, 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 or demand.

"(E) To reduce peak loads of homes and businesses, particularly to defer or avoid investments in new electric grid capacity.

"(F) To advance power conversion systems to make the systems smarter, more efficient, able to communicate with other inverters, and able to control voltage.

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

"(H) To integrate one or more energy resources, including renewable energy resources, at the source or away from the source.

"(I) To increase the feasibility of microgrids or island-mode operation.

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

"(4) RESTRICTION ON USE OF FUNDS.—Any eligible entity that receives a grant under paragraph (1) may only use the grant to fund programs relating to the demonstration of energy storage systems connected to the electric grid, or that provides bi-directional energy storage capable of providing back-up energy in the event of grid outages, including energy storage systems sited behind a customer revenue meter.

"(5) COST SHARING.—In carrying out this section, the Secretary shall require cost sharing under

this section in accordance with section 988 of the Energy Policy Act of 2005 (42 U.S.C. 16352).

''(6) NO PROJECT OWNERSHIP INTEREST.—The United States shall hold no equity or other ownership interest in an energy storage system for which a grant is provided under paragraph (1).

''(7) RULES AND PROCEDURES; AWARDING OF GRANTS.—

''(A) RULES AND PROCEDURES.—Not later than 180 days after the date of enactment of this subsection, the Secretary shall adopt rules and procedures for carrying out the grant program under subsection (m).

''(B) AWARDING OF GRANTS.—Not later than 1 year after the date on which the rules and procedures under paragraph (A) are established, the Secretary shall award the initial grants provided under this section.

''(8) REPORTS.—The Secretary shall submit to Congress and make publicly available—

''(A) not less frequently than once every 2 years for the duration of the grant program under subsection (m), a report describing the performance of the grant program, including a synthesis and analysis of any information the

Secretary requires grant recipients to provide to the Secretary as a condition of receiving a grant; and

''(B) on termination of the grant program under subsection (m), an assessment of the success of, and education provided by, the measures carried out by grant recipients under the grant program.

''(9) PROGRAM DEFINED.—In this subsection, the term 'program' means the demonstration program established under paragraph (1).''.

(c) AUTHORIZATION OF APPROPRIATIONS.—The United States Energy Storage Competitiveness Act of 2007 (42 U.S.C. 17231) is amended, in subsection (t) (as redesignated by subsection (a)(1))—

(1) in paragraph (5), by striking ''and'' at the end;

(2) in paragraph (6), by striking the period at the end and inserting ''; ''; and

(3) by adding at the end the following:

''(7) the research and development program for energy storage systems under subsection (l)—

''(A) $65,100,000 for fiscal year 2021;

''(B) $68,355,000 for fiscal year 2022;

''(C) $71,773,000 for fiscal year 2023;

''(D) $75,362,000 for fiscal year 2024; and

''(E) $79,130,000 for fiscal year 2025; and

''(8) the demonstration program for energy storage systems under subsection (m), $50,000,000 for each of fiscal years 2021 through 2025.''.

SEC. 5302. CRITICAL MINERAL RECYCLING AND REUSE RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAM.

The United States Energy Storage Competitiveness Act of 2007 (42 U.S.C. 17231) is amended by inserting after subsection (m), as added by section 5301(b) of this Act, the following:

''(n) CRITICAL MINERAL RECYCLING AND REUSE RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAM.—

''(1) DEFINITIONS.—In this subsection:

''(A) CRITICAL MINERAL.—The term 'critical mineral' means any of a class of chemical elements that have a high risk of a supply disruption and are critical to one or more new, energy-related technologies such that a shortage of such element would significantly inhibit large-scale deployment of technologies that store energy.

"(B) RECYCLING.—The term 'recycling' means the separation of critical minerals embedded within an energy storage system through physical or chemical means and reuse of those separated critical minerals in other technologies.

"(2) ESTABLISHMENT.—Not later than 180 days after the date of enactment of this subsection, the Secretary shall establish a research, development, and demonstration program of recycling of energy storage systems containing critical minerals.

"(3) RESEARCH, DEVELOPMENT, AND DEMONSTRATION.—In carrying out the program, the Secretary may focus research, development, and demonstration activities on—

"(A) technologies, process improvements, and design optimizations that facilitate and promote recycling, including—

"(i) improvement of efficiency and rates of collection of products and scrap containing critical minerals from consumer, industrial, and other waste streams;

"(ii) separation and sorting of component materials in energy storage systems containing critical minerals, including im-

proving the recyclability of such energy storage systems;

"(iii) safe storage of energy storage systems, including reducing fire risk;

"(iv) safe transportation of energy storage systems and components; and

"(v) development of technologies to advance energy storage recycling facility infrastructure, including integrated recycling facilities that can process multiple materials;

"(B) research and development of technologies that mitigate emissions and environmental impacts that arise from recycling, including disposal of toxic reagents and byproducts related to recycling processes;

"(C) research and development of technologies to enable recycling of critical materials from batteries in electric vehicles;

"(D) research on and analysis of non-technical barriers to improving the transportation of energy storage systems containing critical minerals; and

"(E) research on technologies and methods to enable the safe disposal of energy storage

systems containing critical minerals, including waste materials and components recovered during the recycling process.

''(4) REPORT TO CONGRESS.—Not later than 2 years after the date of enactment of this subsection, and every 3 years thereafter, 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 report summarizing the activities, findings, and progress of the program.

''(o) DEFINITIONS.—For purposes of subsections (l), (m), and (n), the following definitions apply:

''(1) ENERGY STORAGE SYSTEM.—The term 'energy storage system' means equipment or facilities relating to the electric grid that are capable of absorbing and converting energy, as applicable, storing the energy for a period of time, and dispatching the energy, and that—

''(A) use mechanical, electrochemical, biochemical, or thermal processes, to convert and store energy that was generated at an earlier time for use at a later time;

''(B) use mechanical, electrochemical, biochemical, or thermal processes to convert and

store energy generated from mechanical processes that would otherwise be wasted for delivery at a later time; or

''(C) convert and store energy in an electric, thermal, or gaseous state for consumption at a later time in a manner that avoids the need to use electricity or other fuel sources at that later time, as is offered by grid-enabled water heaters, building heaters or coolers, electric vehicles, mini-pumped hydroelectric facilities, electrolysis processes that make hydrogen for transportation or industrial needs, or any other load shaping mechanism that includes energy storage.

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

''(A) a State, territory, or possession of the United States;

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

''(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) a rural electric cooperative;

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

''(iii) an investor-owned utility; and

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

''(3) ISLAND MODE.—The term 'island mode' means a mode in which a distributed generator or energy storage system continues to power a location in the absence of electric power from the primary source.

''(4) MICROGRID.—The term 'microgrid' means an integrated energy system consisting of interconnected loads and distributed energy resources, including generators and energy storage systems, within clearly defined electrical boundaries that—

''(A) acts as a single controllable entity with respect to the electric grid;

''(B) can connect to, and disconnect from, the electric grid to operate in both grid-connected mode and island mode.

''(5) 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).''.

PART 2—GRID MODERNIZATION RESEARCH AND DEVELOPMENT

SEC. 5321. SMART GRID REGIONAL DEMONSTRATION INITIATIVE.

Section 1304 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17384) is amended—

(1) in subsection (a), by inserting ''research, development, and demonstration'' before ''program'';

(2) in subsection (b)—

(A) by amending paragraph (1) to read as follows:

''(1) IN GENERAL.—The Secretary shall establish a smart grid regional demonstration initiative (referred to in this subsection as the 'Initiative') composed of demonstration projects focused on cost-effective, advanced technologies for use in power grid

sensing, communications, analysis, power flow control, visualization, distribution automation, industrial control systems, dynamic line rating systems, grid redesign, and the integration of distributed energy resources.''; and

(B) in paragraph (2)—

(i) in subparagraph (D), by striking ''and'' at the end;

(ii) in subparagraph (E), by striking the period and inserting ''; and''; and

(iii) by inserting at the end the following:

''(F) to encourage the commercial application of advanced distribution automation technologies that exert intelligent control over electrical grid functions at the distribution level to improve system resilience.''.

SEC. 5322. SMART GRID MODELING, VISUALIZATION, ARCHITECTURE, AND CONTROLS.

Title XIII of the Energy Independence and Security Act of 2007 (42 U.S.C. 17381 et seq.) is amended by inserting after section 1304 the following:

"SEC. 1304a. SMART GRID MODELING, VISUALIZATION, ARCHITECTURE, AND CONTROLS.

"(a) IN GENERAL.—Not later than 180 days after the enactment of this section, the Secretary shall establish a program of research, development, demonstration, and commercial application on electric grid modeling, sensing, visualization, architecture development, and advanced operation and controls.

"(b) MODELING RESEARCH AND DEVELOPMENT.—The Secretary shall support development of models of emerging technologies and systems to facilitate the secure and reliable design, planning, and operation of the electric grid for use by industry stakeholders. In particular, the Secretary shall support development of—

"(1) models to analyze and predict the effects of adverse physical and cyber events on the electric grid;

"(2) coupled models of electrical, physical, and cyber systems;

"(3) models of existing and emerging technologies being deployed on the electric grid due to projected changes in the electric generation mix and loads, for a variety of regional characteristics; and

"(4) integrated models of the communications, transmission, distribution, and other interdependent

systems for existing, new, and emerging technologies.

''(c) SITUATIONAL AWARENESS RESEARCH AND DEVELOPMENT.—

''(1) IN GENERAL.—The Secretary shall support development of computational tools and technologies to improve sensing, monitoring, and visualization of the electric grid for real-time situational awareness and decision support tools that enable improved operation of the power system, including utility, non-utility, and customer grid-connected assets, for use by industry partners.

''(2) DATA USE.—In developing visualization capabilities under this section, the Secretary shall develop tools for industry stakeholders to use to analyze data collected from advanced measurement and monitoring technologies, including data from phasor measurement units and advanced metering units.

''(3) SEVERE EVENTS.—The Secretary shall prioritize enhancing cyber and physical situational awareness of the electric grid during adverse man-made and naturally-occurring events.

''(d) ARCHITECTURE.—The Secretary shall conduct research in collaboration with industry stakeholders to develop model grid architectures to assist with wide-area

transmission and distribution planning that incorporate expected changes to the modern electric grid. In supporting the development of model grid architectures, the Secretary shall—

''(1) analyze a variety of grid architecture scenarios that range from minor upgrades to existing transmission grid infrastructure to scenarios that involve the replacement of significant portions of existing transmission grid infrastructure;

''(2) analyze the effects of the increasing proliferation of renewable and other zero emissions energy generation sources, increasing use of distributed resources owned by non-utility entities, and the use of digital and automated controls not managed by grid operators;

''(3) include a variety of new and emerging distribution grid technologies, including distributed energy resources, electric vehicle charging stations, distribution automation technologies, energy storage, and renewable energy sources;

''(4) analyze the effects of local load balancing and other forms of decentralized control;

''(5) analyze the effects of changes to grid architectures resulting from modernizing electric grid systems, including communications, controls, mar-

kets, consumer choice, emergency response, electrification, and cybersecurity concerns; and

''(6) develop integrated grid architectures that incorporate system resilience for cyber, physical, and communications systems.

''(e) OPERATION AND CONTROLS RESEARCH AND DEVELOPMENT.—The Secretary shall conduct research to develop improvements to the operation and controls of the electric grid, in coordination with industry partners. Such activities shall include—

''(1) a training facility or facilities to allow grid operators to gain operational experience with advanced grid control concepts and technologies;

''(2) development of cost-effective advanced operation and control concepts and technologies, such as adaptive islanding, dynamic line rating systems, power flow controllers, network topology optimization, smart circuit breakers, intelligent load shedding, and fault-tolerant control system architectures;

''(3) development of real-time control concepts using artificial intelligence and machine learning for improved electric grid resilience; and

''(4) utilization of advanced data analytics including load forecasting, power flow modeling, equip-

ment failure prediction, resource optimization, risk analysis, and decision analysis.

''(f) INTEROPERABILITY RESEARCH AND DEVELOPMENT.—The Secretary shall conduct research and development on tools and technologies that improve the interoperability and compatibility of new and emerging components, technologies, and systems with existing electric grid infrastructure.

''(g) UNDERGROUND TRANSMISSION AND DISTRIBUTION LINES.—In carrying out the program under subsection (a), the Secretary shall support research and development on underground transmission and distribution lines. This shall include research on—

''(1) methods for lowering the costs of underground transmission and distribution lines, including through novel installation techniques and materials considerations;

''(2) techniques to improve the lifespan of underground transmission and distribution lines;

''(3) wireless sensors to improve safety of underground transmission and distribution lines and to predict, identify, detect, and transmit information about degradation and faults; and

''(4) methods for improving the resilience and reliability of underground transmission and distribu-

tion lines, including by mitigating the impact of flooding, storm surge, and seasonal climate cycles on degradation of and damage to underground transmission and distribution lines.

''(h) COMPUTING RESOURCES AND DATA COORDINATION RESEARCH AND DEVELOPMENT.—In carrying out this section, the Secretary shall—

''(1) leverage existing computing resources at the National Laboratories;

''(2) develop voluntary standards for data taxonomies and communication protocols in coordination with public and private sector stakeholders; and

''(3) comply with section 5327 of the Clean Economy Jobs and Innovation Act.

''(i) INFORMATION SHARING.—None of the activities authorized in this section shall require private entities to share information or data with the Secretary.

''(j) RESILIENCE.—In this section, the term 'resilience' means the ability to withstand and reduce the magnitude or duration of disruptive events, which includes the capability to anticipate, absorb, adapt to, or rapidly recover from such an event, including from deliberate attacks, accidents, and naturally occurring threats or incidents.''.

SEC. 5323. HYBRID ENERGY SYSTEMS.

Title XIII of the Energy Independence and Security Act of 2007 (42 U.S.C. 17381 et seq.), as amended, is amended by adding at the end the following:

"SEC. 1310. HYBRID ENERGY SYSTEMS.

''(a) IN GENERAL.—Not later than 180 days after the enactment of this section, the Secretary shall establish a research, development, and demonstration program to develop cost-effective hybrid energy systems, including—

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

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

''(3) development of hybrid 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 hybrid energy systems; and

''(5) research on incorporation of various technologies for hybrid 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 the date of the enactment of this section, 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 hybrid energy systems. The strategic plan shall include—

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

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

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

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

"(E) analysis of the technical and economic feasibility of adoption of different hybrid 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 section, 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;

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

''(5) comply with section 5326 of the Clean Economy Jobs and Innovation Act.

''(d) HYBRID ENERGY SYSTEM DEFINED.—The term 'hybrid 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.''.

SEC. 5324. GRID INTEGRATION RESEARCH AND DEVELOPMENT.

(a) INTEGRATING DISTRIBUTED ENERGY RESOURCES ONTO THE ELECTRIC GRID.—Section 925(a) of the Energy Policy Act of 2005 (42 U.S.C. 16215) is amended—

(1) by redesignating paragraphs (10) and (11) as paragraphs (12) and (13), respectively; and

(2) by inserting after paragraph (9) the following:

''(10) the development of cost-effective technologies that enable two-way information and power flow between distributed energy resources and the electric grid;

''(11) the development of technologies and concepts that enable interoperability between distributed energy resources and other behind-the-meter devices and the electric grid;''.

(b) INTEGRATING RENEWABLE ENERGY ONTO THE ELECTRIC GRID.—Subtitle C of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16231 et seq.) is amended by adding at the end the following:

''SEC. 936. RESEARCH AND DEVELOPMENT INTO INTEGRATING RENEWABLE ENERGY ONTO THE ELECTRIC GRID.

''(a) IN GENERAL.—Not later than 180 days after the enactment of this section, the Secretary shall establish a research, development, and demonstration program on technologies that enable integration of renewable energy generation sources onto the electric grid across multiple program offices of the Department. The program shall include—

''(1) forecasting for predicting generation from variable renewable energy sources;

''(2) development of cost-effective low-loss, long-distance transmission lines; and

''(3) development of cost-effective advanced technologies for variable renewable generation sources to provide grid services.

''(b) COORDINATION.—In carrying out this program, the Secretary shall—

''(1) coordinate across all relevant program offices at the Department to achieve the goals established in this section, including the Office of Electricity; and

''(2) comply with section 5326 of the Clean Economy Jobs and Innovation Act.

''(c) ADOPTION OF TECHNOLOGIES.—In carrying out this section, the Secretary shall consider barriers to adoption and commercial application of technologies that enable integration of renewable energy sources onto the electric grid, including cost and other economic barriers, and shall coordinate with relevant entities to reduce these barriers.''.

(c) INTEGRATING ELECTRIC VEHICLES ONTO THE ELECTRIC GRID.—Subtitle B of title I of the Energy Inde-

pendence and Security Act of 2007 (42 U.S.C. 17011 et seq.) is amended by adding at the end the following:

"SEC. 137. RESEARCH AND DEVELOPMENT INTO INTEGRATING ELECTRIC VEHICLES ONTO THE ELECTRIC GRID.

"(a) IN GENERAL.—The Secretary shall establish a research, development, and demonstration program to advance the integration of electric vehicles, including plug-in hybrid electric vehicles, onto the electric grid.

"(b) VEHICLES-TO-GRID INTEGRATION ASSESSMENT REPORT.—Not later than 1 year after the enactment of this section, 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 report on the results of a study that examines the research, development, and demonstration opportunities, challenges, and standards needed for integrating electric vehicles onto the electric grid.

"(1) REPORT REQUIREMENTS.—The report shall include—

"(A) an evaluation of the use of electric vehicles to maintain the reliability of the electric grid, including—

"(i) the use of electric vehicles for demand response, load shaping, emergency power, and frequency regulation; and

"(ii) the potential for the reuse of spent electric vehicle batteries for stationary grid storage;

"(B) the impact of grid integration on electric vehicles, including—

"(i) the impact of bi-directional electricity flow on battery degradation; and

"(ii) the implications of the use of electric vehicles for grid services on original equipment manufacturer warranties;

"(C) the impacts to the electric grid of increased penetration of electric vehicles, including—

"(i) the distribution grid infrastructure needed to support an increase in charging capacity;

"(ii) strategies for integrating electric vehicles onto the distribution grid while limiting infrastructure upgrades;

"(iii) the changes in electricity demand over a 24-hour cycle due to electric vehicle charging behavior;

"(iv) the load increases expected from electrifying the transportation sector;

"(v) the potential for customer incentives and other managed charging stations strategies to shift charging off-peak;

"(vi) the technology needed to achieve bi-directional power flow on the distribution grid; and

"(vii) the implementation of smart charging techniques;

"(D) research on the standards needed to integrate electric vehicles with the grid, including communications systems, protocols, and charging stations, in collaboration with the National Institute for Standards and Technology;

"(E) the cybersecurity challenges and needs associated with electrifying the transportation sector; and

"(F) an assessment of the feasibility of adopting technologies developed under the program established under subsection (a) at Department facilities.

"(2) RECOMMENDATIONS.—As part of the Vehicles-to-Grid Integration Assessment Report, the Secretary shall develop a 10-year roadmap to guide

the research, development, and demonstration program to integrate electric vehicles onto the electric grid.

''(3) CONSULTATION.—In developing this report, the Secretary shall consult with relevant stakeholders, including—

''(A) electric vehicle manufacturers;

''(B) electric utilities;

''(C) public utility commissions;

''(D) vehicle battery manufacturers;

''(E) electric vehicle supply equipment manufacturers;

''(F) charging infrastructure manufacturers;

''(G) the National Laboratories; and

''(H) other Federal agencies, as the Secretary determines appropriate.

''(4) UPDATES.—The Secretary shall update the report required under this section every 3 years for the duration of the program under section (a) and shall submit the updated report 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 section, the Secretary shall—

''(1) implement the recommendations set forth in the report in subsection (b);

''(2) coordinate across all relevant program offices at the Department to achieve the goals established in this section, including the Office of Electricity; and

''(3) comply with section 5326 of the Clean Economy Jobs and Innovation Act.

''(d) TESTING CAPABILITIES.—The Secretary shall coordinate with the National Laboratories to develop testing capabilities for the evaluation, rapid prototyping, and optimization of technologies enabling integration of electric vehicles onto the electric grid.''.

(d) RESEARCH AND DEVELOPMENT ON INTEGRATING BUILDINGS ONTO THE ELECTRIC GRID.—Subtitle B of title IV of the Energy Independence and Security Act of 2007 (42 U.S.C. 17081 et seq.) is amended by adding at the end the following:

''SEC. 426. ADVANCED INTEGRATION OF BUILDINGS ONTO THE ELECTRIC GRID.

''(a) BUILDINGS-TO-GRID INTEGRATION REPORT.—Not later than 1 year after the enactment of this section,

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 report on the results of a study that examines the research, development, and demonstration opportunities, challenges, and standards needed to enable components of commercial and residential buildings to serve as dynamic energy loads on and resources for the electric grid.

''(1) REPORT REQUIREMENTS.—The report shall include—

''(A) an assessment of the technologies needed to enable building components as dynamic loads on and resources for the electric grid, including how such technologies can be—

''(i) incorporated into new commercial and residential buildings; and

''(ii) retrofitted in older buildings;

''(B) guidelines for the design of new buildings and building components to enable modern grid interactivity and improve energy efficiency;

''(C) an assessment of barriers to the adoption by building owners of advanced tech-

nologies enabling greater integration of building components onto the electric grid; and

"(D) an assessment of the feasibility of adopting advanced building technologies at Department facilities.

"(2) RECOMMENDATIONS.—As part of the report, the Secretary shall develop a 10-year roadmap to guide the research, development, and demonstration program to enable components of commercial and residential buildings to serve as dynamic energy loads on and resources for the electric grid.

"(3) UPDATES.—The Secretary shall update the report required under this section every 3 years for the duration of the program under subsection (a) and shall submit the updated report to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

"(b) PROGRAM IMPLEMENTATION.—In carrying out this section, the Secretary shall—

"(1) implement the recommendations from the report in subsection (a);

"(2) coordinate across all relevant program offices at the Department to achieve the goals estab-

lished in this section, including the Office of Electricity; and

''(3) comply with section 5326 of the Clean Economy Jobs and Innovation Act.''.

SEC. 5325. INDUSTRY ALLIANCE.

Title XIII of the Energy Independence and Security Act of 2007 (42 U.S.C. 17381 et seq.), as amended, is amended by adding at the end the following:

''SEC. 1311. INDUSTRY ALLIANCE.

''(a) IN GENERAL.—Not later than 180 days after the enactment of this section, the Secretary shall establish an advisory committee (to be known as the 'Industry Alliance') to advise the Secretary on the authorization of research, development, and demonstration projects under sections 1304 and 1304a.

''(b) MEMBERSHIP.—The Industry Alliance shall be composed of members selected by the Secretary that, as a group, are broadly representative of United States electric grid research, development, infrastructure, operations, and manufacturing expertise.

''(c) RESPONSIBILITY.—The Secretary shall annually solicit from the Industry Alliance—

''(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.''.

SEC. 5326. COORDINATION OF EFFORTS.

In carrying out the amendments made by this part, the Secretary shall coordinate with relevant entities to the maximum extent practicable, including—

(1) electric utilities;

(2) private sector entities;

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

(4) transmission organizations;

(5) transmission owners and operators;

(6) distribution organizations;

(7) distribution asset owners and operators;

(8) State, tribal, local, and territorial governments and regulatory authorities;

(9) academic institutions;

(10) the National Laboratories;

(11) other Federal agencies;

(12) nonprofit organizations;

(13) the Federal Energy Regulatory Commission;

(14) the North American Reliability Corporation;

(15) independent system operators; and

(16) programs and program offices at the Department.

SEC. 5327. TECHNICAL AMENDMENTS; AUTHORIZATION OF APPROPRIATIONS.

(a) TECHNICAL AMENDMENTS.—

(1) ENERGY INDEPENDENCE AND SECURITY ACT OF 2007.—Section 1(b) of the Energy Independence and Security Act of 2007 is amended in the table of contents—

(A) by inserting the following after the item related to section 136:

"Sec. 137. Research and development into integrating electric vehicles onto the electric grid.";

(B) by inserting the following after the item related to section 425:

"Sec. 426. Advanced integration of buildings onto the electric grid.";

(C) by inserting the following after the item related to section 1304:

"Sec. 1304a. Smart grid modeling, visualization, architecture, and controls."; and

(D) by inserting the following after the item related to section 1309:

"Sec. 1310. Hybrid energy systems.
"Sec. 1311. Industry Alliance.".

(2) ENERGY POLICY ACT OF 2005.—Section 1(b) of the Energy Policy Act of 2005 is amended in the table of contents by inserting the following after the item related to section 935:

"Sec. 936. Research and development into integrating renewable energy onto the electric grid.".

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated—

(1) to carry out sections 5325 and 5326 and the amendments made by sections 5321 and 5322 of this part—

(A) $175,000,000 for fiscal year 2021;

(B) $180,000,000 for fiscal year 2022;

(C) $185,000,000 for fiscal year 2023;

(D) $190,000,000 for fiscal year 2024; and

(E) $199,500,000 for fiscal year 2025;

(2) to carry out section 5323 of this part—

(A) $21,000,000 for fiscal year 2021;

(B) $22,050,000 for fiscal year 2022;

(C) $23,153,000 for fiscal year 2023;

(D) $24,310,000 for fiscal year 2024; and

(E) $25,525,000 for fiscal year 2025; and

(3) to carry out section 5324 of this part—

(A) $52,500,000 for fiscal year 2021;

(B) $55,152,000 for fiscal year 2022;

(C) $57,882,000 for fiscal year 2023;

(D) $60,775,000 for fiscal year 2024; and

(E) $63,814,000 for fiscal year 2025.

PART 3—GRID SECURITY RESEARCH AND DEVELOPMENT

SEC. 5341. AMENDMENT TO ENERGY INDEPENDENCE AND SECURITY ACT OF 2007.

(a) IN GENERAL.—Title XIII of the Energy Independence and Security Act of 2007 (42 U.S.C. 17381 et seq.), as amended by this Act, is further amended by adding at the end the following:

"SEC. 1312. ENERGY SECTOR SECURITY RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAM.

''(a) IN GENERAL.—The Secretary, in coordination with appropriate Federal agencies, the Electricity Subsector Coordinating Council, the Electric Reliability Organization, State, tribal, local, and territorial governments, the private sector, and other relevant stakeholders, shall carry out a research, development, and demonstration program to protect the electric grid and energy systems, including assets connected to the distribution grid, from cyber and physical attacks by increasing the cyber and physical security capabilities of the energy sector and accelerating the development of relevant technologies and tools.

''(b) DEPARTMENT OF ENERGY.—As part of the initiative described in subsection (a), the Secretary shall award research, development, and demonstration grants to—

''(1) identify cybersecurity risks to the electricity sector, energy systems, and energy infrastructure;

''(2) develop methods and tools to rapidly detect cyber intrusions and cybersecurity incidents, including through the use of data and big data analytics techniques, such as intrusion detection, and security information and event management systems, to validate and verify system behavior;

''(3) assess emerging cybersecurity capabilities that could be applied to energy systems and develop technologies that integrate cybersecurity features and procedures into the design and development of existing and emerging grid technologies, including renewable energy, storage, and demand-side management technologies;

''(4) identify existing vulnerabilities in intelligent electronic devices, advanced analytics systems, and information systems;

''(5) work with relevant entities to develop technologies or concepts that build or retrofit cybersecurity features and procedures into—

''(A) information and energy management system devices, components, software, firmware, and hardware, including distributed control and management systems, and building management systems;

''(B) data storage systems, data management systems, and data analysis processes;

''(C) automated- and manually-controlled devices and equipment for monitoring and stabilizing the electric grid;

''(D) technologies used to synchronize time and develop guidance for operational contingency plans when time synchronization technologies, are compromised;

''(E) power system delivery and end user systems and devices that connect to the grid, including—

''(i) meters, phasor measurement units, and other sensors;

''(ii) distribution automation technologies, smart inverters, and other grid control technologies;

''(iii) distributed generation, energy storage, and other distributed energy technologies;

''(iv) demand response technologies;

''(v) home and building energy management and control systems;

''(vi) electric and plug-in hybrid vehicles and electric vehicle charging systems; and

''(vii) other relevant devices, software, firmware, and hardware; and

''(F) the supply chain of electric grid management system components;

''(6) develop technologies that improve the physical security of information systems, including remote assets;

''(7) integrate human factors research into the design and development of advanced tools and processes for dynamic monitoring, detection, protection, mitigation, response, and cyber situational awareness;

''(8) evaluate and understand the potential consequences of practices used to maintain the cybersecurity of information systems and intelligent electronic devices;

''(9) develop or expand the capabilities of existing cybersecurity test beds to simulate impacts of cyber attacks and combined cyber-physical attacks on information systems and electronic devices, including by increasing access to existing and emerging test beds for cooperative utilities, utilities owned by a political subdivision of a State, such as municipally-owned electric utilities, and other relevant stakeholders; and

''(10) develop technologies that reduce the cost of implementing effective cybersecurity technologies and tools, including updates to these technologies and tools, in the energy sector.

''(c) NATIONAL SCIENCE FOUNDATION.—The National Science Foundation, in coordination with other Federal agencies, shall through its cybersecurity research and development programs—

''(1) support basic research to advance knowledge, applications, technologies, and tools to strengthen the cybersecurity of information systems that support the electric grid and energy systems, including interdisciplinary research in—

''(A) evolutionary systems, theories, mathematics, and models;

''(B) economic and financial theories, mathematics, and models; and

''(C) big data analytical methods, mathematics, computer coding, and algorithms; and

''(2) support cybersecurity education and training focused on information systems for the electric grid and energy workforce, including through the Advanced Technological Education program, the Cybercorps program, graduate research fellowships, and other appropriate programs.

''SEC. 1313. GRID RESILIENCE AND EMERGENCY RESPONSE.

''(a) IN GENERAL.—Not later than 180 days after the enactment of this section, the Secretary, in coordination with appropriate Federal agencies, shall establish a research, development, and demonstration program to enhance resilience and strengthen emergency response and management pertaining to the energy sector.

''(b) GRANTS.—The Secretary shall award grants to eligible entities under subsection (c) on a competitive basis to conduct research and development with the purpose of improving the resilience and reliability of electric grid by—

''(1) developing methods to improve community and governmental preparation for and emergency response to large-area, long-duration electricity interruptions, including through the use of energy effi-

ciency, storage, and distributed generation technologies;

''(2) developing tools to help utilities and communities ensure the continuous delivery of electricity to critical facilities;

''(3) developing tools to improve coordination between utilities and relevant Federal agencies to enable communication, information-sharing, and situational awareness in the event of a physical or cyber-attack on the electric grid;

''(4) developing technologies and capabilities to withstand and address the current and projected impact of the changing climate on energy sector infrastructure, including extreme weather events other natural disasters, and wildfires;

''(5) developing technologies capable of early detection of malfunctioning electrical equipment on the transmission and distribution grid, including detection of spark ignition causing wildfires and risks of vegetation contact;

''(6) assessing upgrades and additions needed to energy sector infrastructure due to projected changes in the energy generation mix and energy demand;

''(7) upgrading tools used to estimate the costs of outages longer than 24 hours; and

''(8) developing tools and technologies to assist with the planning, safe execution of, and safe and timely restoration of power after emergency power shut offs, such as those conducted to reduce risks of wildfires started by grid infrastructure.

''(c) CONCURRENT AND CO-LOCATED DISASTERS.—In carrying out the program under subsection (a), the Secretary shall support research and development on tools, techniques, and technologies for improving electric grid and energy sector safety and resilience in the event of multiple simultaneous or co-located weather or climate events leading to extreme conditions, such as extreme wind, wildfires, and extreme heat.

''(d) ELIGIBLE ENTITIES.—The entities eligible to receive grants under this section include—

''(1) an institution of higher education, including a historically Black college or university and a minority-serving institution.

''(2) a nonprofit organization;

''(3) a National Laboratory;

''(4) a unit of State, local, or tribal government;

''(5) an electric utility or electric cooperative;

''(6) a retail service provider of electricity;

''(7) a private commercial entity;

''(8) a partnership or consortium of 2 or more entities described in subparagraphs (1) through (7); and

''(9) any other entities the Secretary deems appropriate.

''(e) RELEVANT ACTIVITIES.—Grants awarded under subsection (b) shall include funding for research and development activities related to the purpose described in subsection (b), such as—

''(1) development of technologies to use distributed energy resources, such as solar photovoltaics, energy storage systems, electric vehicles, and microgrids, to improve grid and critical end-user resilience;

''(2) analysis of non-technical barriers to greater integration and use of technologies on the distribution grid;

''(3) analysis of past large-area, long-duration electricity interruptions to identify common elements and best practices for electricity restoration, mitigation, and prevention of future disruptions;

''(4) development of advanced monitoring, analytics, operation, and controls of electric grid systems to improve electric grid resilience;

''(5) analysis of technologies, methods, and concepts that can improve community resilience and survivability of frequent or long-duration power outages;

''(6) development of methodologies to maintain cybersecurity during restoration of energy sector infrastructure and operation;

''(7) development of advanced power flow control systems and components to improve electric grid resilience; and

''(8) any other relevant activities determined by the Secretary.

''(f) TECHNICAL ASSISTANCE.—

''(1) IN GENERAL.—The Secretary, in consultation with relevant Federal agencies, shall provide technical assistance to eligible entities for the commercial application of technologies to improve the resilience of the electric grid and commercial application of technologies to help entities develop plans for preventing and recovering from various power outage scenarios at the local, regional, and State level.

''(2) TECHNICAL ASSISTANCE PROGRAM.—The commercial application technical assistance program established in paragraph (1) shall include assistance to eligible entities for—

"(A) the commercial application of technologies developed from the grant program established in subsection (b), including cooperative utilities and utilities owned by a political subdivision of a State, such as municipally-owned electric utilities;

"(B) the development of methods to strengthen or otherwise mitigate adverse impacts on electric grid infrastructure against natural hazards;

"(C) the use of Department data and modeling tools for various purposes;

"(D) a resource assessment and analysis of future demand and distribution requirements, including development of advanced grid architectures and risk analysis;

"(E) the development of tools and technologies to coordinate data across relevant entities to promote resilience and wildfire prevention in the planning, design, construction, operation, and maintenance of transmission infrastructure;

"(F) analysis to predict the likelihood of extreme weather events to inform the planning, design, construction, operation, and mainte-

nance of transmission infrastructure in consultation with the National Oceanic and Atmospheric Administration; and

''(G) the commercial application of relevant technologies, such as distributed energy resources, microgrids, or other energy technologies, to establish backup power for users or facilities affected by emergency power shutoffs.

''(3) ELIGIBLE ENTITIES.—The entities eligible to receive technical assistance for commercial application of technologies under this section include—

''(A) representatives of all sectors of the electric power industry, including electric utilities, trade organizations, and transmission and distribution system organizations, owners, and operators;

''(B) State and local governments and regulatory authorities, including public utility commissions;

''(C) tribal and Alaska Native governmental entities;

''(D) partnerships among entities under subparagraphs (A) through (C);

''(E) regional partnerships; and

''(F) any other entities the Secretary deems appropriate.

''(4) AUTHORITY.—Nothing in this section shall authorize the Secretary to require any entity to adopt any model, tool, technology, plan, analysis, or assessment.

"SEC. 1314. BEST PRACTICES AND GUIDANCE DOCUMENTS FOR ENERGY SECTOR CYBERSECURITY RESEARCH.

''(a) IN GENERAL.—The Secretary, in coordination with appropriate Federal agencies, the Electricity Subsector Coordinating Council, standards development organizations, State, tribal, local, and territorial governments, the private sector, public utility commissions, and other relevant stakeholders, shall coordinate the development of guidance documents for research, development, and demonstration activities to improve the cybersecurity capabilities of the energy sector through participating agencies. As part of these activities, the Secretary, in consultation with relevant Federal agencies, shall—

''(1) facilitate stakeholder involvement to update—

''(A) the Roadmap to Achieve Energy Delivery Systems Cybersecurity;

''(B) the Cybersecurity Procurement Language for Energy Delivery Systems, including developing guidance for—

''(i) contracting with third parties to conduct vulnerability testing for information systems used across the energy production, delivery, storage, and end use systems;

''(ii) contracting with third parties that utilize transient devices to access information systems; and

''(iii) managing supply chain risks; and

''(C) the Electricity Subsector Cybersecurity Capability Maturity Model, including the development of metrics to measure changes in cybersecurity readiness; and

''(2) develop voluntary guidance to improve digital forensic analysis capabilities, including—

''(A) developing standardized terminology and monitoring processes; and

''(B) utilizing human factors research to develop more effective procedures for logging incident events; and

''(3) develop a mechanism to anonymize, aggregate, and share the testing results from cybersecurity test beds to facilitate technology improvements by public and private sector researchers.

''(b) BEST PRACTICES.—The Secretary, in collaboration with the Director of the National Institute of Standards and Technology, the Director of the Cybersecurity and Infrastructure Security Agency, and other appropriate Federal agencies, shall convene relevant stakeholders and facilitate the development of—

''(1) consensus-based best practices to improve cybersecurity for—

''(A) emerging energy technologies;

''(B) distributed generation and storage technologies, and other distributed energy resources;

''(C) electric vehicles and electric vehicle charging stations; and

''(D) other technologies and devices that connect to the electric grid;

''(2) recommended cybersecurity designs and technical requirements that can be used by the private sector to design and build interoperable cybersecurity features into technologies that connect to

the electric grid, including networked devices and components on distribution systems; and

''(3) technical analysis that can be used by the private sector in developing best practices for test beds and test bed methodologies that will enable reproducible testing of cybersecurity protections for information systems, electronic devices, and other relevant components, software, and hardware across test beds.

''(c) REGULATORY AUTHORITY.—None of the activities authorized in this section shall be construed to authorize regulatory actions. Additionally, the voluntary standards developed under this section shall not duplicate or conflict with mandatory reliability standards.

''SEC. 1315. VULNERABILITY TESTING AND TECHNICAL ASSISTANCE TO IMPROVE CYBERSECURITY.

''The Secretary shall—

''(1) coordinate with appropriate Federal agencies and energy sector asset owners and operators, leveraging the research facilities and expertise of the National Laboratories, to assist entities in developing testing capabilities by—

''(A) utilizing a range of methods to identify vulnerabilities in physical and cyber systems;

''(B) developing cybersecurity risk assessment tools and providing analyses and recommendations to participating stakeholders; and

''(C) working with appropriate Federal agencies and stakeholders to develop methods to share anonymized and aggregated test results to assist relevant stakeholders in the energy sector, researchers, and the private sector to advance cybersecurity efforts, technologies, and tools;

''(2) in coordination with appropriate Federal agencies, collaborate with relevant stakeholders, including public utility commissions, to—

''(A) identify information, research, staff training, and analytical tools needed to evaluate cybersecurity issues and challenges in the energy sector; and

''(B) facilitate the sharing of information and the development of tools identified under subparagraph (A);

''(3) coordinate with tribal governments to identify information, research, and analysis tools needed by tribal governments to increase the cybersecurity of energy assets within their jurisdiction.

"SEC. 1316. EDUCATION AND WORKFORCE TRAINING RESEARCH AND STANDARDS.

''(a) IN GENERAL.—The Secretary shall support the development of an energy sector cybersecurity workforce through a program that—

''(1) facilitates collaboration between undergraduate and graduate students, researchers at the National Laboratories, and the civilian energy sector;

''(2) prioritizes science and technology in areas relevant to the mission of the Department of Energy through the design and application of cybersecurity technologies for the energy sector;

''(3) develops, or facilitates private sector development of, voluntary cybersecurity training and retraining standards, lessons, and recommendations for the energy sector that minimize duplication of cybersecurity compliance training programs; and

''(4) maintains a public database of energy sector cybersecurity education, training, and certification programs.

''(b) GRID RESILIENCE TECHNOLOGY TRAINING.—The Secretary shall support the development of the grid workforce through a training program that prioritizes activities that enhance the resilience of the electric grid and energy sector infrastructure, including training on the use

of tools, technologies, and methods developed under the grant program established in section 1313(b).

''(c) COLLABORATION.—In carrying out the program authorized in subsection (a) and (b), the Secretary shall coordinate with appropriate Federal agencies and leverage programs and activities carried out across the Department of Energy, other relevant Federal agencies, institutions of higher education, and other appropriate entities best suited to provide national leadership on cybersecurity and grid resilience-related issues.

''SEC. 1317. INTERAGENCY COORDINATION AND STRATEGIC PLAN FOR ENERGY SECTOR CYBERSECURITY RESEARCH.

''(a) DUTIES.—The Secretary, in coordination with appropriate Federal agencies and the Energy Sector Government Coordinating Council, shall—

''(1) review the most recent versions of the Roadmap to Achieve Energy Delivery Systems Cybersecurity and the Multi-Year Program Plan for Energy Sector Cybersecurity to identify crosscutting energy sector cybersecurity research needs and opportunities for collaboration among Federal agencies and other relevant stakeholders;

''(2) identify interdisciplinary research, technology, and tools that can be applied to cybersecurity challenges in the energy sector;

''(3) identify technology transfer opportunities to accelerate the development and commercial application of novel cybersecurity technologies, systems, and processes in the energy sector; and

''(4) develop a coordinated Interagency Strategic Plan for research to advance cybersecurity capabilities used in the energy sector that builds on the Roadmap to Achieve Energy Delivery Systems in Cybersecurity and the Multi-Year Program Plan for Energy Sector Cybersecurity.

''(b) INTERAGENCY STRATEGIC PLAN.—

''(1) SUBMITTAL.—The Interagency Strategic Plan developed under subsection (a)(4) shall be submitted to Congress and made public within 12 months after the date of enactment of this section.

''(2) CONTENTS.—The Interagency Strategic Plan shall include—

''(A) an analysis of how existing cybersecurity research efforts across the Federal Government are advancing the goals of the Roadmap to Achieve Energy Delivery Systems Cybersecu-

rity and the Multi-Year Program Plan for Energy Sector Cybersecurity;

"(B) recommendations for research areas that may advance the cybersecurity of the energy sector;

"(C) an overview of existing and proposed public and private sector research efforts that address the topics outlined in paragraph (3); and

"(D) an overview of needed support for workforce training in cybersecurity for the energy sector.

"(3) CONSIDERATIONS.—In developing the Interagency Strategic Plan, the Secretary, in coordination with appropriate Federal agencies and the Energy Sector Government Coordinating Council, shall consider—

"(A) opportunities for human factors research to improve the design and effectiveness of cybersecurity devices, technologies, tools, processes, and training programs;

"(B) contributions of other disciplines to the development of innovative cybersecurity procedures, devices, components, technologies, and tools;

''(C) opportunities for technology transfer programs to facilitate private sector development of cybersecurity procedures, devices, components, technologies, and tools for the energy sector; and

''(D) broader applications of the work done by relevant Federal agencies to advance the cybersecurity of information systems and data analytics systems for the energy sector.

''(c) PARTICIPATION.—For the purposes of carrying out this section, the Energy Sector Government Coordinating Council shall include representatives from Federal agencies with expertise in the energy sector, information systems, data analytics, cyber and physical systems, engineering, human factors research, human-machine interfaces, high performance computing, big data and data analytics, or other disciplines considered appropriate by the Council Chair.

''SEC. 1318. REPORT TO CONGRESS.

''(a) STUDY.—The Secretary, in collaboration with appropriate Federal agencies and energy sector stakeholders, in order to provide recommendations for additional research, development, demonstration, and commercial application activities, shall—

''(1) analyze physical and cyber attacks on infrastructure related to energy functions in the energy sector and identify cost-effective opportunities to improve physical and cyber security for such infrastructure; and

''(2) examine the risks associated with increasing penetration of digital technologies in grid networks, particularly on the distribution grid.

''(b) CONTENT.—The study shall—

''(1) analyze processes, operational procedures, and other factors common among cyber attacks;

''(2) identify areas where human behavior plays a critical role in maintaining or compromising the security of a system;

''(3) recommend—

''(A) changes to the design of devices, human-machine interfaces, technologies, tools, processes, or procedures to optimize security that do not require a change in human behavior; and

''(B) training techniques to increase the capacity of employees to actively identify, prevent, or neutralize the impact of cyber attacks;

''(4) evaluate existing engineering and technical design criteria and guidelines that incorporate

human factors research findings, and recommend criteria and guidelines for cybersecurity tools that can be used to develop display systems for cybersecurity monitoring, such as alarms, user-friendly displays, and layouts;

''(5) evaluate the cybersecurity risks and benefits of various design and architecture options for energy sector systems, networked grid systems and components, and automation systems, including consideration of—

''(A) designs that include both digital and analog control devices and technologies;

''(B) different communication technologies used to transfer information and data between control system devices, technologies, and system operators;

''(C) automated and human-in-the-loop devices and technologies;

''(D) programmable versus nonprogrammable devices and technologies;

''(E) increased redundancy using dissimilar cybersecurity technologies; and

''(F) grid architectures that use autonomous functions to limit control vulnerabilities; and

''(6) recommend methods or metrics to document changes in risks associated with system designs and architectures.

''(c) CONSULTATION.—In conducting the study, the Secretary shall consult with energy sector stakeholders, academic researchers, the private sector, and other relevant stakeholders.

''(d) REPORT.—Not later than 24 months after the date of enactment of this section, the Secretary shall submit the study to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

''SEC. 1319. DEFINITIONS.

''For purposes of sections 1312 through 1318:

''(1) BIG DATA.—The term 'big data' means datasets that require advanced analytical methods for their transformation into useful information.

''(2) HISTORICALLY BLACK COLLEGE OR UNIVERSITY.—The term 'historically Black college or university' has the meaning given the term 'part B institution' in section 322(2) of the HIgher Education Act of 1965 (29 U.S.C. 106(2)).

''(3) HUMAN FACTORS RESEARCH.—The term 'human factors research' means research on human performance in social and physical environments,

and on the integration and interaction of humans with physical systems and computer hardware and software.

''(4) HUMAN-MACHINE INTERFACES.—The term 'human-machine interfaces' means technologies that present information to an operator or user about the state of a process or system, or accept human instructions to implement an action, including visualization displays such as a graphical user interface.

''(5) MINORITY-SERVING INSTITUTION.—The term 'minority-serving institution' means an eligible institution under section 371(a) of the Higher Education Act of 1965 (20 U.S.C. 1067q(a)).

''(6) 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).

''(7) SECURITY VULNERABILITY.—The term 'security vulnerability' has the meaning given the term in section 102 of the Cybersecurity Information Sharing Act of 2015 (6 U.S.C. 1501).

''(8) TRANSIENT DEVICES.—The term 'transient devices' means removable media, including floppy disks, compact disks, USB flash drives, exter-

nal hard drives, mobile devices, and other devices that utilize wireless connections.''.

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out the amendments made by subsection (a)—

(1) $150,000,000 for fiscal year 2021;

(2) $157,500,000 for fiscal year 2022;

(3) $165,375,000 for fiscal year 2023;

(4) $173,645,000 for fiscal year 2024; and

(5) $182,325,000 for fiscal year 2025.

SEC. 5342. CRITICAL INFRASTRUCTURE RESEARCH AND CONSTRUCTION.

(a) IN GENERAL.—The Secretary of Energy shall carry out a program of research, development, and demonstration of technologies and tools to help ensure the resilience and security of critical infrastructure.

(b) COORDINATION.—In carrying out the program under subsection (a), the Secretary shall leverage expertise and resources of and coordinate with—

(1) relevant programs and activities across the Department of Energy; and

(2) other relevant Federal agencies.

(c) ENERGY SECTOR CRITICAL INFRASTRUCTURE TEST FACILITY.—In carrying out the program under subsection (a), the Secretary, in consultation with other ap-

propriate Federal agencies, shall establish and operate an Energy Sector Critical Infrastructure Test Facility (referred to in this section as the ''Test Facility'') that allows for scalable physical and cyber performance testing to be conducted on industry-scale energy sector critical infrastructure systems. This facility shall include a focus on—

(1) cybersecurity test beds; and

(2) electric grid test beds.

(d) SELECTION.—The Secretary shall select the Test Facility under this section on a competitive, merit-reviewed basis. The Secretary shall consider applications from National Laboratories, institutions of higher education, multi-institutional collaborations, and other appropriate entities.

(e) DURATION.—The Test Facility established under this section shall receive support for a period of not more than 5 years, subject to the availability of appropriations.

(f) RENEWAL.—Upon the expiration of any period of support of the Test Facility, the Secretary may renew support for the Test Facility, on a merit-reviewed basis, for a period of not more than 5 years.

(g) TERMINATION.—Consistent with the existing authorities of the Department, the Secretary may terminate the Test Facility for cause during the performance period.

(h) CRITICAL INFRASTRUCTURE DEFINED.—The term ''critical infrastructure'' means infrastructure that the Secretary determines to be vital to socioeconomic activities such that, if destroyed or damaged, such destruction or damage could cause substantial disruption to such socioeconomic activities.

(i) CRITICAL INFRASTRUCTURE AND MICROGRID RESEARCH PROGRAM.—The Secretary shall establish a research, development, and demonstration program to improve the energy resilience of critical infrastructure, including through the use of microgrids, during extreme weather events including extreme heat and wildfires. This program shall focus on developing technologies that—

(1) improve the energy resilience and meet the power needs of critical infrastructure, including through the use of microgrids, renewable energy, energy efficiency, and on-site storage;

(2) improve the energy efficiency of critical infrastructure;

(3) decrease the size and cost of on-site backup generators for critical infrastructure;

(4) provide on-site back-up power with renewable and low-carbon liquid fuels; and

(5) ensure the safe power up and power down of critical infrastructure when necessary, as well as

the transfer to backup sources of power for uninterrupted electricity supply, including the use of microgrids.

SEC. 5343. CONFORMING AMENDMENT.

Section 1(b) of the Energy Independence and Security Act of 2007 is amended in the table of contents by adding after the matter relating to section 1311 (as added by this Act) the following:

Subtitle D—Tribal Energy

SEC. 5401. INDIAN ENERGY.

(a) DEFINITION OF INDIAN LAND.—Section 2601(2) of the Energy Policy Act of 1992 (25 U.S.C. 3501(2)) is amended—

(1) in subparagraph (B)(iii), by striking ''and'';

(2) in subparagraph (C), by striking ''land.'' and inserting ''land;''; and

(3) by adding at the end the following subparagraphs:

''(D) any land located in a census tract in which the majority of residents are Natives (as

defined in section 3(b) of the Alaska Native Claims Settlement Act (43 U.S.C. 1602(b))); and

''(E) any land located in a census tract in which the majority of residents are persons who are enrolled members of a federally recognized Tribe or village.''.

(b) REDUCTION OF COST SHARE.—Section 2602(b)(5) of the Energy Policy Act of 1992 (25 U.S.C. 3502(b)(5)) is amended by adding at the end the following subparagraphs:

''(D) The Secretary of Energy may reduce any applicable cost share required of an Indian tribe, intertribal organization, or tribal energy development organization in order to receive a grant under this subsection to not less than 10 percent if the Indian tribe, intertribal organization, or tribal energy development organization meets criteria developed by the Secretary of Energy, including financial need.

''(E) Section 988 of the Energy Policy Act of 2005 (42 U.S.C. 16352) shall not apply to assistance provided under this subsection.''.

(c) AUTHORIZATION.—Section 2602(b)(7) of the Energy Policy Act of 1992 (25 U.S.C. 3502(b)(7)) is amended by striking ''$20,000,000 for each of fiscal years 2006

through 2016'' and inserting ''$30,000,000 for each of fiscal years 2021 through 2025''.

SEC. 5402. REPORT ON ELECTRICITY ACCESS AND RELIABILITY.

(a) ASSESSMENT.—The Secretary of Energy shall conduct an assessment of the status of access to electricity by households residing in Tribal communities or on Indian land, and the reliability of electric service available to households residing in Tribal communities or on Indian land, as compared to the status of access to and reliability of electricity within neighboring States or within the State in which Indian land is located.

(b) CONSULTATION.—The Secretary of Energy shall consult with Indian Tribes, Tribal organizations, the North American Electricity Reliability Corporation, and the Federal Energy Regulatory Commission in the development and conduct of the assessment under subsection (a). Indian Tribes and Tribal organizations shall have the opportunity to review and make recommendations regarding the development of the assessment and the findings of the assessment, prior to the submission of the report under subsection (c).

(c) REPORT.—Not later than 18 months after the date of enactment of this Act, the Secretary of Energy shall submit to the Committee on Energy and Commerce

of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report on the results of the assessment conducted under subsection (a), which shall include—

(1) a description of generation, transmission, and distribution assets available to provide electricity to households residing in Tribal communities or on Indian land;

(2) a survey of the retail and wholesale prices of electricity available to households residing in Tribal communities or on Indian land;

(3) a description of participation of Tribal members in the electric utility workforce, including the workforce for construction and maintenance of renewable energy resources and distributed energy resources;

(4) the percentage of households residing in Tribal communities or on Indian land that do not have access to electricity;

(5) the potential of distributed energy resources to provide electricity to households residing in Tribal communities or on Indian land;

(6) the potential for tribally-owned electric utilities or electric utility assets to participate in or benefit from regional electricity markets;

(7) a description of the barriers to providing access to electric service to households residing in Tribal communities or on Indian land; and

(8) recommendations to improve access to and reliability of electric service for households residing in Tribal communities or on Indian land.

(d) DEFINITIONS.—In this section:

(1) TRIBAL MEMBER.—The term ''Tribal member'' means a person who is an enrolled member of a federally recognized Tribe or village.

(2) TRIBAL COMMUNITY.—The term ''Tribal community'' means a community in a United States census tract in which the majority of residents are persons who are enrolled members of a federally recognized Tribe or village.

Subtitle E—Utility Resilience and Reliability

SEC. 5501. RELIABILITY OF BULK-POWER SYSTEM IN CHANGING CONDITIONS.

(a) IN GENERAL.—Not later than 1 year after the date of enactment of this paragraph, the Electric Reliability Organization shall file with the Federal Energy Regulatory Commission a proposed reliability standard, under section 215(d) of the Federal Power Act (16 U.S.C.

824o(d)), that addresses the reliability of the bulk-power system and suggestions for how to—

(1) prepare for and adapt to changing conditions; and

(2) withstand and rapidly recover from disruptions, including disruptions caused by extreme weather conditions.

(b) REGIONAL DIFFERENCES.—The proposed reliability standard filed under subsection (a) shall take into account regional differences.

(c) DEFINITIONS.—In this section, the terms ''bulk-power system'', ''Electric Reliability Organization'', and ''reliability standard'' have the meanings given those terms in section 215 of the Federal Power Act (16 U.S.C. 824o).

SEC. 5502. ELECTRIC GRID RESILIENCE EDUCATION PROGRAM.

(a) IN GENERAL.—Not later than 1 year after the date of enactment of this section, the Secretary of Energy shall establish a program to provide information and recommendations to States and electric utilities on how to improve the resilience of electric grids in regards to climate change and extreme weather events.

(b) ELECTRIC UTILITY DEFINED.—In this section, the term ''electric utility'' has the meaning given such

term in section 3 of the Federal Power Act (16 U.S.C. 796).

SEC. 5503. REPORT ON PLANNED ELECTRIC POWER OUTAGES DUE TO EXTREME WEATHER CONDITIONS.

Not later than 1 year after the date of enactment of this section, the Secretary of Energy shall submit to Congress a report, and publish such report on the website of the Department of Energy, that provides recommendations on how to minimize the need for, effects of, and duration of, planned electric power outages that are due to extreme weather conditions, including such conditions under which the National Weather Service issues a red flag warning.

TITLE VI—TRANSPORTATION

Subtitle A—Diesel Emissions Reduction

SEC. 6101. REAUTHORIZATION OF DIESEL EMISSIONS REDUCTION PROGRAM.

Section 797(a) of the Energy Policy Act of 2005 (42 U.S.C. 16137(a)) is amended by striking ''$100,000,000 for each of fiscal years 2012 through 2016'' and inserting ''$500,000,000 for each of fiscal years 2021 through 2025''.

Subtitle B—Clean School Bus Program

SEC. 6201. REAUTHORIZATION OF CLEAN SCHOOL BUS PROGRAM.

(a) DEFINITIONS.—

(1) ALTERNATIVE FUEL.—Section 741(a)(2) of the Energy Policy Act of 2005 (42 U.S.C. 16091(a)) is amended—

(A) in subparagraph (B), by striking ''or'' after the semicolon;

(B) in subparagraph (C), by striking the period at the end and inserting ''; or''; and

(C) by adding at the end the following new subparagraph:

''(D) electricity.''.

(2) CLEAN SCHOOL BUS.—Paragraph (3) of section 741(a) of the Energy Policy Act of 2005 (42 U.S.C. 16091(a)) is amended to read as follows:

''(3) CLEAN SCHOOL BUS.—The term 'clean school bus' means—

''(A) a school bus (as the term 'schoolbus' is defined in section 30125(a) of title 49, United States Code) that—

''(i) is operated solely on an alternative fuel; and

''(ii) meets or exceeds Federal vehicle emission standards for medium-duty passenger vehicles applicable to the model year in which the school bus is manufactured; or

''(B) a zero-emission school bus.''.

(3) OTHER DEFINITIONS.—Section 741(a) of the Energy Policy Act of 2005 (42 U.S.C. 16091(a)), as amended, is further amended—

(A) by redesignating paragraphs (4), (5), and (6) as paragraphs (5), (9), and (10), respectively;

(B) by inserting after paragraph (3) the following:

''(4) COMMUNITY OF COLOR.—The term 'community of color' means any geographically distinct area the population of color of which is higher than the average population of color of the State in which the community is located.'';

(C) by inserting after paragraph (5), as redesignated, the following:

''(6) INDIGENOUS COMMUNITY.—The term 'indigenous community' means—

''(A) a federally recognized Indian Tribe;

''(B) a State-recognized Indian Tribe;

"(C) an Alaska Native or Native Hawaiian community or organization; and

"(D) any other community of indigenous people, including communities in other countries.

"(7) LOW INCOME.—The term 'low income' means an annual household income equal to, or less than, the greater of—

"(A) an amount equal to 80 percent of the median income of the area in which the household is located, as reported by the Department of Housing and Urban Development; and

"(B) 200 percent of the Federal poverty line.

"(8) LOW-INCOME COMMUNITY.—The term 'low-income community' means any census block group in which 30 percent or more of the population are individuals with low income."; and

(D) by adding at the end the following:

"(11) ZERO-EMISSION SCHOOL BUS.—The term 'zero-emission school bus' means a school bus (as the term 'schoolbus' is defined in section 30125(a) of title 49, United States Code) with a drivetrain that produces, under any possible operational mode or condition, zero exhaust emission of—

''(A) any air pollutant that is listed pursuant to section 108(a) of the Clean Air Act (42 U.S.C. 7407(a)) (or any precursor to such an air pollutant); or

''(B) any greenhouse gas.''.

(b) PROGRAM FOR RETROFIT OR REPLACEMENT OF CERTAIN EXISTING SCHOOL BUSES WITH CLEAN SCHOOL BUSES.—

(1) NATIONAL GRANT, REBATE, AND LOAN PROGRAMS.—

(A) IN GENERAL.—Section 741(b)(1)(A) of the Energy Policy Act of 2005 (42 U.S.C. 16091(b)(1)(A)) is amended by inserting after ''awarding grants'' the following: '', rebates, and low-cost revolving loans, as determined by the Administrator, including through contracts pursuant to subsection (d),''.

(B) CONFORMING CHANGES.—Section 741 of the Energy Policy Act of 2005 (42 U.S.C. 16091) is amended—

(i) in subsection (a)(4)(B), by striking ''grant funds'' and inserting ''award funds'';

(ii) in subsection (b)(1)(B), by striking ''awarding grants'' each place it appears and inserting ''making awards'';

(iii) in the heading of subsection (b)(2), by striking ''GRANT APPLICATIONS'' and inserting ''AWARD APPLICATIONS'';

(iv) in subsection (b)(2)(A), by striking ''grant applications'' and inserting ''award applications'';

(v) in subsection (b)(3)(A), by striking ''grant'' and insert ''award'';

(vi) and (b)(4)—

(I) in the paragraph heading, by striking ''GRANTS'' and inserting ''AWARDS''; and

(II) by striking ''award grants'' and inserting ''make awards'';

(vii) in subsection (b)(7)—

(I) by striking ''grant awards'' and inserting ''awards''; and

(II) by striking ''grant funding'' and inserting ''funding'';

(viii) in subsection (b)(8)(A)(ii)—

(I) in subclauses (I) and (II), by striking ''grant applications'' each

place it appears and inserting ''award applications''; and

(II) in subclause (III)—

(aa) by striking ''grants awarded'' and inserting ''awards made''; and

(bb) by striking ''grant recipients'' and inserting ''award recipients''; and

(ix) in subsection (c)(3)—

(I) in subparagraph (A)—

(aa) by striking ''grant recipients'' and inserting ''award recipients''; and

(bb) by striking ''grants'' and inserting ''awards''; and

(II) in subparagraph (C), by striking ''grant program'' and inserting ''award program''.

(2) PRIORITY OF AWARD APPLICATIONS.—Section 741(b)(2) of the Energy Policy Act of 2005 (42 U.S.C. 16091(b)(2)) is amended—

(A) in subparagraph (A)—

(i) by striking ''1977'' and inserting ''2007''; and

(ii) by inserting before the period at the end ''with clean school buses''; and

(B) by amending subparagraph (B) to read as follows:

''(B) RETROFITTING.—In the case of award applications to retrofit school buses, the Administrator shall give highest priority to applicants that propose to retrofit school buses manufactured before model year 2010 to become clean school buses.''.

(3) USE OF SCHOOL BUS FLEET.—Section 741(b)(3)(B) of the Energy Policy Act of 2005 (42 U.S.C. 16091(b)(3)(B)) is amended by inserting ''charged,'' after ''operated,''.

(4) REPLACEMENT AWARDS.—Paragraph (5) of section 741(b) of the Energy Policy Act of 2005 (42 U.S.C. 16091(b)) is amended to read as follows:

''(5) REPLACEMENT AWARDS.—In the case of awards to replace school buses—

''(A) the Administrator may make awards for up to—

''(i) 100 percent of the replacement costs for clean school buses that are zero-emission school buses; and

''(ii) 60 percent of the replacement costs for other eligible clean school buses; and

''(B) such replacement costs may include the costs of acquiring the clean school buses and charging and fueling infrastructure.''.

(5) ULTRA LOW-SULFUR DIESEL FUEL.—Section 741(b) of the Energy Policy Act of 2005 (42 U.S.C. 16091(b)) is amended—

(A) by striking paragraph (6); and

(B) by redesignating paragraph (7) as paragraph (6).

(6) SCRAPPAGE.—Section 741(b) of the Energy Policy Act of 2005 (42 U.S.C. 16091(b)) is further amended by inserting after paragraph (6), as redesignated, the following new paragraph:

''(7) SCRAPPAGE.—In the case of an award under this section for the replacement of a school bus or a retrofit including installation of a new engine, the Administrator shall require the recipient of the award to verify that the replaced bus, or the engine of a retrofitted bus that was removed, was returned to the supplier for remanufacturing to a more stringent set of engine emissions standards or for scrappage.''.

(c) EDUCATION.—Paragraph (1) of section 741(c) of the Energy Policy Act of 2005 (42 U.S.C. 16091(c)) is amended to read as follows:

''(1) IN GENERAL.—Not later than 90 days after the date of enactment of the Clean Economy Jobs and Innovation Act, the Administrator shall develop an education outreach program to promote and explain the award program under subsection (b).''.

(d) CONTRACT PROGRAMS; ADMINISTRATIVE COSTS.—Section 741 of the Energy Policy Act of 2005 (42 U.S.C. 16091) is amended—

(1) by redesignating subsection (d) as subsection (f); and

(2) by inserting after subsection (c) the following new subsections:

''(d) CONTRACT PROGRAMS.—

''(1) AUTHORITY.—In addition to the use of contracting authority otherwise available to the Administrator, the Administrator may enter into contracts with eligible contractors described in paragraph (2) for awarding rebates and low-cost revolving loans pursuant to subsection (b)(1).

''(2) ELIGIBLE CONTRACTORS.—A contractor is an eligible contractor described in this paragraph if

the contractor is a for-profit, not-for-profit, or non-profit entity that has the capacity—

''(A) to sell clean school buses or equipment to, or to arrange financing for, individuals or entities that own a school bus or fleet of school buses; or

''(B) to upgrade school buses or their equipment with verified or Environmental Protection Agency-certified engines or technologies, or to arrange financing for such upgrades.

''(e) ADMINISTRATIVE COSTS.—The Administrator may not use, for the administrative costs of carrying out this section, more than one percent of the amounts made available to carry out this section for any fiscal year.''.

(e) AUTHORIZATION OF APPROPRIATIONS.—Subsection (f), as redesignated, of section 741 of the Energy Policy Act of 2005 (42 U.S.C. 16091) is amended to read as follows:

''(f) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Administrator to carry out this section, to remain available until expended, $130,000,000 for each of fiscal years 2021 through 2025, of which—

''(1) not less than $100,000,000 for each such fiscal year shall be used for awards under this sec-

tion to eligible recipients proposing to replace school buses with zero-emission school buses; and

''(2) not less than $52,000,000 for each such fiscal year shall be used for awards under this section to eligible recipients proposing to replace or retrofit school buses to serve a community of color, indigenous community, low-income community, or any community located in an air quality area designated pursuant to section 107 of the Clean Air Act (42 U.S.C. 7407) as nonattainment.''.

(f) TECHNICAL AMENDMENT TO STRIKE REDUNDANT AUTHORIZATION.—The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (commonly referred to as ''SAFETEA–LU'') is amended by striking section 6015 (42 U.S.C. 16091a).

Subtitle C—Clean Cities Coalition Program

SEC. 6301. CLEAN CITIES COALITION PROGRAM.

(a) IN GENERAL.—The Secretary shall carry out a program to be known as the Clean Cities Coalition Program.

(b) PROGRAM ELEMENTS.—In carrying out the program under subsection (a), the Secretary shall—

(1) establish criteria for designating local and regional Clean Cities Coalitions;

(2) designate local and regional Clean Cities Coalitions that the Secretary determines meet the criteria established under paragraph (1);

(3) make awards to each designated Clean Cities Coalition for administrative and program expenses of the coalition;

(4) make competitive awards to designated Clean Cities Coalitions for projects and activities described in subsection (c);

(5) provide technical assistance and training to designated Clean Cities Coalitions;

(6) provide opportunities for communication and sharing of best practices among designated Clean Cities Coalitions; and

(7) maintain, and make available to the public, a centralized database of information included in the reports submitted under subsection (d).

(c) PROJECTS AND ACTIVITIES.—Projects and activities eligible for awards under subsection (b)(4) are projects and activities that reduce petroleum consumption, improve air quality, promote energy and economic security, and encourage deployment of a diverse, domestic supply of alternative fuels in the transportation sector by—

(1) encouraging the purchase and use of alternative fuel vehicles and alternative fuels, including by fleet managers;

(2) expediting the establishment of local, regional, and national infrastructure to fuel alternative fuel vehicles;

(3) advancing the use of other petroleum fuel reduction technologies and strategies;

(4) conducting outreach and education activities to advance the use of alternative fuels and alternative fuel vehicles;

(5) providing training and technical assistance and tools to users that adopt petroleum fuel reduction technologies; or

(6) collaborating with and training officials and first responders with responsibility for permitting and enforcing fire, building, and other safety codes related to the deployment and use of alternative fuels or alternative fuel vehicles.

(d) ANNUAL REPORT.—Each designated Clean Cities Coalition shall submit an annual report to the Secretary on the activities and accomplishments of the coalition.

(e) DEFINITIONS.—In this section:

(1) ALTERNATIVE FUEL.—The term ''alternative fuel'' has the meaning given such term in section 32901 of title 49, United States Code.

(2) ALTERNATIVE FUEL VEHICLE.—The term ''alternative fuel vehicle'' means any vehicle that is capable of operating, partially or exclusively, on an alternative fuel.

(3) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(f) FUNDING.—

(1) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section—

(A) $50,000,000 for fiscal year 2021;

(B) $60,000,000 for fiscal year 2022;

(C) $75,000,000 for fiscal year 2023;

(D) $90,000,000 for fiscal year 2024; and

(E) $100,000,000 for fiscal year 2025.

(2) ALLOCATIONS.—The Secretary shall allocate funds made available to carry out this section in each fiscal year as follows:

(A) Thirty percent of such funds shall be distributed as awards under subsection (b)(3).

(B) Fifty percent of such funds shall be distributed as competitive awards under subsection (b)(4).

(C) Twenty percent of such funds shall be used to carry out the duties of the Secretary under this section.

Subtitle D—Renewable Fuel Standard Integrity

SEC. 6401. ANNUAL DEADLINE FOR PETITIONS BY SMALL REFINERIES FOR EXEMPTIONS FROM RENEWABLE FUEL REQUIREMENTS.

(a) DEADLINE.—Notwithstanding any other provision of law, petitions under section 211(o)(9) of the Clean Air Act (42 U.S.C. 7545(o)(9)) for an exemption from the requirements of section 211(o)(2) of such Act (42 U.S.C. 7545(o)(2)) shall be submitted to the Administrator of the Environmental Protection Agency by June 1 of the year preceding the year when such requirements would otherwise be in effect.

(b) EFFECT OF FAILURE TO MEET DEADLINE.—If a petition described in subsection (a) is not submitted by the deadline specified in such subsection, the petition shall be ineligible for consideration or approval.

SEC. 6402. INFORMATION IN PETITION SUBJECT TO PUBLIC DISCLOSURE.

(a) IN GENERAL.—The information described in subsection (b) in any submission to the Environmental Protection Agency by any person, including a small refinery, with respect to a petition under section 211(o)(9)(B) of the Clean Air Act (42 U.S.C. 7545(o)(9)(B))—

(1) shall not be deemed to be a trade secret or confidential information; and

(2) shall be subject to public disclosure under section 552 of title 5, United States Code.

(b) DESCRIBED INFORMATION.—The information described in this subsection is—

(1) the name of the small refinery requesting an extension of an exemption;

(2) the number of gallons of renewable fuel that will not be contained in fuel pursuant to section 211(o)(2) of the Clean Air Act (42 U.S.C. 7545(o)(2)) as a result of the extension if the extension is granted; and

(3) the compliance year for which the extension is requested.

(c) APPLICABILITY.—Subsection (a) applies only with respect to information submitted with respect to a petition under section 211(o)(9)(B) of the Clean Air Act (42

U.S.C. 7545(o)(9)(B)) for calendar year 2021 or a subsequent calendar year.

Subtitle E—EV Infrastructure

SEC. 6501. DEFINITIONS.

In this subtitle:

(1) ELECTRIC VEHICLE SUPPLY EQUIPMENT.—The term ''electric vehicle supply equipment'' means any conductors, including ungrounded, grounded, and equipment grounding conductors, electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatuses installed specifically for the purpose of delivering energy to an electric vehicle.

(2) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(3) UNDERSERVED OR DISADVANTAGED COMMUNITY.—The term ''underserved or disadvantaged community'' means—

(A) a community located in a ZIP code that includes a census tract that is identified as—

(i) a low-income community; or

(ii) a community of color;

(B) a community in which climate change, pollution, or environmental destruction have ex-

acerbated systemic racial, regional, social, environmental, and economic injustices by disproportionately affecting indigenous peoples, communities of color, migrant communities, deindustrialized communities, depopulated rural communities, the poor, low-income workers, women, the elderly, the unhoused, people with disabilities, or youth; or

(C) any other community that the Secretary determines is disproportionately vulnerable to, or bears a disproportionate burden of, any combination of economic, social, and environmental stressors.

SEC. 6502. ELECTRIC VEHICLE SUPPLY EQUIPMENT REBATE PROGRAM.

(a) REBATE PROGRAM.—Not later than January 1, 2022, the Secretary shall establish a rebate program to provide rebates for covered expenses associated with publicly accessible electric vehicle supply equipment (in this section referred to as the ''rebate program'').

(b) REBATE PROGRAM REQUIREMENTS.—

(1) ELIGIBLE ENTITIES.—A rebate under the rebate program may be made to an individual, a State, local, Tribal, or Territorial government, a pri-

vate entity, a not-for-profit entity, a nonprofit entity, or a metropolitan planning organization.

(2) ELIGIBLE EQUIPMENT.—

(A) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the Secretary shall publish and maintain on the Department of Energy internet website a list of electric vehicle supply equipment that is eligible for the rebate program.

(B) UPDATES.—The Secretary may, by regulation, add to, or otherwise revise, the list of electric vehicle supply equipment under subparagraph (A) if the Secretary determines that such addition or revision will likely lead to—

(i) greater usage of electric vehicle supply equipment;

(ii) greater access to electric vehicle supply equipment by users; or

(iii) an improved experience for users of electric vehicle supply equipment, including accessibility in compliance with the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.).

(C) LOCATION REQUIREMENT.—To be eligible for the rebate program, the electric vehicle

supply equipment described in subparagraph (A) shall be installed—

(i) in the United States;

(ii) on property—

(I) owned by the eligible entity under paragraph (1); or

(II) on which the eligible entity under paragraph (1) has authority to install electric vehicle supply equipment; and

(iii) at a location that is—

(I) a multi-unit housing structure;

(II) a workplace;

(III) a commercial location; or

(IV) open to the public for a minimum of 12 hours per day;

(3) APPLICATION.—

(A) IN GENERAL.—An eligible entity under paragraph (1) may submit to the Secretary an application for a rebate under the rebate program. Such application shall include—

(i) the estimated cost of covered expenses to be expended on the electric vehi-

cle supply equipment that is eligible under paragraph (2);

(ii) the estimated installation cost of the electric vehicle supply equipment that is eligible under paragraph (2);

(iii) the global positioning system location, including the integer number of degrees, minutes, and seconds, where such electric vehicle supply equipment is to be installed, and identification of whether such location is—

(I) a multi-unit housing structure;

(II) a workplace;

(III) a commercial location; or

(IV) open to the public for a minimum of 12 hours per day;

(iv) the technical specifications of such electric vehicle supply equipment, including the maximum power voltage and amperage of such equipment;

(v) an identification of any existing electric vehicle supply equipment that—

(I) is available to the public for a minimum of 12 hours per day; and

(II) is not further than 50 miles from the global positioning system location identified under clause (iii); and

(vi) any other information determined by the Secretary to be necessary for a complete application.

(B) REVIEW PROCESS.—The Secretary shall review an application for a rebate under the rebate program and approve an eligible entity under paragraph (1) to receive such rebate if the application meets the requirements of the rebate program under this subsection.

(C) NOTIFICATION TO ELIGIBLE ENTITY.—Not later than 1 year after the date on which the eligible entity under paragraph (1) applies for a rebate under the rebate program, the Secretary shall notify the eligible entity whether the eligible entity will be awarded a rebate under the rebate program following the submission of additional materials required under paragraph (5).

(4) REBATE AMOUNT.—

(A) IN GENERAL.—Except as provided in subparagraph (B), the amount of a rebate made

under the rebate program for each charging unit shall be the lesser of—

(i) 75 percent of the applicable covered expenses;

(ii) $2,000 for covered expenses associated with the purchase and installation of non-networked level 2 charging equipment;

(iii) $4,000 for covered expenses associated with the purchase and installation of networked level 2 charging equipment; or

(iv) $100,000 for covered expenses associated with the purchase and installation of networked direct current fast charging equipment.

(B) REBATE AMOUNT FOR REPLACEMENT EQUIPMENT.—A rebate made under the rebate program for replacement of pre-existing electric vehicle supply equipment at a single location shall be the lesser of—

(i) 75 percent of the applicable covered expenses;

(ii) $1,000 for covered expenses associated with the purchase and installation of non-networked level 2 charging equipment;

(iii) $2,000 for covered expenses associated with the purchase and installation of networked level 2 charging equipment; or

(iv) $25,000 for covered expenses associated with the purchase and installation of networked direct current fast charging equipment.

(5) DISBURSEMENT OF REBATE.—

(A) IN GENERAL.—The Secretary shall disburse a rebate under the rebate program to an eligible entity under paragraph (1), following approval of an application under paragraph (3), if such entity submits the materials required under subparagraph (B).

(B) MATERIALS REQUIRED FOR DISBURSEMENT OF REBATE.—Not later than one year after the date on which the eligible entity under paragraph (1) receives notice under paragraph (3)(C) that the eligible entity has been approved for a rebate, such eligible entity shall submit to the Secretary the following—

(i) a record of payment for covered expenses expended on the installation of the electric vehicle supply equipment that is eligible under paragraph (2);

(ii) a record of payment for the electric vehicle supply equipment that is eligible under paragraph (2);

(iii) the global positioning system location of where such electric vehicle supply equipment was installed and identification of whether such location is—

(I) a multi-unit housing structure;

(II) a workplace;

(III) a commercial location; or

(IV) open to the public for a minimum of 12 hours per day;

(iv) the technical specifications of the electric vehicle supply equipment that is eligible under paragraph (2), including the maximum power voltage and amperage of such equipment; and

(v) any other information determined by the Secretary to be necessary.

(C) AGREEMENT TO MAINTAIN.—To be eligible for a rebate under the rebate program, an eligible entity under paragraph (1) shall enter into an agreement with the Secretary to maintain the electric vehicle supply equipment that

is eligible under paragraph (2) in a satisfactory manner for not less than 5 years after the date on which the eligible entity under paragraph (1) receives the rebate under the rebate program.

(D) EXCEPTION.—The Secretary shall not disburse a rebate under the rebate program if materials submitted under subparagraph (B) do not meet the same global positioning system location and technical specifications for the electric vehicle supply equipment that is eligible under paragraph (2) provided in an application under paragraph (3).

(6) MULTI-PORT CHARGERS.—An eligible entity under paragraph (1) shall be awarded a rebate under the rebate program for covered expenses relating to the purchase and installation of a multi-port charger based on the number of publicly accessible charging ports, with each subsequent port after the first port being eligible for 50 percent of the full rebate amount.

(7) NETWORKED DIRECT CURRENT FAST CHARGING.—Of amounts appropriated to carry out the rebate program, not more than 40 percent may be used for rebates of networked direct current fast charging equipment.

(8) HYDROGEN FUEL CELL REFUELING INFRASTRUCTURE.—Hydrogen refueling equipment shall be eligible for a rebate under the rebate program as though it were networked direct current fast charging equipment. All requirements related to public accessibility of installed locations shall apply.

(9) REPORT.—Not later than 3 years after the first date on which the Secretary awards a rebate under the rebate program, the Secretary shall submit to the Committee on Energy and Commerce of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report of the number of rebates awarded for electric vehicle supply equipment and hydrogen fuel cell refueling equipment in each of the location categories described in paragraph (2)(C)(iii).

(c) DEFINITIONS.—In this section:

(1) COVERED EXPENSES.—The term ''covered expenses'' means an expense that is associated with the purchase and installation of electric vehicle supply equipment, including—

(A) the cost of electric vehicle supply equipment;

(B) labor costs associated with the installation of such electric vehicle supply equipment,

only if wages for such labor are paid at rates not less than those prevailing on similar labor in the locality of installation, as determined by the Secretary of Labor under subchapter IV of chapter 31 of title 40, United States Code (commonly referred to as the ''Davis-Bacon Act'');

(C) material costs associated with the installation of such electric vehicle supply equipment, including expenses involving electrical equipment and necessary upgrades or modifications to the electrical grid and associated infrastructure required for the installation of such electric vehicle supply equipment;

(D) permit costs associated with the installation of such electric vehicle supply equipment; and

(E) the cost of an on-site energy storage system.

(2) ELECTRIC VEHICLE.—The term ''electric vehicle'' means a vehicle that derives all or part of its power from electricity.

(3) MULTI-PORT CHARGER.—The term ''multi-port charger'' means electric vehicle supply equip-

ment capable of charging more than one electric vehicle.

(4) LEVEL 2 CHARGING EQUIPMENT.—The term ''level 2 charging equipment'' means electric vehicle supply equipment that provides an alternating current power source at a minimum of 208 volts.

(5) NETWORKED DIRECT CURRENT FAST CHARGING EQUIPMENT.—The term ''networked direct current fast charging equipment'' means electric vehicle supply equipment that provides a direct current power source at a minimum of 50 kilowatts and is enabled to connect to a network to facilitate data collection and access.

(d) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $100,000,000 for each of fiscal years 2021 through 2025.

SEC. 6503. EXPANDING ACCESS TO ELECTRIC VEHICLES IN UNDERSERVED COMMUNITIES.

(a) ASSESSMENT.—

(1) IN GENERAL.—

(A) ASSESSMENT.—The Secretary shall conduct an assessment of the state of, challenges to, and opportunities for the deployment of electric vehicle charging infrastructure in un-

derserved or disadvantaged communities located in major urban areas and rural areas throughout the United States.

(B) REPORT.—Not later than 1 year after the date of the enactment of this Act, the Secretary shall submit to the Committee on Energy and Commerce of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report on the results of the assessment conducted under subparagraph (A), which shall—

(i) describe the state of deployment of electric vehicle charging infrastructure in underserved or disadvantaged communities located in major urban areas and rural areas by providing—

(I) the number of existing and planned Level 2 charging stations and DC FAST charging stations per capita in each State for charging individually owned light-duty and medium-duty electric vehicles;

(II) the number of existing and planned Level 2 charging stations and DC FAST charging stations for

charging public and private fleet electric vehicles and medium- and heavy-duty electric equipment and electric vehicles;

(III) the number of Level 2 charging stations and DC FAST charging stations installed in or available to occupants of publicly owned and privately owned multi-unit dwellings;

(IV) information pertaining to policies, plans, and programs that cities, States, utilities, and private entities are using to encourage greater deployment and usage of electric vehicles and the associated electric vehicle charging infrastructure, including programs to encourage deployment of charging stations available to residents in publicly owned and privately owned multi-unit dwellings;

(V) information pertaining to ownership models for Level 2 charging stations and DC FAST charging stations located in publicly owned and

privately owned residential multi-unit dwellings, commercial buildings, public and private parking areas, and curb-side locations; and

(VI) information pertaining to how charging stations are financed and the rates charged for the use of Level 2 charging stations and DC FAST charging stations;

(ii) describe the methodology used to obtain the information provided in the report;

(iii) identify the barriers to expanding deployment of electric vehicle charging infrastructure in underserved or disadvantaged communities in major urban areas and rural areas, including any challenges relating to such deployment in multi-unit dwellings;

(iv) compile and provide an analysis of the best practices and policies used by State and local governments and private entities to increase deployment of electric vehicle charging infrastructure in underserved or disadvantaged communities in

major urban areas and rural areas, including best practices with respect to—

(I) public outreach and engagement; and

(II) increasing deployment of electric vehicle charging infrastructure in publicly owned and privately owned multi-unit dwellings;

(v) enumerate and identify the number of electric vehicle charging stations per capita at locations within each major urban area and rural area throughout the United States with detail at the level of ZIP Codes and census tracts; and

(vi) identify the potential for, and obstacles to, recruiting and entering into contracts with locally-owned small and disadvantaged businesses, including women- and minority-owned businesses, to deploy electric vehicle charging infrastructure in underserved or disadvantaged communities in major urban areas and rural areas.

(2) FIVE-YEAR UPDATE ASSESSMENT.—Not later than 5 years after the date of the enactment of this Act, the Secretary shall—

(A) update the assessment conducted under paragraph (1)(A); and

(B) make public and submit to the Committee on Energy and Commerce of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report, which shall—

(i) update the information required by paragraph (1)(B); and

(ii) include a description of case studies and key lessons learned after the date on which the report under paragraph (1)(B) was submitted with respect to expanding the deployment of electric vehicle charging infrastructure in underserved or disadvantaged communities in major urban areas and rural areas.

(b) DEFINITIONS.—In this section:

(1) ELECTRIC VEHICLE CHARGING INFRASTRUCTURE.—The term ''electric vehicle charging infrastructure'' means electric vehicle supply equipment and other physical assets that provide for the distribution of and access to electricity for the purpose of charging an electric vehicle or a plug-in hybrid electric vehicle.

(2) MAJOR URBAN AREA.—The term ''major urban area'' means a metropolitan statistical area within the United States with an estimated population that is greater than or equal to 1,500,000.

SEC. 6504. ENSURING PROGRAM BENEFITS FOR UNDERSERVED AND DISADVANTAGED COMMUNITIES.

In carrying out this subtitle, and the amendments made by this subtitle, the Secretary shall provide, to the extent practicable access to electric vehicle charging infrastructure, address transportation needs, and provide improved air quality in underserved or disadvantaged communities.

SEC. 6505. MODEL BUILDING CODE FOR ELECTRIC VEHICLE SUPPLY EQUIPMENT.

(a) REVIEW.—The Secretary shall review proposed or final model building codes for—

(1) integrating electric vehicle supply equipment into residential and commercial buildings that include space for individual vehicle or fleet vehicle parking; and

(2) integrating onsite renewable power equipment and electric storage equipment (including electric vehicle batteries to be used for electric storage) into residential and commercial buildings.

(b) TECHNICAL ASSISTANCE.—The Secretary shall provide technical assistance to stakeholders representing the building construction industry, manufacturers of electric vehicles and electric vehicle supply equipment, State and local governments, and any other persons with relevant expertise or interests to facilitate understanding of the model code and best practices for adoption by jurisdictions.

SEC. 6506. ELECTRIC VEHICLE SUPPLY EQUIPMENT COORDINATION.

(a) IN GENERAL.—Not later than 90 days after the date of enactment of this Act, the Secretary, acting through the Assistant Secretary of the Office of Electricity Delivery and Energy Reliability (including the Smart Grid Task Force), shall convene a group to assess progress in the development of standards necessary to—

(1) support the expanded deployment of electric vehicle supply equipment;

(2) develop an electric vehicle charging network to provide reliable charging for electric vehicles nationwide, taking into consideration range anxiety and the location of charging infrastructure to ensure an electric vehicle can travel throughout the United States without losing a charge; and

(3) ensure the development of such network will not compromise the stability and reliability of the electric grid.

(b) REPORT TO CONGRESS.—Not later than 1 year after the date of enactment of this Act, the Secretary shall provide to the Committee on Energy and Commerce of the House of Representatives and to the Committee on Energy and Natural Resources of the Senate a report containing the results of the assessment carried out under subsection (a) and recommendations to overcome any barriers to standards development or adoption identified by the group convened under such subsection.

SEC. 6507. STATE CONSIDERATION OF ELECTRIC VEHICLE CHARGING.

(a) CONSIDERATION AND DETERMINATION RESPECTING CERTAIN RATEMAKING STANDARDS.—Section 111(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)) is further amended by adding at the end the following:

''(22) ELECTRIC VEHICLE CHARGING PROGRAMS.—

''(A) IN GENERAL.—Each State shall consider measures to promote greater electrification of the transportation sector, including—

"(i) authorizing measures to stimulate investment in and deployment of electric vehicle supply equipment and to foster the market for electric vehicle charging;

"(ii) authorizing each electric utility of the State to recover from ratepayers any capital, operating expenditure, or other costs of the electric utility relating to load management, programs, or investments associated with the integration of electric vehicle supply equipment into the grid; and

"(iii) allowing a person or agency that owns and operates an electric vehicle charging facility for the sole purpose of recharging an electric vehicle battery to be excluded from regulation as an electric utility pursuant to section 3(4) when making electricity sales from the use of the electric vehicle charging facility, if such sales are the only sales of electricity made by the person or agency.

"(B) DEFINITION.—For purposes of this paragraph, the term 'electric vehicle supply equipment' means conductors, including ungrounded, grounded, and equipment ground-

ing conductors, electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatuses installed specifically for the purpose of delivering energy to an electric vehicle.''.

(b) OBLIGATIONS TO CONSIDER AND DETERMINE.—

(1) TIME LIMITATIONS.—Section 112(b) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(b)) is amended by adding at the end the following:

''(9)(A) Not later than 1 year after the date of enactment of this paragraph, each State regulatory authority (with respect to each electric utility for which it has ratemaking authority) and each nonregulated electric utility shall commence the consideration referred to in section 111, or set a hearing date for consideration, with respect to the standards established by paragraph (22) of section 111(d).

''(B) Not later than 2 years after the date of the enactment of this paragraph, each State regulatory authority (with respect to each electric utility for which it has ratemaking authority), and each nonregulated electric utility, shall complete the consideration, and shall make the determination, referred to in section 111 with respect to each stand-

ard established by paragraph (22) of section 111(d).''.

(2) FAILURE TO COMPLY.—Section 112(c) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(c)) is amended by adding at the end the following: ''In the case of the standard established by paragraph (22) of section 111(d), the reference contained in this subsection to the date of enactment of this Act shall be deemed to be a reference to the date of enactment of that paragraph.''.

(3) PRIOR STATE ACTIONS.—Section 112 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622) is amended by adding at the end the following:

''(i) PRIOR STATE ACTIONS.—Subsections (b) and (c) of this section shall not apply to the standard established by paragraph (22) of section 111(d) in the case of any electric utility in a State if, before the enactment of this subsection—

''(1) the State has implemented for such utility the standard concerned (or a comparable standard);

''(2) the State regulatory authority for such State or relevant nonregulated electric utility has conducted a proceeding to consider implementation

of the standard concerned (or a comparable standard) for such utility;

''(3) the State legislature has voted on the implementation of such standard (or a comparable standard) for such utility; or

''(4) the State has taken action to implement incentives or other steps to strongly encourage the deployment of electric vehicles.''.

(4) PRIOR AND PENDING PROCEEDINGS.—Section 124 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2634) is amended is amended by adding at the end the following: ''In the case of the standard established by paragraph (22) of section 111(d), the reference contained in this section to the date of the enactment of this Act shall be deemed to be a reference to the date of enactment of such paragraph (22).''.

SEC. 6508. STATE ENERGY PLANS.

(a) STATE ENERGY CONSERVATION PLANS.—Section 362(d) of the Energy Policy and Conservation Act (42 U.S.C. 6322(d)) is amended—

(1) in paragraph (16), by striking ''; and'' and inserting a semicolon;

(2) by redesignating paragraph (17) as paragraph (18); and

(3) by inserting after paragraph (16) the following:

''(17) a State energy transportation plan developed in accordance with section 368; and''.

(b) AUTHORIZATION OF APPROPRIATIONS.—Section 365(f) of the Energy Policy and Conservation Act (42 U.S.C. 6325(f)) is amended to read as follows:

''(f) AUTHORIZATION OF APPROPRIATIONS.—

''(1) STATE ENERGY CONSERVATION PLANS.—For the purpose of carrying out this part, there are authorized to be appropriated $100,000,000 for each of fiscal years 2021 through 2025.

''(2) STATE ENERGY TRANSPORTATION PLANS.—In addition to the amounts authorized under paragraph (1), for the purpose of carrying out section 368, there are authorized to be appropriated $25,000,000 for each of fiscal years 2021 through 2025.''.

(c) STATE ENERGY TRANSPORTATION PLANS.—

(1) IN GENERAL.—Part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.) is further amended by adding at the end the following:

"SEC. 368. STATE ENERGY TRANSPORTATION PLANS.

''(a) IN GENERAL.—The Secretary may provide financial assistance to a State to develop a State energy transportation plan, for inclusion in a State energy conservation plan under section 362(d), to promote the electrification of the transportation system, reduced consumption of fossil fuels, and improved air quality.

''(b) DEVELOPMENT.—A State developing a State energy transportation plan under this section shall carry out this activity through the State energy office that is responsible for developing the State energy conservation plan under section 362.

''(c) CONTENTS.—A State developing a State energy transportation plan under this section shall include in such plan a plan to—

''(1) deploy a network of electric vehicle supply equipment to ensure access to electricity for electric vehicles, including commercial vehicles, to an extent that such electric vehicles can travel throughout the State without running out of a charge; and

''(2) promote modernization of the electric grid, including through the use of renewable energy sources to power the electric grid, to accommodate demand for power to operate electric vehicle supply equipment and to utilize energy storage capacity

provided by electric vehicles, including commercial vehicles.

''(d) COORDINATION.—In developing a State energy transportation plan under this section, a State shall coordinate, as appropriate, with—

''(1) State regulatory authorities (as defined in section 3 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2602));

''(2) electric utilities;

''(3) regional transmission organizations or independent system operators;

''(4) private entities that provide electric vehicle charging services;

''(5) State transportation agencies, metropolitan planning organizations, and local governments;

''(6) electric vehicle manufacturers;

''(7) public and private entities that manage vehicle fleets; and

''(8) public and private entities that manage ports, airports, or other transportation hubs.

''(e) TECHNICAL ASSISTANCE.—Upon request of the Governor of a State, the Secretary shall provide information and technical assistance in the development, implementation, or revision of a State energy transportation plan.

''(f) ELECTRIC VEHICLE SUPPLY EQUIPMENT DEFINED.—For purposes of this section, the term 'electric vehicle supply equipment' means conductors, including ungrounded, grounded, and equipment grounding conductors, electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatuses installed specifically for the purpose of delivering energy to an electric vehicle.''.

(2) CONFORMING AMENDMENT.—The table of sections for part D of title III of the Energy Policy and Conservation Act is further amended by adding at the end the following:

''Sec. 368. State energy security plans.''.

SEC. 6509. TRANSPORTATION ELECTRIFICATION.

Section 131 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17011) is amended—

(1) in subsection (a)(6)—

(A) in subparagraph (A), by inserting '', including ground support equipment at ports'' before the semicolon;

(B) in subparagraph (E), by inserting ''and vehicles'' before the semicolon;

(C) in subparagraph (H), by striking ''and'' at the end;

(D) in subparagraph (I)—

(i) by striking ''battery chargers,''; and

(ii) by striking the period at the end and inserting a semicolon; and

(E) by adding at the end the following:

''(J) installation of electric vehicle supply equipment for recharging plug-in electric drive vehicles, including such equipment that is accessible in rural and urban areas and in underserved or disadvantaged communities and such equipment for medium- and heavy-duty vehicles, including at depots and in-route locations;

''(K) multi-use charging hubs used for multiple forms of transportation;

''(L) medium- and heavy-duty vehicle smart charging management and refueling;

''(M) battery recycling and secondary use, including for medium- and heavy-duty vehicles; and

''(N) sharing of best practices, and technical assistance provided by the Department to public utilities commissions and utilities, for medium- and heavy-duty vehicle electrification.'';

(2) in subsection (b)—

(A) in paragraph (3)(A)(ii), by inserting ", components for such vehicles, and charging equipment for such vehicles" after "vehicles"; and

(B) in paragraph (6), by striking "$90,000,000 for each of fiscal years 2008 through 2012" and inserting "$2,000,000,000 for each of fiscal years 2021 through 2025";

(3) in subsection (c)—

(A) in the header, by striking "NEAR-TERM" and inserting "LARGE-SCALE"; and

(B) in paragraph (4), by striking "$95,000,000 for each of fiscal years 2008 through 2013" and inserting "$2,500,000,000 for each of fiscal years 2021 through 2025"; and

(4) by redesignating subsection (d) as subsection (e) and inserting after subsection (c) the following:

"(d) PRIORITY.—In providing grants under subsections (b) and (c), the Secretary shall give priority consideration to applications that contain a written assurance that all laborers and mechanics employed by contractors or subcontractors during construction, alteration, or repair that is financed, in whole or in part, by a grant pro-

vided under this section shall be paid wages at rates not less than those prevailing on similar construction in the locality, as determined by the Secretary of Labor in accordance with sections 3141 through 3144, 3146, and 3147 of title 40, United States Code (and the Secretary of Labor shall, with respect to the labor standards described in this clause, have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (5 U.S.C. App.) and section 3145 of title 40, United States Code).''.

SEC. 6510. FEDERAL FLEETS.

(a) MINIMUM FEDERAL FLEET REQUIREMENT.—Section 303 of the Energy Policy Act of 1992 (42 U.S.C. 13212) is amended—

(1) in subsection (a), by adding at the end the following:

''(3) The Secretary, in consultation with the Administrator of General Services, shall ensure that in acquiring medium- and heavy-duty vehicles for a Federal fleet, a Federal entity shall acquire zero emission vehicles to the maximum extent feasible.'';

(2) by striking subsection (b) and inserting the following:

''(b) PERCENTAGE REQUIREMENTS.—

''(1) IN GENERAL.—

"(A) LIGHT-DUTY VEHICLES.—Beginning in fiscal year 2025, 100 percent of the total number of light-duty vehicles acquired by a Federal entity for a Federal fleet shall be alternative fueled vehicles, of which—

"(i) at least 50 percent shall be zero emission vehicles or plug-in hybrids in fiscal years 2025 through 2034;

"(ii) at least 75 percent shall be zero emission vehicles or plug-in hybrids in fiscal years 2035 through 2049; and

"(iii) 100 percent shall be zero emission vehicles in fiscal year 2050 and thereafter.

"(B) MEDIUM- AND HEAVY-DUTY VEHICLES.—The following percentages of the total number of medium- and heavy-duty vehicles acquired by a Federal entity for a Federal fleet shall be alternative fueled vehicles:

"(i) At least 20 percent in fiscal years 2025 through 2029.

"(ii) At least 30 percent in fiscal years 2030 through 2039.

"(iii) At least 40 percent in fiscal years 2040 through 2049.

''(iv) At least 50 percent in fiscal year 2050 and thereafter.

''(2) EXCEPTION.—The Secretary, in consultation with the Administrator of General Services where appropriate, may permit a Federal entity to acquire for a Federal fleet a smaller percentage than is required in paragraph (1) for a fiscal year, so long as the aggregate percentage acquired for each class of vehicle for all Federal fleets in the fiscal year is at least equal to the required percentage.

''(3) DEFINITIONS.—In this subsection:

''(A) FEDERAL FLEET.—The term 'Federal fleet' means a fleet of vehicles that are centrally fueled or capable of being centrally fueled and are owned, operated, leased, or otherwise controlled by or assigned to any Federal executive department, military department, Government corporation, independent establishment, or executive agency, the United States Postal Service, the Congress, the courts of the United States, or the Executive Office of the President. Such term does not include—

''(i) motor vehicles held for lease or rental to the general public;

''(ii) motor vehicles used for motor vehicle manufacturer product evaluations or tests;

''(iii) law enforcement vehicles;

''(iv) emergency vehicles; or

''(v) motor vehicles acquired and used for military purposes that the Secretary of Defense has certified to the Secretary must be exempt for national security reasons.

''(B) FLEET.—The term 'fleet' means—

''(i) 20 or more light-duty vehicles, located in a metropolitan statistical area or consolidated metropolitan statistical area, as established by the Bureau of the Census, with a 1980 population of more than 250,000; or

''(ii) 10 or more medium- or heavy-duty vehicles, located at a Federal facility or located in a metropolitan statistical area or consolidated metropolitan statistical area, as established by the Bureau of the Census, with a 1980 population of more than 250,000.''; and

(3) in subsection (f)(2)(B)—

(A) by striking '', either''; and

(B) in clause (i), by striking ''or'' and inserting ''and''.

(b) FEDERAL FLEET CONSERVATION REQUIREMENTS.—Section 400FF(a) of the Energy Policy and Conservation Act (42 U.S.C. 6374e) is amended—

(1) in paragraph (1)—

(A) by striking ''18 months after the date of enactment of this section'' and inserting ''12 months after the date of enactment of the Clean Economy Jobs and Innovation Act'';

(B) by striking ''2010'' and inserting ''2022''; and

(C) by striking ''and increase alternative fuel consumption'' and inserting '', increase alternative fuel consumption, and reduce vehicle greenhouse gas emissions''; and

(2) by striking paragraph (2) and inserting the following:

''(2) GOALS.—The goals of the requirements under paragraph (1) are that each Federal agency shall—

''(A) reduce fleet-wide per-mile greenhouse gas emissions from agency fleet vehicles, relative to a baseline of emissions in 2015, by—

"(i) not less than 30 percent by the end of fiscal year 2025;

"(ii) not less than 50 percent by the end of fiscal year 2030; and

"(iii) 100 percent by the end of fiscal year 2050; and

"(B) increase the annual percentage of alternative fuel consumption by agency fleet vehicles as a proportion of total annual fuel consumption by Federal fleet vehicles, to achieve—

"(i) 25 percent of total annual fuel consumption that is alternative fuel by the end of fiscal year 2025;

"(ii) 50 percent of total annual fuel consumption that is alternative fuel by the end of fiscal year 2035; and

"(iii) at least 85 percent of total annual fuel consumption that is alternative fuel by the end of fiscal year 2050.".

SEC. 6511. DOMESTIC MANUFACTURING CONVERSION GRANT PROGRAM.

(a) HYBRID VEHICLES, ADVANCED VEHICLES, AND FUEL CELL BUSES.—Subtitle B of title VII of the Energy Policy Act of 2005 (42 U.S.C. 16061 et seq.) is amended—

(1) in the subtitle header, by inserting ''**Plug-In Electric Vehicles,**'' before ''**Hybrid Vehicles**''; and

(2) in part 1, in the part header, by striking ''**HYBRID**'' and inserting ''**PLUG-IN ELECTRIC**''.

(b) PLUG-IN ELECTRIC VEHICLES.—Section 711 of the Energy Policy Act of 2005 (42 U.S.C. 16061) is amended to read as follows:

''SEC. 711. PLUG-IN ELECTRIC VEHICLES.

''The Secretary shall accelerate efforts, related to domestic manufacturing, that are directed toward the improvement of batteries, power electronics, and other technologies for use in plug-in electric vehicles.''.

(c) EFFICIENT HYBRID AND ADVANCED DIESEL VEHICLES.—Section 712 of the Energy Policy Act of 2005 (42 U.S.C. 16062) is amended—

(1) in subsection (a)—

(A) in paragraph (1), by inserting '', plug-in electric,'' after ''efficient hybrid''; and

(B) by amending paragraph (3) to read as follows:

''(3) PRIORITY.—Priority shall be given to—

''(A) the refurbishment or retooling of manufacturing facilities that have recently

ceased operation or would otherwise cease operation in the near future; and

''(B) applications containing a written assurance that—

''(i) all laborers and mechanics employed by contractors or subcontractors during construction, alteration, retooling, or repair that is financed, in whole or in part, by a grant under this subsection shall be paid wages at rates not less than those prevailing on similar construction in the locality, as determined by the Secretary of Labor in accordance with sections 3141 through 3144, 3146, and 3147 of title 40, United States Code;

''(ii) all laborers and mechanics employed by the owner or operator of a manufacturing facility that is financed, in whole or in part, by a grant under this subsection shall be paid wages at rates not less than those prevailing on similar construction in the locality, as determined by the Secretary of Labor in accordance with sections 3141 through 3144, 3146, and 3147 of title 40, United States Code; and

''(iii) the Secretary of Labor shall, with respect to the labor standards described in this paragraph, have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (5 U.S.C. App.) and section 3145 of title 40, United States Code.''; and

(2) by striking subsection (c) and inserting the following:

''(c) COST SHARE AND GUARANTEE OF OPERATION.—

''(1) CONDITION.—A recipient of a grant under this section shall pay the Secretary the full amount of the grant if the facility financed in whole or in part under this subsection fails to manufacture goods for a period of at least 10 years after the completion of construction.

''(2) COST SHARE.—Section 988(c) shall apply to a grant made under this subsection.

''(d) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary to carry out this section $2.5 billion for each of fiscal years 2021 through 2025.

''(e) PERIOD OF AVAILABILITY.—An award made under this section after the date of enactment of this sub-

section shall only be available with respect to facilities and equipment placed in service before December 30, 2035.''.

(d) CONFORMING AMENDMENT.—The table of contents of the Energy Policy Act of 2005 is amended—

(1) in the item relating to subtitle B of title VII, by inserting ''Plug-In Electric Vehicles,'' before ''Hybrid Vehicles'';

(2) in the item relating to part 1 of such subtitle, by striking ''Hybrid'' and inserting ''Plug-In Electric''; and

(3) in the item relating to section 711, by striking ''Hybrid'' and inserting ''Plug-in electric''.

SEC. 6512. ADVANCED TECHNOLOGY VEHICLES MANUFACTURING INCENTIVE PROGRAM.

Section 136 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17013) is amended—

(1) in subsection (a)—

(A) in paragraph (1)—

(i) by redesignating subparagraphs (A) through (C) as clauses (i) through (iii), respectively, and indenting appropriately;

(ii) by striking ''(1) ADVANCED TECHNOLOGY VEHICLE.—'' and all that follows

through ''meets—'' and inserting the following:

''(1) ADVANCED TECHNOLOGY VEHICLE.—The term 'advanced technology vehicle' means—

''(A) an ultra efficient vehicle;

''(B) a light-duty vehicle or medium-duty passenger vehicle that—'';

(iii) in subparagraph (B)(i) (as so redesignated), by striking ''the Bin 5 Tier II'' and inserting ''meets the Bin 160 Tier III'';

(iv) in subparagraph (B)(ii) (as so redesignated), by inserting ''meets'' before ''any new'';

(v) by amending subparagraph (B)(iii) (as so redesignated) to read as follows:

''(iii)(I) for vehicles produced in model years 2021 through 2025, meets the applicable regulatory standards for emissions of greenhouse gases for model year 2021 through 2025 vehicles promulgated by the Administrator of the Environmental Protection Agency on October 15, 2012 (77 Fed. Reg. 62624); or

"(II) emits zero emissions of greenhouse gases; or"; and

(vi) by adding at the end the following:

"(C) a heavy-duty vehicle (excluding a medium-duty passenger vehicle) that—

"(i) complies early with and demonstrates achievement below the applicable regulatory standards for emissions of greenhouse gases for model year 2027 vehicles promulgated by the Administrator on October 25, 2016 (81 Fed. Reg. 73478); or

"(ii) emits zero emissions of greenhouse gases.";

(B) by striking paragraph (2) and redesignating paragraph (3) as paragraph (2);

(C) by striking paragraph (4) and inserting the following:

"(3) QUALIFYING COMPONENT.—The term 'qualifying component' means a material, technology, component, system, or subsystem in an advanced technology vehicle, including an ultra-efficient component.

''(4) ULTRA-EFFICIENT COMPONENT.—The term 'ultra-efficient component' means a component of an ultra efficient vehicle, including—

''(A) fuel cell technology;

''(B) battery technology, including a battery cell, battery, battery management system, or thermal control system;

''(C) an automotive semiconductor or computer;

''(D) an electric motor, axle, or component; and

''(E) an advanced lightweight, high-strength, or high-performance material.''; and

(D) in paragraph (5)—

(i) in subparagraph (B), by striking ''or'' at the end;

(ii) in subparagraph (C), by striking the period at the end and inserting ''; or''; and

(iii) by adding at the end the following:

''(D) at least 75 miles per gallon equivalent while operating as a hydrogen fuel cell electric vehicle.'';

(2) by amending subsection (b) to read as follows:

''(b) ADVANCED VEHICLES MANUFACTURING FACILITY.—

''(1) IN GENERAL.—The Secretary shall provide facility funding awards under this section to advanced technology vehicle manufacturers and component suppliers to pay not more than 50 percent of the cost of—

''(A) reequipping, expanding, or establishing a manufacturing facility in the United States to produce—

''(i) advanced technology vehicles; or

''(ii) qualifying components; and

''(B) engineering integration performed in the United States of advanced technology vehicles and qualifying components.

''(2) ULTRA-EFFICIENT COMPONENTS COST SHARE.—Notwithstanding paragraph (1), a facility funding award under such paragraph may pay not more than 80 percent of the cost of a project to reequip, expand, or establish a manufacturing facility in the United States to produce ultra-efficient components.'';

(3) in subsection (c), by striking ''2020'' and inserting ''2030'' each place it appears;

(4) in subsection (d)—

(A) by amending paragraph (2) to read as follows:

''(2) APPLICATION.—An applicant for a loan under this subsection shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require, including—

''(A) a written assurance that—

''(i) all laborers and mechanics employed by contractors or subcontractors during construction, alteration, or repair, or at any manufacturing operation, that is financed, in whole or in part, by a loan under this section shall be paid wages at rates not less than those prevailing in a similar firm or on similar construction in the locality, as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code; and

''(ii) the Secretary of Labor shall, with respect to the labor standards de-

scribed in this paragraph, have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40, United States Code;

''(B) a disclosure of whether there has been any administrative merits determination, arbitral award or decision, or civil judgment, as defined in guidance issued by the Secretary of Labor, rendered against the applicant in the preceding 3 years for violations of applicable labor, employment, civil rights, or health and safety laws;

''(C) specific information regarding the actions the applicant will take to demonstrate compliance with, and where possible exceedance of, requirements under applicable labor, employment, civil rights, and health and safety laws, and actions the applicant will take to ensure that its direct suppliers demonstrate compliance with applicable labor, employment, civil rights, and health and safety laws; and

''(D) an estimate and description of the jobs and types of jobs to be retained or created by the project and the specific actions the appli-

cant will take to increase employment and retention of dislocated workers, veterans, individuals from low-income communities, women, minorities, and other groups underrepresented in manufacturing, and individuals with a barrier to employment.'';

(B) by amending paragraph (3) to read as follows:

''(3) SELECTION OF ELIGIBLE PROJECTS.—The Secretary shall select eligible projects to receive loans under this subsection in cases in which the Secretary determines—

''(A) the loan recipient—

''(i) has a reasonable prospect of repaying the principal and interest on the loan;

''(ii) will provide sufficient information to the Secretary for the Secretary to ensure that the qualified investment is expended efficiently and effectively; and

''(iii) has met such other criteria as may be established and published by the Secretary; and

''(B) the amount of the loan (when combined with amounts available to the loan recipi-

ent from other sources) will be sufficient to carry out the project.''; and

(C) in paragraph (4)—

(i) in subparagraph (B)(i), by striking ''; and'' and inserting ''; or'';

(ii) in subparagraph (C), by striking ''; and'' and inserting a semicolon;

(iii) in subparagraph (D), by striking the period at the end and inserting ''; and''; and

(iv) by adding at the end the following:

''(E) shall be subject to the condition that the loan is not subordinate to other financing.'';

(5) by amending subsection (e) to read as follows:

''(e) REGULATIONS.—Not later than 6 months after the date of enactment of the Clean Economy Jobs and Innovation Act, the Secretary shall issue a final rule establishing regulations to carry out this section.'';

(6) by amending subsection (f) to read as follows:

''(f) FEES.—The Secretary shall charge and collect fees for loans under this section in amounts the Secretary determines are sufficient to cover applicable administra-

tive expenses (including any costs associated with third-party consultants engaged by the Secretary), which may not exceed $100,000 or 10 basis points of the loan and may not be collected prior to financial closing.'';

(7) by amending subsection (g) to read as follows:

''(g) PRIORITY.—The Secretary shall, in making awards or loans to those manufacturers that have existing facilities (which may be idle), give priority to those facilities that are or would be—

''(1) oldest or in existence for at least 20 years;

''(2) recently closed, or at risk of closure;

''(3) utilized primarily for the manufacture of medium-duty passenger vehicles or other heavy-duty vehicles that emit zero greenhouse gas emissions; or

''(4) utilized primarily for the manufacture of ultra-efficient components.'';

(8) in subsection (h)—

(A) in the header, by striking ''AUTOMOBILE'' and inserting ''ADVANCED TECHNOLOGY VEHICLE''; and

(B) in paragraph (1)(B), by striking ''automobiles, or components of automobiles'' and inserting ''advanced technology vehicles, or components of advanced technology vehicles'';

(9) by striking subsection (i) and redesignating subsection (j) as subsection (i); and

(10) by adding at the end the following:

''(j) COORDINATION.—In carrying out this section, the Secretary shall coordinate with relevant vehicle, bioenergy, and hydrogen and fuel cell demonstration project activities supported by the Department.

''(k) OUTREACH.—In carrying out this section, the Secretary shall—

''(1) provide assistance with the completion of applications for awards or loans under this section; and

''(2) conduct outreach, including through conferences and online programs, to disseminate information on awards and loans under this section to potential applicants.

''(l) REPORT.—Not later than 2 years after the date of the enactment of this subsection, and every 3 years thereafter, the Secretary shall submit to Congress a report on the status of projects supported by a loan under this section, including—

''(1) a list of projects receiving a loan under this section, including the loan amount and construction status of each such project;

''(2) the status of each project's loan repayment, including future repayment projections;

''(3) data regarding the number of direct and indirect jobs retained, restored, or created by financed projects;

''(4) the number of new projects projected to receive a loan under this section in the next 2 years and the aggregate loan amount; and

''(5) any other metrics the Secretary finds appropriate.

''(m) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section—

''(1) $10,000,000 for each of fiscal years 2021 through 2025 to administer this section; and

''(2) $10,000,000 for fiscal year 2021, to remain available until expended, for administrative costs associated with loans under this section that are not covered by fees collected under subsection (f).''.

Subtitle F—Vehicles Used for Competition

SEC. 6601. TREATMENT OF VEHICLES NOT LEGAL FOR OPERATION ON A STREET OR HIGHWAY AND USED SOLELY FOR COMPETITION.

(a) TREATMENT.—An action with respect to any device or element of design referred to in paragraph (3) of section 203(a) of the Clean Air Act (42 U.S.C. 7522(a)) shall not be treated as a prohibited act under such paragraph if the action is for the purpose of modifying a motor vehicle that is not legal for operation on a street or highway and is to be used solely for competition.

(b) IMPLEMENTATION.—Not later than 18 months after the date of enactment of this Act, the Administrator of the Environmental Protection Agency shall promulgate final regulations as necessary to implement subsection (a).

Subtitle G—Clean Refrigerated Vehicles Program

SEC. 6701. PILOT PROGRAM FOR THE ELECTRIFICATION OF CERTAIN REFRIGERATED VEHICLES.

(a) ESTABLISHMENT OF PILOT PROGRAM.—The Administrator shall establish and carry out a pilot program to award funds, in the form of grants, rebates, and low-cost revolving loans, as determined appropriate by the Ad-

ministrator, on a competitive basis, to eligible entities to carry out projects described in subsection (b).

(b) PROJECTS.—An eligible entity receiving an award of funds under subsection (a) may use such funds only for one or more of the following projects:

(1) TRANSPORT REFRIGERATION UNIT REPLACEMENT.—A project to retrofit a heavy-duty vehicle by replacing or retrofitting the existing diesel-powered transport refrigeration unit in such vehicle with an electric transport refrigeration unit and retiring the replaced unit for scrappage.

(2) SHORE POWER INFRASTRUCTURE.—A project to purchase and install shore power infrastructure or other equipment that enables transport refrigeration units to connect to electric power and operate without using diesel fuel.

(c) MAXIMUM AMOUNTS.—The amount of an award of funds under subsection (a) shall not exceed—

(1) for the costs of a project described in subsection (b)(1), 75 percent of such costs; and

(2) for the costs of a project described in subsection (b)(2), 55 percent of such costs.

(d) APPLICATIONS.—To be eligible to receive an award of funds under subsection (a), an eligible entity shall submit to the Administrator—

(1) a description of the air quality in the area served by the eligible entity, including a description of how the air quality is affected by diesel emissions from heavy-duty vehicles;

(2) a description of the project proposed by the eligible entity, including—

(A) any technology to be used or funded by the eligible entity; and

(B) a description of the heavy-duty vehicle or vehicles of the eligible entity, that will be retrofitted, if any, including—

(i) the number of such vehicles;

(ii) the uses of such vehicles;

(iii) the locations where such vehicles dock for the purpose of loading or unloading; and

(iv) the routes driven by such vehicles, including the times at which such vehicles are driven;

(3) an estimate of the cost of the proposed project;

(4) a description of the age and expected lifetime control of the equipment used or funded by the eligible entity; and

(5) provisions for the monitoring and verification of the project including to verify scrappage of replaced units.

(e) PRIORITY.—In awarding funds under subsection (a), the Administrator shall give priority to proposed projects that, as determined by the Administrator—

(1) maximize public health benefits;

(2) are the most cost-effective; and

(3) will serve the communities that are most polluted by diesel motor emissions, including communities that the Administrator identifies as being in either nonattainment or maintenance of the national ambient air quality standards for a criteria pollutant, particularly for—

(A) ozone; and

(B) particulate matter.

(f) DATA RELEASE.—Not later than 120 days after the date on which an award of funds is made under this section, the Administrator shall publish on the website of the Environmental Protection Agency, on a downloadable electronic database, information with respect to such award of funds, including—

(1) the name and location of the recipient;

(2) the total amount of funds awarded;

(3) the intended use or uses of the awarded funds;

(4) the date on which the award of funds was approved;

(5) where applicable, an estimate of any air pollution or greenhouse gas emissions avoided as a result of the project funded by the award; and

(6) any other data the Administrator determines to be necessary for an evaluation of the use and effect of awarded funds provided under this section.

(g) REPORTS TO CONGRESS.—

(1) ANNUAL REPORT TO CONGRESS.—Not later than 1 year after the date of the establishment of the pilot program under this section, and annually thereafter until amounts made available to carry out this section are expended, the Administrator shall submit to Congress and make available to the public a report that describes, with respect to the applicable year—

(A) the number of applications for awards of funds received under such program;

(B) all awards of funds made under such program, including a summary of the data described in subsection (f);

(C) the estimated reduction of annual emissions of air pollutants regulated under section 109 of the Clean Air Act (42 U.S.C. 7409), and the estimated reduction of greenhouse gas emissions, associated with the awards of funds made under such program;

(D) the number of awards of funds made under such program for projects in communities described in subsection (e)(3); and

(E) any other data the Administrator determines to be necessary to describe the implementation, outcomes, or effectiveness of such program.

(2) FINAL REPORT.—Not later than 1 year after amounts made available to carry out this section are expended, or 5 years after the pilot program is established, whichever comes first, the Administrator shall submit to Congress and make available to the public a report that describes—

(A) all of the information collected for the annual reports under paragraph (1);

(B) any benefits to the environment or human health that could result from the widespread application of electric transport refrigeration units for short-haul transportation and

delivery of perishable goods or other goods requiring climate-controlled conditions, including in low-income communities and communities of color;

(C) any challenges or benefits that recipients of awards of funds under such program reported with respect to the integration or use of electric transport refrigeration units and associated technologies;

(D) an assessment of the national market potential for electric transport refrigeration units;

(E) an assessment of challenges and opportunities for widespread deployment of electric transport refrigeration units, including in urban areas; and

(F) recommendations for how future Federal, State, and local programs can best support the adoption and widespread deployment of electric transport refrigeration units.

(h) DEFINITIONS.—In this section:

(1) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of the Environmental Protection Agency.

(2) DIESEL-POWERED TRANSPORT REFRIGERATION UNIT.—The term ''diesel-powered transport refrigeration unit'' means a transport refrigeration unit that is powered by an independent diesel internal combustion engine.

(3) ELECTRIC TRANSPORT REFRIGERATION UNIT.—The term ''electric transport refrigeration unit'' means a transport refrigeration unit in which the refrigeration or climate-control system is driven by an electric motor when connected to shore power infrastructure or other equipment that enables transport refrigeration units to connect to electric power, including all-electric transport refrigeration units, hybrid electric transport refrigeration units, and standby electric transport refrigeration units.

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

(A) a regional, State, local, or Tribal agency, or port authority, with jurisdiction over transportation or air quality;

(B) a nonprofit organization or institution that—

(i) represents or provides pollution reduction or educational services to persons or organizations that own or operate

heavy-duty vehicles or fleets of heavy-duty vehicles; or

(ii) has, as its principal purpose, the promotion of air quality;

(C) an individual or entity that is the owner of record of a heavy-duty vehicle or a fleet of heavy-duty vehicles that operates for the transportation and delivery of perishable goods or other goods requiring climate-controlled conditions;

(D) an individual or entity that is the owner of record of a facility that operates as a warehouse or storage facility for perishable goods or other goods requiring climate-controlled conditions; or

(E) a hospital or public health institution that utilizes refrigeration for storage of perishable goods or other goods requiring climate-controlled conditions.

(5) HEAVY-DUTY VEHICLE.—The term ''heavy-duty vehicle'' means—

(A) a commercial truck or van—

(i) used for the primary purpose of transporting perishable goods or other

goods requiring climate-controlled conditions; and

(ii) with a gross vehicle weight rating greater than 6,000 pounds; or

(B) an insulated cargo trailer used in transporting perishable goods or other goods requiring climate-controlled conditions when mounted on a semitrailer.

(6) SHORE POWER INFRASTRUCTURE.—The term ''shore power infrastructure'' means electrical infrastructure that provides power to the electric transport refrigeration unit of a heavy-duty vehicle when such vehicle is stationary on a property where such vehicle is parked or loaded, including a food distribution center or other location where heavy-duty vehicles congregate.

(7) TRANSPORT REFRIGERATION UNIT.—The term ''transport refrigeration unit'' means a climate-control system installed on a heavy-duty vehicle for the purpose of maintaining the quality of perishable goods or other goods requiring climate-controlled conditions.

(i) AUTHORIZATION OF APPROPRIATIONS.—

(1) IN GENERAL.—There is authorized to be appropriated to carry out this section $10,000,000, to remain available until expended.

(2) ADMINISTRATIVE EXPENSES.—The Administrator may use not more than 1 percent of amounts made available pursuant to paragraph (1) for administrative expenses to carry out this section.

Subtitle H—Low-Carbon Fuels

SEC. 6801. STUDY BY NATIONAL ACADEMY OF SCIENCES.

(a) IN GENERAL.—The Administrator of the Environmental Protection Agency, after consultation with the Secretary of Energy and the Secretary of Agriculture, shall seek to enter into an agreement with the National Academy of Sciences (or, if the Academy declines, another appropriate entity) under which the Academy (or other appropriate entity) agrees to—

(1) assess current methods for life cycle greenhouse gas emissions analyses for low-carbon transportation fuels in the United States; and

(2) develop a framework for assessing broader environmental implications of low-carbon transportation fuels in addition to greenhouse gas emissions.

(b) TIMING OF AGREEMENT.—The Administrator shall seek to enter into the agreement described in sub-

section (a) not later than 60 days after the date of enactment of this Act.

(c) ASSESSMENT.—The assessment pursuant to subsection (a)(1) shall examine methods for calculating life cycle greenhouse gas emissions associated with transportation fuels (liquid and nonliquid), including—

(1) direct greenhouse gas emissions, including all stages of fuel and feedstock production, distribution, and use; and

(2) potentially significant indirect greenhouse gas emissions.

(d) FRAMEWORK.—The framework pursuant to subsection (a)(2) shall include a recommended framework and approaches for detailed quantitative assessments of the comparative environmental implications of low-carbon transportation fuels (liquid and nonliquid), including—

(1) life cycle implications for air, water, land, and ecosystems in different regions of the United States and over time; and

(2) potential environmental implications over the life cycle of transportation fuels for low-income and disadvantaged communities and communities of color.

(e) REPORTS.—The agreement under subsection (a) shall provide for the publication by the Academy (or other appropriate entity) of—

(1) not later than 12 months after the date of enactment of this Act, a report—

(A) describing the results of the assessment under subsection (a)(1); and

(B) recommending a standardized approach to calculating life cycle greenhouse gas emissions from low-carbon transportation fuels (liquid and nonliquid); and

(2) not later than 18 months after the date of enactment of this Act, a report providing recommendations for a framework to assess environmental implications, in addition to greenhouse gas emissions, of low-carbon transportation fuels (liquid and nonliquid).

(f) DEFINITIONS.—In this section:

(1) ACADEMY.—The term ''Academy'' means the National Academy of Sciences.

(2) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of the Environmental Protection Agency.

(3) LIFE CYCLE GREENHOUSE GAS EMISSIONS.—The term ''life cycle greenhouse gas emis-

sions'' means the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes), as determined by the Academy (or other appropriate entity) over the full life cycle of the respective greenhouse gases, across all stages of a given fuel's supply chain, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential and residence time.

(4) OTHER APPROPRIATE ENTITY.—The term ''other appropriate entity'' means the other appropriate entity with which the agreement under subsection (a) is entered into if the Academy declines to enter into the agreement.

Subtitle I—Climate Action Planning for Ports

SEC. 6901. GRANTS TO REDUCE GREENHOUSE GAS EMISSIONS AT PORTS.

(a) GRANTS.—The Administrator of the Environmental Protection Agency may award grants to eligible entities—

(1) to implement plans to reduce greenhouse gas emissions at one or more ports or port facilities

within the jurisdictions of the respective eligible entities; and

(2) to develop climate action plans described in subsection (b)(2).

(b) APPLICATION.—

(1) IN GENERAL.—To seek a grant under this section, an eligible entity shall submit an application to the Administrator of the Environmental Protection Agency at such time, in such manner, and containing such information and assurances as the Administrator may require.

(2) CLIMATE ACTION PLAN.—At a minimum, each such application shall contain—

(A) a detailed and strategic plan, to be known as a climate action plan, that outlines how the eligible entity will develop and implement climate change mitigation or adaptation measures through the grant; or

(B) a request pursuant to subsection (a)(2) for funding for the development of a climate action plan.

(3) REQUIRED COMPONENTS.—A climate action plan under paragraph (2) shall demonstrate that the measures proposed to be implemented through the grant—

(A) will reduce greenhouse gas emissions at the port or port facilities involved pursuant to greenhouse gas emission reduction goals set forth in the climate action plan;

(B) will reduce other air pollutants at the port or port facilities involved pursuant to criteria pollutant emission reduction goals set forth in the climate action plan;

(C) will implement emissions accounting and inventory practices to determine baseline emissions and measure progress; and

(D) will ensure labor protections for workers employed directly at the port or port facilities involved, including by—

(i) demonstrating that implementation of the measures proposed to be implemented through the grant will not result in a net loss of jobs at the port or port facilities involved;

(ii) ensuring that laborers and mechanics employed by contractors and subcontractors on construction projects to implement the plan will be paid wages not less than those prevailing on similar construction in the locality, as determined by

the Secretary of Labor under sections 3141 through 3144, 3146, and 3147 of title 40, United States Code; and

(iii) requiring any projects initiated to carry out the plan with total capital costs of $1,000,000 or greater to utilize a project labor agreement and not impact any preexisting project labor agreement.

(4) OTHER COMPONENTS.—In addition to the components required by paragraph (3), a climate action plan under paragraph (2) shall demonstrate that the measures proposed to be implemented through the grant will do at least 2 of the following:

(A) Improve energy efficiency at a port or port facility, including by using—

(i) energy-efficient vehicles, such as hybrid, low-emission, or zero-emission vehicles;

(ii) energy efficient cargo-handling, harbor vessels, or storage facilities such as energy-efficient refrigeration equipment;

(iii) energy-efficient lighting;

(iv) shore power; or

(v) other energy efficiency improvements.

(B) Deploy technology or processes that reduce idling of vehicles at a port or port facility.

(C) Reduce the direct emissions of greenhouse gases and other air pollutants with a goal of achieving zero emissions, including by replacing and retrofitting equipment (including vehicles onsite, cargo-handling equipment, or harbor vessels) at a port or port facility.

(5) PROHIBITED USE.—An eligible entity may not use a grant provided under this section—

(A) to purchase fully automated cargo handling equipment;

(B) to build, or plan to build, terminal infrastructure that is designed for fully automated cargo handling equipment;

(C) to purchase, test, or develop highly automated trucks, chassis, or any related equipment that can be used to transport containerized freight; or

(D) to extend to any independent contractor, independent owner, operator, or other entity that is not using employees for the sake of performing work on terminal grounds.

(6) COORDINATION WITH STAKEHOLDERS.—In developing a climate action plan under paragraph (2), an eligible entity shall—

(A) identify and collaborate with stakeholders who may be affected by the plan, including local environmental justice communities and other near-port communities;

(B) address the potential cumulative effects of the plan on stakeholders when those effects may have a community-level impact; and

(C) ensure effective advance communication with stakeholders to avoid and minimize conflicts.

(c) PRIORITY.—In awarding grants under this section, the Administrator of the Environmental Protection Agency shall give priority to applicants proposing—

(1) to strive for zero emissions as a key strategy within the grantee's climate action plan under paragraph (2);

(2) to take a regional approach to reducing greenhouse gas emissions at ports;

(3) to collaborate with near-port communities to identify and implement mutual solutions to reduce air pollutants at ports or port facilities affecting such communities, with emphasis given to implemen-

tation of such solutions in near-port communities that are environmental justice communities;

(4) to implement activities with off-site benefits, such as by reducing air pollutants from vehicles, equipment, and vessels at sites other than the port or port facilities involved; and

(5) to reduce localized health risk pursuant to health risk reduction goals that are set within the grantee's climate action plan under paragraph (2).

(d) MODEL METHODOLOGIES.—The Administrator of the Environmental Protection Agency shall—

(1) develop model methodologies which grantees under this section may choose to use for emissions accounting and inventory practices referred to in subsection (b)(3)(C); and

(2) ensure that such methodologies are designed to measure progress in reducing air pollution at near-port communities.

(e) DEFINITIONS.—In this section:

(1) The term ''Administrator'' means the Administrator of the Environmental Protection Agency.

(2) The term ''cargo-handling equipment'' includes—

(A) ship-to-shore container cranes and other cranes;

(B) container-handling equipment; and

(C) equipment for moving or handling cargo, including trucks, reachstackers, toploaders, and forklifts.

(3) The term ''eligible entity'' means—

(A) a port authority;

(B) a State, regional, local, or Tribal agency that has jurisdiction over a port authority or a port;

(C) an air pollution control district; or

(D) a private entity (including any nonprofit organization) that—

(i) applies for a grant under this section in collaboration with an entity described in subparagraph (A), (B), or (C) ; and

(ii) owns, operates, or uses a port facility, cargo equipment, transportation equipment, related technology, or a warehouse facility at a port or port facility.

(4) The term ''environmental justice community'' means a community with significant representation of communities of color, low-income communities, or Tribal and indigenous communities, that

experiences, or is at risk of experiencing, higher or more adverse human health or environmental effects.

(5) The term ''harbor vessel'' includes a ship, boat, lighter, or maritime vessel designed for service at and around harbors and ports.

(6) The term ''inland port'' means a logistics or distribution hub that is located inland from navigable waters, where cargo, such as break-bulk cargo or cargo in shipping containers, is processed, stored, and transferred between trucks, rail cars, or aircraft.

(7) The term ''port'' includes an inland port.

(8) The term ''stakeholder'' means residents, community groups, businesses, business owners, labor unions, commission members, or groups from which a near-port community draws its resources that—

(A) have interest in the climate action plan of a grantee under this section; or

(B) can affect or be affected by the objectives and policies of such a climate action plan.

(f) AUTHORIZATION OF APPROPRIATIONS.—

(1) IN GENERAL.—To carry out this subtitle, there is authorized to be appropriated $250,000,000 for each of fiscal years 2021 through 2025.

(2) DEVELOPMENT OF CLIMATE ACTION PLANS.—In addition to the authorization of appropriations in paragraph (1), there is authorized to be appropriated for grants pursuant to subsection (a)(2) to develop climate action plans $50,000,000 for fiscal year 2021, to remain available until expended.

Subtitle J—Research and Development

SEC. 6911. DEFINITIONS.

In this subtitle:

(1) ALTERNATIVE FUEL.—The term ''alternative fuel'' means a fuel that is sustainably produced and, or, that results in a significant reduction in carbon dioxide (CO2) emissions, or other particulate or toxic emissions, over the lifecycle of such fuel.

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

(3) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

SEC. 6912. VEHICLE RESEARCH AND DEVELOPMENT.

(a) IN GENERAL.—The Secretary shall conduct a program of research, development, and demonstration activities on more efficient and sustainable materials, technologies, and processes with the potential to substantially

reduce or eliminate petroleum from the manufacture, use, and the emissions of the passenger and commercial vehicles with lower cost of vehicle manufacturing and ownership, including activities in the areas of—

(1) electrification of vehicle systems; including compact and efficient electric drivetrain systems;

(2) power electronics, electric machines, and electric machine drive systems, including—

(A) electronic motors, including advanced inverters and motors that can be used for passenger vehicles and commercial vehicles;

(B) magnetic materials, including permanent magnets with reduced or no critical materials;

(C) improving partial load efficiency;

(D) design of power electronics and electric motor technologies that enable efficient recycling of critical materials; and

(E) other technically feasible areas for power electronics and electric machine advances.

(3) vehicle batteries and relevant systems, including—

(A) advanced batteries systems, ultracapacitors, and other competitive energy storage devices;

(B) the development of common interconnection protocols, specifications, and architecture for both transportation and stationary battery applications;

(C) improving energy density and capacity, recharging robustness, extreme fast charging and wireless charging capabilities, and efficiencies to lower cost;

(D) thermal management of battery systems;

(E) improving efficient use, substitution, and recycling of potentially critical materials in vehicles, including rare earth elements and precious metals, at risk of supply disruption; and

(F) advanced battery protection systems for safe handling of high voltage power;

(4) vehicle, component, and subsystem manufacturing technologies and processes;

(5) vehicle systems and components, including—

(A) engine efficiency and combustion optimization;

(B) waste heat recovery;

(C) transmission and drivetrains;

(D) advanced boosting systems;

(E) idle reduction systems and components;

(F) innovative propulsion systems; and

(G) vehicle fuel cells and relevant systems;

(6) hybrid and alternative fuel vehicles, including—

(A) vehicle fuel cells and relevant systems, including power electronics systems to regulate the fuel cell voltages;

(B) synthetic fuels from recycled CO2 and net-zero carbon liquid fuels; and

(C) advanced biofuel technologies;

(7) aftertreatment technologies, aerodynamics, rolling resistance (including tires and wheel assemblies), accessory power loads of vehicles and associated equipment, friction and wear reduction, and lubricants for hybrid and electric vehicles;

(8) vehicle weight reduction, including—

(A) more sustainable and cost-effective lightweighting materials; and

(B) the development of higher efficiency manufacturing processes to make sustainable

lightweight materials and fabricate, assemble, and use dissimilar materials, including—

(i) lightweighted systems which combine several existing vehicle components; and

(ii) voluntary, consensus-based standards for strategic lightweight materials;

(9) improved vehicle recycling methods to increase the recycled material content of feedstocks used in raw material manufacturing;

(10) vehicle propulsion systems, including—

(A) engine and component durability;

(B) engine down speeding;

(C) engine compatibility with and optimization for a variety of transportation fuels, including biofuels, synthetic fuels, and other liquid and gaseous fuels;

(D) advanced internal combustion engines;

(E) transmission gear and engine operation matching; and

(F) advanced transmission technologies;

(11) predictive engineering, modeling, and simulation of components, vehicle and transportation systems;

(12) leveraging automation in both vehicle and infrastructure systems;

(13) infrastructure, including—

(A) refueling and charging infrastructure for alternative fueled and electric drive or plug-in electric hybrid vehicles, including the unique challenges facing rural areas;

(B) extreme fast wired and wireless charging systems;

(C) integration, bidirectional capability, and operational optimization of vehicle electrification for light, medium, and heavy duty with the charging infrastructure and the grid; and

(D) sensing, communications, and actuation technologies for vehicle, electric grid, and infrastructure, including—

(i) communication and connectivity among vehicles, infrastructure, and the electrical grid; and

(ii) vehicle-to-vehicle, vehicle-to-pedestrian, vehicle-to-cloud, and vehicle-to-infrastructure technologies;

(14) retrofitting advanced vehicle technologies to existing vehicles;

(15) transportation system analysis to further understand the energy implications and opportunities of advanced mobility solutions, including—

(A) advanced vehicle technologies, including automation;

(B) new mobility business models, real time information, transit, and micro mobility choices;

(C) consumer travel decisions and e-commerce engagement, including travel behavior and potential strategies for reducing vehicle miles traveled to reduce emissions;

(D) goods movement and delivery interactions, including with car transport;

(E) infrastructure advancements and linkage with vehicle-to-everything,

(F) quantification of technology, policy, and investment decisions on mobility, access, equity, and the environment; and

(G) overall system optimization;

(16) aligned industry standards for strategic lightweight materials;

(17) energy efficient advanced computing systems, technology, and networking for vehicular onboard, off-board, and edge computing applications;

(18) identifying strategies to mitigate the long-term ramification of vehicle and mobility technology research, development, and demonstration stemming from events such as economic downturns; and

(19) other innovative technologies research and development as determined by the Secretary.

(b) SECURITY OF ON-ROAD TRANSPORTATION.—

(1) IN GENERAL.—The Secretary, in coordination with other relevant Federal agencies, shall establish a research and development program focused on the cyber and physical security of interconnections between vehicles, charging equipment, buildings, and the grid for plug-in electric vehicles, connected vehicles, and autonomous vehicles, including the security impacts, efficiency, and safety of plug-in electric vehicles using alternating current charging, high-power direct current fast charging, and extreme fast charging, defined as charge rates of 350kW and above.

(2) ASSESSMENT.—The Secretary shall develop an assessment of emergent cybersecurity threats and vulnerabilities to the United States on-road transportation system and connected infrastructure with 5- to 10-year impact by identifying areas of research where Federal cross-agency research coordination

and cooperation will help address such threats and vulnerabilities.

(3) REPORT.—Not later than 180 days after the date of enactment of this Act, 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 report summarizing the current research and challenges associated with cyber-physical protection and resiliency of electric and connected and automated vehicle technologies.

(c) VEHICLE ENERGY STORAGE SYSTEM SAFETY.—

(1) IN GENERAL.—The Secretary shall support a program of research, development, and demonstration of vehicle energy storage safety and reliability.

(2) ACTIVITIES.—In carrying out this section, the Secretary shall support activities to—

(A) research the mechanisms that lead to vehicle energy storage system safety and reliability incidents;

(B) develop new materials to improve overall vehicle energy storage system safety and abuse tolerance;

(C) perform abuse testing;

(D) advance testing techniques;

(E) demonstrate detailed failure analyses;

(F) develop strategies to mitigate vehicle energy storage cell and system failures; and

(G) development of crush-induced battery safety protocols and standards to improve robustness.

(d) VEHICLE TECHNOLOGIES ADVISORY COMMITTEE.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary shall establish the Advanced Vehicle Technologies Advisory Committee (in this section referred to as the ''advisory committee'') to advise the Secretary on vehicle technology and mobility system research advancements. The advisory committee shall be composed of not fewer than 15 members, including representatives of research and academic institutions, environmental organizations, industry, and nongovernmental entities, who are qualified to provide advice on the research, development, and demonstration activities under this Act (in this section referred to as the DOE Vehicle Program).

(2) ASSESSMENT.—The advisory committee shall assess—

(A) the current state of United States competitiveness in advancing vehicle technologies and mobility systems, including—

(i) the scope and scale of United States investments in sustainable transportation research, development, demonstration, and

(ii) research, development, and demonstration activities to lower vehicle and fuel lifecycle emissions;

(B) progress made in implementing the DOE Vehicle Program, including progress of research activities to lower vehicle emissions, considering emissions at each stage of the vehicle and fuel lifecycle;

(C) the need to revise the DOE Vehicle Program;

(D) the balance of activities and funding across the DOE Vehicle Program;

(E) the management, coordination, implementation, and activities of the DOE Vehicle Program;

(F) whether environmental, safety, security, and other appropriate societal issues are

adequately addressed by the DOE Vehicle Technologies Program; and

(G) other relevant topics as decided by the Secretary.

(3) REPORTS.—Not later than 2 years after the date of enactment of this Act, and not less frequently than once every 3 years thereafter, the advisory committee shall submit to the Secretary, the Committee on Science, Space, and Technology of the House of Representatives a report on—

(A) the findings of the advisory committee's assessment under paragraph (1); and

(B) the advisory committee's recommendations for ways to improve the DOE Vehicle Program.

(4) APPLICATION OF FEDERAL ADVISORY COMMITTEE ACT.—Section 14 of the Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the Advisory Committee.

(e) INTERAGENCY AND INTRAAGENCY COORDINATION.—To the maximum extent practicable, the Secretary shall coordinate research, development, and demonstration activities among—

(1) relevant programs within the Department, including—

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

(B) the Office of Science;

(C) the Office of Electricity;

(D) the Office of Fossil Energy;

(E) the Office of Cybersecurity, Energy Security, and Emergency Response;

(F) the Advanced Research Projects Agency—Energy; and

(G) other offices as determined by the Secretary; and

(2) relevant technology research and development programs within other Federal agencies, including—

(A) the Department of Transportation;

(B) National Institute of Standards & Technology;

(C) National Science Foundation; and

(D) other Federal agencies as determined by the Secretary.

(f) INTERGOVERNMENTAL COORDINATION.—The Secretary shall seek opportunities to leverage resources and support initiatives of Federal, State, and local governments in developing and promoting advanced vehicle technologies, manufacturing, and infrastructure.

(g) SECONDARY USE APPLICATIONS OF VEHICLE BATTERIES.—

(1) IN GENERAL.—The Secretary shall carry out a research, development, and demonstration program that—

(A) builds on any work carried out under section 915 of the Energy Policy Act of 2005 (42 U.S.C. 16195);

(B) identifies possible uses of a vehicle battery after the useful life of the battery in a vehicle has been exhausted;

(C) conducts long-term testing to verify performance and degradation predictions and lifetime valuations for secondary uses;

(D) evaluates innovative approaches to recycling materials from plug-in electric drive vehicles and the batteries used in plug-in electric drive vehicles;

(E) assesses the potential for markets for uses described in subparagraph (B) to develop; and

(F) identifies any barriers to the development of those markets;

(G) identifies the potential uses of a vehicle battery—

(i) with the most promise for market development; and

(ii) for which market development would be aided by a demonstration project.

(2) REPORT.—Not later than 18 months after the date of enactment of this Act, the Secretary shall submit to the appropriate committees of Congress an initial report on the findings of the program described in paragraph (1), including recommendations for stationary energy storage and other potential applications for batteries used in plug-in electric drive vehicles.

(3) SECONDARY USE DEMONSTRATION.—

(A) IN GENERAL.—Based on the results of the program described in paragraph (1), the Secretary shall develop guidelines for projects that demonstrate the secondary uses and innovative recycling of vehicle batteries.

(B) PUBLICATION OF GUIDELINES.—Not later than 18 months after the date of enactment of this Act, the Secretary shall—

(i) publish the guidelines described in subparagraph (A); and

(ii) solicit applications for funding for demonstration projects.

(5) PILOT DEMONSTRATION PROGRAM.—Not later than 2 years after the date of enactment of this Act, the Secretary shall select proposals for Federal financial assistance under this subsection, based on an assessment of which proposals are mostly likely to contribute to the development of a secondary market for vehicle batteries.

(h) STUDY TO EXAMINE BATTERY SCIENCE AND TECHNOLOGY PATHWAYS.—

(1) IN GENERAL.—The Secretary shall enter into an agreement with the National Academies of Sciences, Engineering, and Medicine under which the National Academies agree to conduct a study on battery technologies to advance research toward a resilient and low-carbon transportation system and electric grid. Such study shall—

(A) identify promising battery technologies;

(B) recommend research priorities to support the development of sustainable battery value chains, including analyzing human rights, environmental impacts, and recycling and reuse infrastructure;

(C) examine market, policy, and technology barriers to their development; and

(D) recommend strategic research priorities on technology pathways to develop affordable, sustainable, safe, efficient, and long-lasting batteries to meet future transportation and energy storage demands.

(2) REPORT.—The agreement entered into under subsection (a) shall include a requirement that the National Academies, not later than 24 months after the date of enactment of this Act, submit to the House Committee on Science, Space and Technology, and the Senate Committee on Energy and Natural Resources a report on the results of the study conducted pursuant to such subsection.

SEC. 6913. RESEARCH AND DEVELOPMENT PROGRAM FOR ADVANCED VEHICLE MANUFACTURING TECHNOLOGIES.

The Secretary shall carry out a research, development, and demonstration program of advanced vehicle manufacturing technologies and practices, including innovative, efficient, and sustainable processes—

(1) to increase the production rate and decrease the cost of advanced battery and fuel cell manufacturing, including synthesis of precursor materials for electrodes;

(2) to develop technologies enabling flexible manufacturing facilities that can accommodate different battery chemistries and configurations;

(3) to reduce or repurpose waste streams, reduce emissions, and energy intensity of vehicle, engine, advanced battery, and component manufacturing processes;

(4) to recycle and remanufacture used batteries and other vehicle components for reuse in vehicles or other applications;

(5) to develop manufacturing and additive manufacturing processes to fabricate, assemble, and produce cost-effective lightweight materials with enhanced functionality such as advanced aluminum, steel, and other metal alloys, advanced polymers, polymeric composites, and carbon fiber for use in vehicles and related tooling;

(6) to leverage the use of machine learning toward manufacturing and additive manufacturing optimization;

(7) to design and manufacture purpose-built hydrogen fuel cell vehicles, hydrogen fueling infrastructure, and components;

(8) to improve the lifetime and reduce the lifecycle impacts of advanced batteries; and

(9) to reuse valuable components and materials such as permanent magnets and other electric drive components for advanced vehicles.

SEC. 6914. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary for research, development, and demonstration, of alternative fuels, vehicle propulsion systems, vehicle components, and other related technologies in the United States, including activities authorized under this subtitle—

(1) for fiscal year 2021, $396,000,000;

(2) for fiscal year 2022, $415,800,000;

(3) for fiscal year 2023, $436,590,000;

(4) for fiscal year 2024, $458,419,500; and

(5) for fiscal year 2025, $481,340,475.

TITLE VII—ADVANCED RESEARCH PROJECTS AGENCY—ENERGY

SEC. 7001. ARPA–E AMENDMENTS.

(a) ESTABLISHMENT.—Section 5012(b) of the America COMPETES Act (42 U.S.C. 16538(b)) is amended by striking ''development of energy technologies'' and inserting ''development of transformative science and technology solutions to address the energy and environmental missions of the Department''.

(b) GOALS.—Section 5012(c) of the America COMPETES Act (42 U.S.C. 16538(c)) is amended—

(1) by striking paragraph (1)(A) and inserting the following:

''(A) to enhance the economic and energy security of the United States through the development of energy technologies that—

''(i) reduce imports of energy from foreign sources;

''(ii) reduce energy-related emissions, including greenhouse gases;

''(iii) improve the energy efficiency of all economic sectors;

''(iv) provide transformative solutions to improve the management, clean-up, and disposal of radioactive waste and spent nuclear fuel; and

''(v) improve the resilience, reliability, and security of infrastructure to produce, deliver, and store energy; and''; and

(2) in paragraph (2), in the matter preceding subparagraph (A), by striking ''energy technology projects'' and inserting ''advanced technology projects''.

(c) RESPONSIBILITIES.—Section 5012(e)(3)(A) of the America COMPETES Act (42 U.S.C. 16538(e)(3)(A)) is amended by striking ''energy''.

(d) REPORTS AND ROADMAPS.—Section 5012(h) of the America COMPETES Act (42 U.S.C. 16538(h)) is amended to read as follows:

''(h) REPORTS AND ROADMAPS.—

''(1) ANNUAL REPORT.—As part of the annual budget request submitted for each fiscal year, the Director shall provide to the relevant authorizing and appropriations committees of Congress a report that—

''(A) describes projects supported by ARPA–E during the previous fiscal year;

''(B) describes projects supported by ARPA–E during the previous fiscal year that examine topics and technologies closely related to other activities funded by the Department, and includes an analysis of whether in supporting such projects, the Director is in compliance with subsection (i)(1); and

''(C) describes current, proposed, and planned projects to be carried out pursuant to subsection (e)(3)(D).

''(2) STRATEGIC VISION ROADMAP.—Not later than October 1, 2021, and every four years thereafter, the Director shall provide to the relevant authorizing and appropriations committees of Congress a roadmap describing the strategic vision that ARPA–E will use to guide the choices of ARPA–E for future technology investments over the following 4 fiscal years.''.

(e) COORDINATION AND NONDUPLICATION.—Section 5012(i)(1) of the America COMPETES Act (42 U.S.C. 16538(i)(1)) is amended to read as follows:

''(1) IN GENERAL.—To the maximum extent practicable, the Director shall ensure that—

''(A) the activities of ARPA–E are coordinated with, and do not duplicate the efforts of, programs and laboratories within the Department and other relevant research agencies; and

''(B) ARPA–E does not provide funding for a project unless the prospective grantee demonstrates sufficient attempts to secure private financing or indicates that the project is not independently commercially viable.''.

(f) EVALUATION.—Section 5012(l) of the America COMPETES Act (42 U.S.C. 16538(l)) is amended—

(1) by striking paragraph (1) and inserting the following:

''(1) IN GENERAL.—Not later than 3 years after the date of enactment of this paragraph, the Secretary is authorized to enter into a contract with the National Academy of Sciences under which the National Academy shall conduct an evaluation of how well ARPA–E is achieving the goals and mission of ARPA–E.''; and

(2) in paragraph (2)—

(A) in the matter preceding subparagraph (A), by striking ''shall'' and inserting ''may''; and

(B) in subparagraph (A), by striking ''the recommendation of the National Academy of Sciences'' and inserting ''a recommendation''.

(g) AUTHORIZATION OF APPROPRIATIONS.—Paragraph (2) of section 5012(o) of the America COMPETES Act (42 U.S.C. 16538(o)) is amended to read as follows:

''(2) AUTHORIZATION OF APPROPRIATIONS.—Subject to paragraph (4), there are authorized to be appropriated to the Director for deposit in the Fund, without fiscal year limitation—

''(A) $497,000,000 for fiscal year 2021;

''(B) $567,000,000 for fiscal year 2022;

''(C) $651,000,000 for fiscal year 2023;

''(D) $750,000,000 for fiscal year 2024; and

''(E) $875,000,000 for fiscal year 2025.''.

(h) TECHNICAL AMENDMENTS.—Section 5012 of the America COMPETES Act (42 U.S.C. 16538) is amended—

(1) in subsection (g)(3)(A)(iii), by striking ''subpart'' each place it appears and inserting ''subparagraph''; and

(2) in subsection (o)(4)(B), by striking ''(c)(2)(D)'' and inserting ''(c)(2)(C)''.

TITLE VIII—TECHNOLOGY TRANSFER

SEC. 8001. DEFINITIONS.

In this title:

(1) CLEAN ENERGY TECHNOLOGY.—The term ''clean energy technology'' means a technology that significantly reduces energy use, increases energy efficiency, reduces greenhouse gas emissions, reduces emissions of other pollutants, or mitigates other negative environmental consequences.

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

(3) DIRECTOR.—The term ''Director'' means the Director of each National Laboratory and the Director of each Department of Energy single-purpose research facility.

(4) ECONOMICALLY DISTRESSED AREA.—The term ''economically distressed area'' has the meaning described in section 301(a) of the Public Works and Economic Development Act of 1965 (42 U.S.C. 3161(a)).

(5) GRANT.—The term ''grant'' means a grant award, cooperative agreement award, or any other financial assistance arrangement that the Secretary of Energy determines to be appropriate.

(6) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the meaning given such term in the Higher Education Act of 1965, as amended (20 U.S.C. 1001).

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

(8) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

Subtitle A—National Clean Energy Technology Transfer Programs

SEC. 8101. REGIONAL CLEAN ENERGY INNOVATION PROGRAM.

(a) DEFINITIONS.—In this section:

(1) REGIONAL CLEAN ENERGY INNOVATION PARTNERSHIP.—The term ''regional clean energy innovation partnership'' means a group of one or more persons, including a covered consortium, who perform a collection of activities that are coordinated by such covered consortium to carry out the purposes of the program under subsection (c) in a region of the United States.

(2) COVERED CONSORTIUM.—The term ''covered consortium'' means an individual or group of individuals in partnership with a government entity, including a State, local, or tribal government or unit of such government, and at least 2 or more of the following additional entities—

(A) an institution of higher education or higher education consortium;

(B) a workforce training provider, including vocational schools and community colleges;

(C) a private sector entity;

(D) a nonprofit organization;

(E) a community group;

(F) a labor group;

(G) a National Laboratory;

(H) a venture development organization;

(I) an organization focused on clean energy technology innovation or entrepreneurship;

(J) a business accelerator or incubator;

(K) a private sector entity or group of entities, including a trade or industry association;

(L) an economic development organization;

(M) a manufacturing facility or organization;

(N) a clean energy incubator or accelerator; or

(O) any other entity that the Secretary determines to be relevant.

(3) PROGRAM.—The term ''program'' means the Regional Clean Energy Innovation Program authorized in subsection (b).

(4) FRONTLINE COMMUNITY.—The term ''frontline community'' means a community with significant representation of communities of color, low-income communities, or Tribal and indigenous communities, that experiences, or is at risk of experi-

encing higher or more adverse human health or environmental effects.

(b) IN GENERAL.—The Secretary shall establish a Regional Clean Energy Innovation Program designed to accelerate the pace of innovation of clean energy technologies through the formation or support of regional clean energy innovation partnerships that—

(1) are responsive to the energy resources, needs of industry, workforce, policy landscape, and clean energy innovation capabilities of the region of the country in which such partnership is located;

(2) enhance and accelerate clean energy innovation;

(3) are located in diverse geographic regions of the United States, including United States territories; and

(4) improve economic development outcomes in economically distressed areas.

(c) PURPOSES OF THE PROGRAM.—The purposes of the program established under subsection (a) are to—

(1) improve the competitiveness of United States' clean energy technology research, development, demonstration, and commercial application;

(2) to identify and leverage the competitive strengths of and address clean energy challenges

that are particular to diverse geographic regions of the United States to stimulate innovation in clean energy technologies;

(3) support the development of clean energy innovation companies in diverse geographic regions of the United States;

(4) promote the economic development of and enhance the economic resilience of diverse geographic regions of the United States;

(5) support the development of tools and technologies best suited for use in low-income and frontline communities; and

(6) support the development of manufacturing capabilities and supply chains relevant to clean energy technologies in the United States.

(d) REGIONAL CLEAN ENERGY INNOVATION PARTNERSHIPS.—

(1) IN GENERAL.—The Secretary shall competitively award grants to covered consortia to establish or support regional clean energy innovation partnerships that achieve the purposes of the program in subsection (c).

(2) PERMISSIBLE ACTIVITIES.—Grants awarded under this subsection shall be used for activities determined appropriate by the Secretary to achieve the

purposes of the program in subsection (c), including—

(A) facilitating the commercial application of clean energy products, processes, and services, including through research, development, demonstration, technology transfer, or support of clean energy companies;

(B) planning among participants of a regional clean energy innovation partnership to improve the strategic coordination of the partnership;

(C) improving stakeholder involvement in the development of goals and activities of a regional clean energy innovation partnership;

(D) assessing different incentive mechanisms for clean energy development and commercial application in the region;

(E) hosting events and conferences; and

(F) establishing and updating roadmaps to measure progress on relevant goals, such as those relevant to metrics developed under subsection (g).

(3) APPLICATIONS.—Each application submitted to the Secretary under paragraph (1) may include—

(A) a list of members and roles of members of the covered consortia, as well as any other stakeholders supporting the activities of the regional clean energy innovation partnership;

(B) a description of the proposed outcomes of the regional clean energy innovation partnership;

(C) an assessment of the relevant clean energy innovation assets needed in a region to achieve proposed outcomes, such as education and training programs, research facilities, infrastructure or site development, access to capital, manufacturing capabilities, or other assets;

(D) a description of proposed activities that the regional clean energy innovation partnership plans to undertake and how the proposed activities will achieve the purposes described in subsection (c) and the proposed outcomes in subparagraph (B);

(E) a description of the geographical region that will engage in the partnership;

(F) a plan for attracting additional funds and identification of funding sources from non-Federal sources to deliver the proposed out-

comes of the regional clean energy innovation partnership; and

(G) a plan for sustaining activities of the regional clean energy innovation partnership after funds received under this program have been expended.

(4) CONSIDERATIONS.—In selecting covered consortia for funding under the program, the Secretary shall—

(A) give special consideration to applications from entities located in an economically distressed area; and

(B) ensure that there is geographic diversity among the covered consortia selected to receive funding.

(5) AWARD AMOUNT.—Grants given out under this Program shall be in an amount not greater than $10,000,000, with the total grant award in any year less than that in the previous year.

(6) COST SHARE.—For grants that are disbursed over the course of three or more years, the Secretary shall require, as a condition of receipt of funds under this section, that a covered consortium provide not less than 50 percent of the funding for

the activities of the regional clean energy partnership under this section for years 3, 4, and 5.

(7) DURATION.—Each grant under paragraph (1) shall be for a period of not longer than 5 years.

(8) RENEWAL.—A grant award made to a regional clean energy innovation partnership under this section may be renewed for a period of not more than 5 years, subject to a rigorous merit review based on the progress of a regional clean energy innovation partnership towards achieving the purposes of the program in subsection (c) and the metrics developed under subsection (g).

(9) ADMINISTRATIVE COSTS.—The Secretary may allow a covered consortium that receives funds under this section to allocate a portion of the funding received to be used for administrative or indirect costs.

(10) FUNDING.—The Secretary may accept funds from other Federal agencies to support funding and activities under this section.

(e) PLANNING FUNDS.—The Secretary may competitively award grants in an amount no greater than $2,000,000 for a period not longer than 2 years to an entity consisting of a government entity, including a State, local, or tribal government or unit of such government or

any entity listed under subsection (a)(2) to plan a regional clean energy innovation partnership or establish a covered consortium for the purpose of applying for funds under subsection (b).

(f) INFORMATION SHARING.—As part of the program, the Secretary shall support the gathering, analysis, and dissemination of information on best practices for developing and operating successful regional clean energy innovation partnerships.

(g) METRICS.—In evaluating a grant renewals under section (d)(8), the Secretary shall work with program evaluation experts to develop and make publicly available metrics to assess the progress of a regional clean energy innovation partnership towards achieving the purposes of the program in section (c). Such metrics may include—

(1) the number and quality of—

(A) new clean energy companies created in the region as a result of activities carried out under the regional clean energy innovation partnership;

(B) new or expanded workforce development or training programs; and

(C) support services provided to clean energy technology developers in the region.

(2) changes in clean energy employment in the region as a result of activities carried out under the regional clean energy innovation partnership ; and

(3) the amount of capital investment in clean energy companies in the region as a result of activities carried out under the regional clean energy innovation partnership grant.

(h) COORDINATION.—In carrying out the program, the Secretary may coordinate with relevant programs at other Federal agencies, including—

(1) the Office of Innovation and Entrepreneurship under the Economic Development Administration, including the Regional Innovation Program under section 27 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3722);

(2) the Hollings Manufacturing Extension Partnership Program under section 25(a) of the National Institute of Standards and Technology Act (15 U.S.C. 278k);

(3) the Manufacturing USA Program under section 34(a) of the National Institute of Standards and Technology Act (15 U.S.C. 278s);

(4) the Defense Manufacturing Communities Support Program under section 846 of the John S.

McCain National Defense Authorization Act for Fiscal Year 2019 (10 U.S.C. 2501 note); and

(5) the Office of Economic Adjustment at the Department of Defense.

(i) EVALUATION BY COMPTROLLER GENERAL.—Not later than 3 years after the date of the enactment of this Act, and every 3 years thereafter, the Comptroller General 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 an evaluation on the operation of the program during the most recent 3-year period, including—

(1) an assessment of the progress made towards achieving the purposes specified in subsection (c) based on the metrics developed under subsection (g);

(2) the short-term and long-term metrics used to determine the success of the program under subsection (g), and any changes recommended to the metrics used;

(3) the regional clean energy innovation partnerships that have received grants under subsection (d); and

(4) any recommendations on how the program may be improved.

(j) NATIONAL LABORATORIES.—In supporting technology transfer activities at the National Laboratories, the Secretary shall encourage partnerships with entities that are located in the same region or State as a National Laboratory.

(k) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out this section $50,000,000 for each of fiscal years 2021 through 2025.

SEC. 8102. NATIONAL CLEAN ENERGY INCUBATOR PROGRAM.

(a) CLEAN ENERGY INCUBATOR DEFINED.—In this section, the term ''clean energy incubator''—

(1) means any entity that is designed to accelerate the commercial application of clean energy technologies by providing—

(A) physical workspace, labs, and prototyping facilities to support clean energy startups or established clean energy companies; or

(B) companies developing such technologies with support, resources, and services, including—

(i) access to business education and counseling;

(ii) mentorship opportunities; and

(iii) other services rendered for the purpose of aiding the development and commercial application of a clean energy technology; and

(2) may include a program within or established by a National Laboratory, an institution of higher education or a State, local, or tribal government.

(b) PROGRAM ESTABLISHMENT.—Not later than 180 days after the enactment of this Act, the Secretary, acting through the Chief Commercialization Officer established in section 1001(a) of the Energy Policy Act of 2005 (42 U.S.C. 16391(a)), shall establish a Clean Energy Incubator Program (herein referred to as the ''program'') to competitively award grants to clean energy incubators.

(c) CLEAN ENERGY INCUBATOR SELECTION.—In awarding grants to clean energy incubators under subsection (b), the Secretary shall prioritize funding clean energy incubators that—

(1) partner with entities that carry out activities relevant to the activities of such incubator and that operate at the local, State, and regional levels;

(2) support the commercial application activities of startup companies focused on physical hard-

ware, computational, or integrated hardware and software technologies;

(3) are located in geographically diverse regions of the United States;

(4) are located in, or partner with entities located in, economically-distressed areas;

(5) support the development of entities focused on expanding clean energy tools and technologies to low-income and frontline communities;

(6) support the commercial application of technologies being developed by clean energy entrepreneurs from underrepresented backgrounds; and

(7) have a plan for sustaining activities of the incubator after grant funds received under this program have been expended.

(d) AWARD LIMITS.—The Secretary shall not award more than $4,000,000 to one or more incubators in one given State, per fiscal year.

(e) DURATION.—Each grant under subsection (b) shall be for a period of no longer than 5 years, subject to the availability of appropriations.

(f) USE OF FUNDS.—An entity receiving a grant under this section may use grant amounts for operating expenses.

(g) RENEWAL.—An award made to a clean energy incubator under this section may be renewed for a period of not more than 3 years, subject to merit review.

(h) EVALUATION.—In accordance with section 8307(b) of this Act, the Secretary shall submit 3 years after the enactment of this Act and every 3 years thereafter to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate an evaluation of the program established under this section that includes analyses of the performance of the clean energy incubators.

(i) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out this section $15,000,000 for each of fiscal years 2021 through 2025.

SEC. 8103. CLEAN ENERGY TECHNOLOGY UNIVERSITY PRIZE COMPETITION.

(a) DEFINITIONS.—In this section:

(1) ELIGIBLE ENTITY.—The term ''eligible entity'' means a non-profit entity, an institution of higher education, or an entity working with one or more institutes of higher education.

(2) MINORITY-SERVING INSTITUTION.—The term ''minority-serving institution'' means an insti-

tution described in section 371(a) of the Higher Education Act of 1965 (20 U.S.C. 1067q(a)).

(b) IN GENERAL.—The Secretary, acting through the Chief Commercialization Officer established in section 1001(a) of the Energy Policy Act of 2005 (42 U.S.C. 16391(a)), shall establish a program, known as the ''Clean Energy Technology University Prize'', to award funding for eligible entities to carry out regional and one national clean energy technology prize competitions, under section 24 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3719). In carrying out such prize competitions, students shall compete to develop a business model for furthering the commercial application of an innovative clean energy technology. The purpose of this program is to encourage student interest in clean energy technology development and to help students solve challenges in clean energy technology commercial application, with participation from diverse geographical regions of the United States.

(c) TRAINING FUNDING.—In carrying out this program, the Secretary may provide funding to train participating students in skills needed for the successful commercial application of clean energy technologies, including through virtual training sessions.

(d) PRIORITIZATION.—In awarding grants under this section, the Secretary shall prioritize awarding grants to eligible entities that work with students at minority-serving institutions.

(e) COORDINATION.—In carrying out this program, the Secretary shall coordinate and partner with existing clean energy technology prize competitions. In doing so, the Secretary may develop and disseminate best practices for administering prize competitions under this section.

(f) REPORT.—In accordance with section 8307(a) of this Act, the Secretary shall report annually on the progress and implementation of the program established under subsection (b).

(g) EVALUATION.—In accordance with section 8307(b) of this Act, the Secretary shall submit 3 years after the enactment of this Act and every 3 years thereafter to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate an evaluation on the long-term outcomes of the program established under this section and the progress towards achieving the purposes of the program in subsection (b).

(h) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry

out the activities authorized in this section $1,000,000 for each of fiscal years 2021 through 2025.

SEC. 8104. ENERGY I-CORPS.

(a) IN GENERAL.—The Secretary of Energy (hereinafter in this section referred to as the ''Secretary''), acting through the Chief Commercialization Officer established in section 1001(a) of the Energy Policy Act of 2005 (42 U.S.C. 16391(a)), shall carry out a program to support commercial application education, training, professional development, and mentorship called the ''Energy Innovation Corps Program'' (hereinafter in this section referred to as ''Energy I-Corps'').

(b) PURPOSE.—The purposes of Energy I-Corps shall be to help participants described in subsection (c) develop skills and to accelerate the commercial application of clean energy technologies and other technologies related to the mission of the Department of Energy.

(c) PARTICIPANTS.—The Secretary shall carry out this program for participants consisting of—

(1) employees at the National Laboratories; and

(2) researchers, students, and clean energy entrepreneurs.

(d) ACTIVITIES.—In carrying out Energy I-Corps, the Secretary shall support—

(1) commercial application education, training, and mentoring activities, including workshops, seminars, and short courses;

(2) engagement with private sector entities to identify future research and development activities; and

(3) any other activities that the Secretary determines to be relevant.

(e) STATE AND LOCAL PARTNERSHIPS.—In carrying out Energy I-Corps, the Secretary may engage in partnerships with National Laboratories, State and local governments, economic development organizations, and nonprofit organizations to broaden access to Energy I-Corps and support relevant activities under this subsection.

(f) FEDERAL COORDINATION.—In carrying out Energy I-Corps, the Secretary may coordinate with any other Federal science agency program that carries out a similar program to support entrepreneurial and commercial application education, training, professional development, and mentorship in order to share best practices.

(g) EVALUATION.—In accordance with section 8307(b) of this Act, the Secretary shall submit 3 years after the enactment of this Act and every 3 years thereafter to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on

Energy and Natural Resources of the Senate an evaluation on the long-term effectiveness of the Energy I-Corps program and the progress towards achieving the purposes of the program in subsection (a).

(h) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Chief Commercialization Officer established in section 1001(a) of the Energy Policy Act of 2005 (42 U.S.C. 16391(a)) to carry out the activities authorized in subsection (a)—

(1) for participants under subsection (c)(1) $3,000,000 for each of fiscal years 2021 through 2025; and

(2) for participants under subsection (c)(2) $2,000,000 for each of fiscal years 2021 through 2025.

SEC. 8105. CLEAN ENERGY TECHNOLOGY TRANSFER COORDINATION.

(a) IN GENERAL.—The Secretary, acting through the Chief Commercialization Officer established in section 1001(a) of the Energy Policy Act of 2005 (42 U.S.C. 16391(a)), shall support the coordination of relevant technology transfer programs, including those authorized in sections 8101, 8102, 8103, 8104, 8202, and 8206 of this Act, that advance the commercial application of clean en-

ergy technologies nationally and across all energy sectors. In particular, the Secretary may support activities to—

(1) facilitate the sharing of information on best practices for successful operation of clean energy technology transfer programs;

(2) coordinate resources and improve cooperation among clean energy technology transfer programs;

(3) facilitate connections between entrepreneurs and start-up companies and the variety of programs related to clean energy technology transfer under the Department; and

(4) facilitate the development of metrics to measure the impact of clean energy technology transfer programs on—

(A) advancing the development, demonstration, and commercial application of clean energy technologies;

(B) increasing the competitiveness of United States in the clean energy sector, including in manufacturing; and

(C) commercial application of clean energy technologies being developed by entrepreneurs from under-represented backgrounds.

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out the activities in this section $3,000,000 for each of fiscal years 2021 through 2025.

Subtitle B—Supporting Technology Development At the National Laboratories

SEC. 8201. LAB PARTNERING SERVICE PILOT PROGRAM.

(a) PILOT PROGRAM.—

(1) IN GENERAL.—The Secretary, acting through the Chief Commercialization Officer established in section 1001(a) of the Energy Policy Act of 2005 (42 U.S.C. 16391(a)), shall establish a Lab Partnering Service Pilot Program (hereinafter in this section referred to as the ''pilot program'').

(2) PURPOSES.—The purposes of the pilot program are to provide services that encourage and support partnerships between the National Laboratories and public and private sector entities, and to improve communication of research, development, demonstration, and commercial application projects and opportunities at the National Laboratories to potential partners through the development of a website and the provision of services, in collaboration with relevant external entities.

(3) ACTIVITIES.—In carrying out this pilot program, the Secretary shall—

(A) conduct outreach to and engage with relevant public and private entities;

(B) identify and disseminate best practices for strengthening connections between the National Laboratories and public and private sector entities; and

(C) develop a website to disseminate information on—

(i) different partnering mechanisms for working with the National Laboratories;

(ii) National Laboratory experts and research areas; and

(iii) National Laboratory facilities and user facilities.

(b) METRICS.—The Secretary shall support the development of metrics, including conversion metrics, to determine the effectiveness of the pilot program in achieving the purposes in subsection (a) and the number and types of partnerships established between public and private sector entities and the National Laboratories compared to baseline data.

(c) COORDINATION.—In carrying out the activities authorized in this section, the Secretary shall coordinate with the Directors and dedicated technology transfer staff at the National Laboratories, in particular for match-making services for individual projects, which should be led by the National Laboratories.

(d) FUNDING EMPLOYEE PARTNERING ACTIVITIES.—The Secretary shall delegate to the Directors the authority to compensate National Laboratory employees providing services under this section.

(e) DURATION.—Subject to the availability of appropriations, the pilot program established in this section shall operate for not less than 3 years and may be built off an existing program.

(f) EVALUATION.—Not later than 6 months after the completion of this pilot program, the Secretary shall support the evaluation of the success of the pilot program in achieving the purposes in subsection (a) and shall submit the evaluation to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate. The assessment shall include analyses of the performance of the pilot program based on the metrics developed under subsection (b).

(g) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary $2,000,000 for each of fiscal years 2021 through 2023 to carry out subsections (a), (b), (c), (e), and (f) and $1,700,000 for each of fiscal years 2021 through 2023 for national laboratory employees to provide services under subsection (d).

SEC. 8202. LAB-EMBEDDED ENTREPRENEURSHIP PROGRAM.

(a) IN GENERAL.—The Secretary shall competitively award grants to National Laboratories for the purpose of establishing or supporting Lab-Embedded Entrepreneurship Programs.

(b) PURPOSES.—The purposes of such programs are to provide entrepreneurial fellows with access to National Laboratory research facilities, National Laboratory expertise, and mentorship to perform research and development and gain expertise that may be required or beneficial for the commercial application of research ideas.

(c) ENTREPRENEURIAL FELLOWS.—An entrepreneurial fellow participating in a program described in subsection (a) shall be provided with—

(1) opportunities for entrepreneurial training, professional development, and exposure to leaders from academia, industry, government, and finance

who may serve as advisors to or partners of the fellow;

(2) financial and technical support for research, development, and commercial application activities;

(3) fellowship awards to cover costs of living, health insurance, and travel stipends for the duration of the fellowship; and

(4) any other resources determined appropriate by the Secretary.

(d) PROGRAM ACTIVITIES.—Each eligible entity that receives funding under this section shall support entrepreneurial fellows by providing—

(1) access to facilities and expertise within the National Laboratory;

(2) engagement with external stakeholders; and

(3) market and customer development opportunities.

(e) ADMINISTRATION.—Eligible entities that receive grants under this section shall prioritize the support and success of the entrepreneurial fellow with regards to professional development and development of a relevant technology.

(f) PARTNERSHIPS.—In carrying out a Lab-Embedded Entrepreneurship Program, a National Laboratory may partner with an external entity, including—

(1) a nonprofit organization;

(2) an institution of higher education; or

(3) a federally-owned corporation.

(g) METRICS.—The Secretary shall support the development of short-term and long-term metrics to assess the effectiveness of programs receiving a grant under subsection (a) in achieving the purposes of the program in subsection (b).

(h) EVALUATION.—In accordance with section 8307(b) of this Act, not later than 3 years after the date of the enactment of this Act, and every 3 years thereafter, 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 an evaluation of the effectiveness of the programs under subsection (a) based on the metrics developed pursuant to subsection (g).

(i) COORDINATION.—The Secretary shall oversee the planning and coordination of grants under subsection (a) and shall identify and disseminate best practices for achieving the purposes of subsection (b) to eligible entities that receive grants under this section.

(j) INTERAGENCY COLLABORATION.—The Secretary shall collaborate with other executive branch agencies, including the Department of Defense and other agencies

with federal laboratories, regarding opportunities to partner with programs receiving a grant under subsection (a).

(i) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out the activities authorized in this section $25,000,000 for each of fiscal years 2021 through 2025.

SEC. 8203. SMALL BUSINESS VOUCHER PROGRAM.

Section 1003 of the Energy Policy Act of 2005 (42 U.S.C. 16393) is amended—

(1) in subsection (a)—

(A) in the matter preceding paragraph (1), by striking '', and may require the Director of a single-purpose research facility,'' and inserting ''(as defined in section 2) and the Director of each single-purpose research facility'';

(B) in paragraph (1)—

(i) by striking ''increase'' and inserting ''encourage''; and

(ii) by striking ''collaborative research,'' and inserting ''research, development, demonstration, and commercial application activities, including product development,'';

(C) in paragraph (2), by striking ''procurement and collaborative research'' and inserting

''procurement and the activities described in paragraph (1)'';

(D) in paragraph (3)—

(i) by inserting ''facilities,'' before ''training''; and

(ii) by striking ''procurement and collaborative research activities'' and inserting ''procurement and the activities described in paragraph (1)''; and

(E) in paragraph (5), by striking ''for the program under subsection (b)'' and inserting ''and metrics for the programs under subsections (b) and (c)'';

(2) by redesignating subsections (c) and (d) as subsections (d) and (e), respectively;

(3) by inserting after subsection (b) the following:

''(c) SMALL BUSINESS VOUCHER PROGRAM.—

''(1) DEFINITIONS.—In this subsection:

''(A) DIRECTOR.—The term 'Director' means—

''(i) the Director of each National Laboratory; and

''(ii) the Director of each single-purpose research facility.

''(B) NATIONAL LABORATORY.—The term 'National Laboratory' has the meaning given the term in section 2.

''(C) PROGRAM.—The term 'program' means the program established under paragraph (2).

''(D) SMALL BUSINESS CONCERN.—The term 'small business concern' has the meaning given such term in section 3 of the Small Business Act (15 U.S.C. 632).

''(2) ESTABLISHMENT.—The Secretary, acting through the Chief Commercialization Officer appointed under section 1001(a), and in consultation with the Directors, shall establish a program to provide small business concerns with vouchers under paragraph (3)—

''(A) to achieve the goal described in subsection (a)(1); and

''(B) to improve the products, services, and capabilities of small business concerns in the mission space of the Department.

''(3) VOUCHERS.—Under the program, the Directors are authorized to provide to small business concerns vouchers to be used at National Laboratories and single-purpose research facilities for—

''(A) research, development, demonstration, technology transfer, or commercial application activities; or

''(B) any other activities that the applicable Director determines appropriate.

''(4) EXPEDITED APPROVAL.—The Secretary, working with the Directors, shall establish a streamlined approval process for financial assistance agreements signed between—

''(A) small business concerns selected to receive a voucher under the program; and

''(B) the National Laboratories and single-purpose research facilities.

''(5) COST-SHARING REQUIREMENT.—In carrying out the program, the Secretary shall require cost-sharing in accordance with section 988; and

''(6) REPORT.—In accordance with section 8307(a) of the Clean Economy Jobs and Innovation Act, the Secretary shall report annually on the progress and implementation of the small business voucher program established under this section, including the number and locations of small businesses that received grants under this program.''; and

(4) in subsection (e) (as so redesignated), by striking ''for activities under this section'' and in-

serting ''for activities under subsection (b)'' and inserting at the end ''and for activities under subsection (c) $25,000,000 for each of fiscal years 2021 through 2025''.

SEC. 8204. ENTREPRENEURIAL LEAVE PROGRAM.

(a) IN GENERAL.—The Secretary shall delegate to Directors the authority to carry out an entrepreneurial leave program (referred to in this section as the ''program'') to allow National Laboratory employees to take a full leave of absence from their position, with the option to return to that or a comparable position up to 3 years later, or a partial leave of absence, to advance the commercial application of energy and related technologies relevant to the mission of the Department.

(b) TERMINATION AUTHORITY.—Directors shall retain the authority to terminate National Laboratory employees that participate in the program if such employees are found to violate terms prescribed by the National Laboratory at which such employee is employed.

(c) LICENSING.—To reduce barriers to participation in the program, the Secretary shall delegate to the Directors the requirement to establish streamlined mechanisms for facilitating the licensing of technology that is the focus of National Laboratory employees who participate in the program.

(d) REPORT.—In accordance with section 8307(a) of this Act, the Secretary shall report annually on the utilization of this authority at national laboratories, including the number of employees who participate in this program at each national laboratory and the number of employees who take a permanent leave from their positions at national laboratories as a result of participating in this program.

(e) FEDERAL ETHICS.—Nothing in this section shall affect existing federal ethics rules applicable to federal personnel.

SEC. 8205. NATIONAL LABORATORY EMPLOYEE OUTSIDE EMPLOYMENT AUTHORITY.

(a) IN GENERAL.—The Secretary shall delegate to Directors of National Laboratories the authority to allow their employees—

(1) to engage in outside employment, including start-up companies based on licensing technologies developed at National Laboratories and consulting in their areas of expertise, and receive compensation from such entities; and

(2) to engage in outside activities related to their areas of expertise at the National Laboratory and may allow employees, in their employment capacity at such outside employment, to access the

National Laboratories under the same contracting mechanisms as non-laboratory employees and entities, in accordance with appropriate conflict of interest protocols.

(b) REQUIREMENTS.—If a Director elects to use the authority granted by subsection (a) of this section, the Director, or their designee, shall—

(1) require employees to disclose to and obtain approval from the Director or their designee prior to engaging in any outside employment;

(2) develop and require appropriate conflict of interest protocols for employees that engage in outside employment; and

(3) maintain the authority to terminate employees engaging in outside employment if they are found to violate terms, including conflict of interest protocols, mandated by the Director.

(c) ADDITIONAL RESTRICTIONS.—Employees engaging in outside employment may not—

(1) sacrifice, hamper, or impede their duties at the National Laboratory;

(2) engage in activities related to outside employment using National Laboratory government equipment, property, or resources, unless such activities are performed under National Laboratory

contracting mechanisms, such as Cooperative Research and Development Agreement or Strategic Partnership Projects, whereby all conflicts of interest requirements apply; or

(3) use their position at a National Laboratory to provide an unfair competitive advantage to an outside employer or start-up activity.

(d) FEDERAL ETHICS.—Nothing in this section shall affect existing federal ethics rules applicable to federal personnel.

SEC. 8206. TECHNOLOGY COMMERCIALIZATION FUND.

Section 1001(e) of the Energy Policy Act of 2005 (42 U.S.C. 16391(e)) is amended to read as follows:

''(e) TECHNOLOGY COMMERCIALIZATION FUND.—

''(1) ESTABLISHMENT.—The Secretary, acting through the Chief Commercialization Officer established in section 1001(a) of the Energy Policy Act of 2005 (42 U.S.C. 16391(a)), shall establish a Technology Commercialization Fund (hereafter referred to as the 'Fund'), using nine-tenths of one percent of the amount of appropriations made available to the Department for applied energy research, development, demonstration, and commercial application for each fiscal year, to be used to provide, in accordance with the cost-sharing requirements under

section 988, funds to national laboratories to promote promising energy technologies for commercial purposes with private partners.

''(2) APPLICATIONS.—

''(A) CONSIDERATIONS.—The Secretary shall develop criteria for evaluating applications for funding under this section, which may include—

''(i) the potential that a proposed technology will result in a commercially successful product within a reasonable timeframe; and

''(ii) the relative maturity of a proposed technology for commercial application.

''(B) SELECTIONS.—In awarding funds under this section, the Secretary may give special consideration to applications that involve at least one applicant that has participated in an entrepreneurial or commercialization training program, such as Energy Innovation Corps.

''(3) ANNUAL REPORT.—The Secretary shall include in the annual report required under subsection (h)(2)—

"(A) description of the projects carried out with awards from the Fund for that fiscal year;

"(B) each project's cost-share for that fiscal year;

"(C) each project's partners for that fiscal year.

"(4) EVALUATION.—In accordance with section 8307(b) of the Clean Economy Jobs and Innovation Act, the Secretary shall submit 3 years after the enactment of that Act and every 3 years thereafter to the Committee on Science, Space, and Technology Committee of the House of Representatives and the Committee on Energy and Natural Resources of the Senate an evaluation on the long-term commercial success of projects that received awards from the Fund.

"(5) TECHNOLOGY COMMERCIALIZATION FUND REPORT.—

"(A) IN GENERAL.—Not later than 1 year after the date of enactment of the Energizing Technology Transfer Act, the Secretary shall submit to the Committee on Science, Space, and Technology and Committee on Appropriations of the House of Representatives and the Committee on Energy and Natural Resources

and Committee on Appropriations of the Senate a report on the current and recommended implementation of the Fund.

''(B) CONTENTS.—The report under subparagraph (A) shall include—

''(i) a summary, with supporting data, of how much Department program offices contribute to and use the Fund each year, including a list of current funding restrictions;

''(ii) recommendations on how to improve implementation and administration of the Fund; and

''(iii) an analysis on how to spend funds optimally on technology areas that have the greatest need and opportunity for commercial application, rather than spending funds at the programmatic level or under current funding restrictions.''.

SEC. 8207. SIGNATURE AUTHORITY.

(a) IN GENERAL.—Subject to subsections (b) and (c), the Secretary shall delegate to Directors of the National Laboratories signature authority with respect to any agreement described in subsection (b) the total cost of which, including the National Laboratory contributions

and project recipient cost share, is less than $1,000,000, if such an agreement falls within the scope of—

(1) the strategic plan for the National Laboratory or a master scope of work that has been approved by the Department; or

(2) the most recent budget approved by Congress for Department activities to be carried out by the National Laboratory.

(b) AGREEMENTS.—Subsection (a) applies to—

(1) a cooperative research and development agreement;

(2) a strategic partnership project;

(3) prize competitions;

(4) an agreement for commercializing technology; or

(5) any other agreement determined to be appropriate by the Secretary, in collaboration with the Directors.

(c) ADMINISTRATION.—

(1) ACCOUNTABILITY.—The Director of the affected National Laboratory and the affected contractor shall carry out an agreement under this section in accordance with applicable policies of the Department, including by ensuring that the agreement does not compromise any national security, eco-

nomic, or environmental interest of the United States.

(2) CERTIFICATION.—The Director of the affected National Laboratory and the affected contractor shall certify that each activity carried out under a project for which an agreement is entered into under this section does not present, or minimizes, any apparent conflict of interest, and avoids or neutralizes any actual conflict of interest, as a result of the agreement under this section.

(3) AVAILABILITY OF RECORDS.—Not later than 30 days after the date on which a Director enters an agreement under this section, such Director shall submit to the Secretary for monitoring and review all records of the National Laboratory relating to the agreement.

(d) APPROVAL.—Upon granting the signature authority under subsection (a), the Secretary may not require any additional reviews or approvals of draft agreements, statements of work, or other documents for agreements that meet the criteria under subsection (a).

(e) EXCEPTION.—This section does not apply to any agreement with a foreign-controlled entity or entity under the majority control of any foreign entity.

(f) REPORT.—In accordance with section 8307(a) of this Act, the Secretary shall submit annually information

on the number and types of agreements signed using the authorities granted under this section.

(g) EVALUATION.—Not later than 3 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Science, Space, and Technology Committee of the House of Representatives and the Committee on Energy and Natural Resources of the Senate an evaluation of the efficacy of reducing administrative burden for agreements signed using the authorities granted under this section.

(h) CONFORMING AMENDMENT.—Section 12 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a) is amended—

(1) in subsection (a)—

(A) by redesignating paragraphs (1) and (2) as subparagraphs (A) and (B), respectively, and indenting the subparagraphs appropriately;

(B) by striking ''Each Federal agency'' and inserting the following:

''(1) IN GENERAL.—Except as provided in paragraph (2), each Federal agency''; and

(C) by adding at the end the following:

''(2) EXCEPTION.—Notwithstanding paragraph (1), in accordance with section 8207 of the Clean Economy Jobs and Innovation Act, approval by the

Secretary of Energy shall not be required for any agreement proposed to be entered into by a National Laboratory of the Department of Energy, the total cost of which, including the National Laboratory contributions and project recipient cost share, is less than $1,000,000.''; and

(2) in subsection (b), by striking ''subsection (a)(1)'' each place it appears and inserting ''subsection (a)(1)(A)''.

Subtitle C—Department of Energy Modernization

SEC. 8301. TECHNOLOGY TRANSFER PROGRAM.

(a) CHIEF COMMERCIALIZATION OFFICER.—Section 1001 of the Energy Policy Act of 2005 (42 U.S.C. 16391) is amended—

(1) by amending subsection (a) to read as follows:

''(a) CHIEF COMMERCIALIZATION OFFICER.—The Secretary shall appoint a Chief Commercialization Officer to be the principal advisor to the Secretary on all matters relating to technology transfer and commercialization, and who shall report directly to, and be appointed by, the Secretary.''; and

(2) in subsections (b) and (c), by striking ''Coordinator'' each place it appears and inserting ''Chief Commercialization Officer''.

(b) OFFICE OF TECHNOLOGY TRANSITIONS.—Title X of the Energy Policy Act of 2005 (42 U.S.C. 16391 et. seq.) is amended by adding at the end the following:

''SEC. 1012. TECHNOLOGY TRANSFER PROGRAM.

''(a) OFFICE OF TECHNOLOGY TRANSITIONS.—There is established within the Department an Office of Technology Transitions (referred to in this section as the 'Office'), which shall be headed by the Chief Commercialization Officer appointed under section 1001(a).

''(b) MISSION.—The mission of the Office shall be—

''(1) to expand the commercial impact of the research investments of the Department; and

''(2) to advance the commercial application of technologies that reduce energy use, reduce greenhouse gas emissions and other pollutants, improve energy efficiency, mitigate other negative environmental consequences, or support other missions of the Department.

''(c) GOALS.—

''(1) IN GENERAL.—In carrying out the mission and activities of the Office, the Chief Commercialization Officer shall, with respect to commercial appli-

cation activities, meet all of the goals described in paragraph (2).

''(2) GOALS DESCRIBED.—The goals referred to in paragraph (1) are the following:

''(A) Reduction of greenhouse gas emissions or other pollutants.

''(B) Improvement of energy efficiency.

''(C) Improvement of economic competitiveness.

''(D) Enhancement of domestic energy security and national security.

''(E) Enhancement of the domestic workforce relevant to energy and other sectors relevant to the mission of the Department.

''(d) HIRING AND MANAGEMENT.—To carry out the activities authorized in this section, the Under Secretary for Science may appoint personnel using the authorities in section 8306 of the Clean Economy Jobs and Innovation Act.

''(e) COLLABORATION.—In carrying out the mission and activities of the Office of Technology Transitions, the Chief Commercialization Officer shall coordinate with the senior leadership of the Department, other relevant offices of the Department, the Directors, the National Laboratories, the Technology Transfer Working Group estab-

lished under section 1001(d), the Technology Transfer Policy Board, and other stakeholders, including private industry.

''(f) REPORT.—In accordance with section 8307(a) of the Clean Economy Jobs and Innovation Act, the Secretary shall report annually on the activities carried out by the Office of Technology Transitions pertaining to the mission of the program in subsection (b) and the goals in subsection (c).

''(g) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out the activities authorized in this section $20,000,000 for each of fiscal years 2021 through 2025.''.

SEC. 8302. MANAGEMENT OF DEMONSTRATION PROJECTS.

(a) MANAGEMENT OF DEPARTMENT OF ENERGY DEMONSTRATION PROJECTS.—The Secretary shall establish a program to conduct project management and oversight of demonstration projects that receive more than $50,000,000 in funding from the Department, in coordination with relevant staff from Department program offices. The purposes of this program are to—

(1) conduct evaluation of demonstration project proposals prior to selection of a project for funding;

(2) conduct independent oversight of the execution of a demonstration project once funding has been awarded for such project; and

(3) ensure a balanced portfolio of investments in clean energy technology demonstration projects.

(b) DEMONSTRATION PROJECT MANAGEMENT EMPLOYEES.—

(1) AUTHORITY.—In carrying out the program under subsection (a), the Under Secretary for Science shall appoint at least 2 full time employees to achieve the purposes of the program outlined in subsection (a) in coordination with relevant staff at Department program offices.

(2) HIRING AUTHORITY.—To carry out the program authorized in this section, the Under Secretary for Science may hire personnel using the authorities in section 8306 of this Act.

(c) DUTIES.—In carrying out the program in subsection (a), employees under this section shall work with relevant staff from Department program offices to—

(1) evaluate demonstration project proposals, including the scope, technical specifications, maturity of design, funding profile, estimated costs, proposed schedule, proposed technical and financial

milestones, and potential for commercial success based on economic and policy projections;

(2) develop independent cost estimates of demonstration project proposals, when appropriate;

(3) recommend to the director of a program office whether to fund a demonstration project proposal;

(4) oversee the execution of the demonstration projects that receive funding from the Department under this section and conduct reviews of ongoing projects, which may include reconciling estimated costs as compared to actual costs and evaluating progress of the project based on the proposed schedule and technical and financial milestones, and provide such reviews to the Secretary; and

(5) assess lessons learned and implement improvements to evaluate and oversee demonstration projects carried out under this section.

(d) PROJECT TERMINATION.—Should an ongoing demonstration project receive an unfavorable review under subsection (c)(4), the director of a Department program office or their designee may cease funding the demonstration project and reallocate the remaining funds to new or existing demonstration projects carried out by that program office.

(e) COORDINATION.—In establishing and carrying out the program, the Secretary shall coordinate with project management and acquisition management entities within the Department, including the Office of Project Management, and relevant professional organizations in project management, construction, cost estimation, and other relevant fields.

(f) REPORTING.—In accordance with section 8307(a), the Secretary shall report annually on the utilization of the authority granted under this section, including a summary of—

(1) any demonstration projects currently being carried out under this section; and

(2) a summary of the reviews under subsection (c)(4) of any ongoing demonstration projects carried out under this section.

(g) EVALUATION BY COMPTROLLER GENERAL.—Not later than 3 years after the date of the enactment of this Act the Comptroller General 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 an evaluation on the operation of the program established under this section, including—

(1) the processes and procedures used to evaluate demonstration project proposals and oversee demonstration projects that receive funding under this section;

(2) any recommended changes to the program, including the structure and the processes and procedures used to evaluate and oversee demonstration projects that receive funding under this section; and

(3) any recommended changes to the structure of this program to improve the success in meeting the program purposes under subsection (a).

SEC. 8303. STREAMLINING PRIZE COMPETITIONS.

Section 1008 of the Energy Policy Act of 2005 (42 U.S.C. 16396) is amended by inserting after subsection (d) the following (and redesignating subsections (e) and (f) as subsections (g) and (h), respectively):

''(e) COORDINATION.—In carrying out subsection (a), and for any prize competitions under section 105 of the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Reauthorization Act of 2010, the Secretary shall—

''(1) designate at least one full time employee to serve as a Department-wide point of contact on prize competitions;

''(2) issue Department-wide guidance on the design, development, and implementation of prize competitions;

''(3) collect and disseminate best practices on the design and administration of prize competitions;

''(4) streamline contracting mechanisms for the implementation of prize competitions; and

''(5) provide training and prize competition design support, as necessary, to Department staff to develop prize competitions and challenges.

''(f) REPORT.—In accordance with section 8307(a) of the Clean Economy Jobs and Innovation Act, the Secretary shall report annually on a description of any prize competitions carried out using this authority, the total amount of prizes awarded along with any private sector contributions, the methods used for solicitation and evaluation, and a description of how each prize competition advanced the mission of the Department.''.

SEC. 8304. MILESTONE-BASED DEMONSTRATION PROJECTS.

(a) IN GENERAL.—Acting under section 646(g) of the Department of Energy Organization Act (42 U.S.C. 7256(g)), notwithstanding paragraph (10) of such section, the Secretary may carry out demonstration projects as a milestone-based demonstration project that requires particular technical and financial milestones to be met before

a participant is awarded grants by the Department through a competitive award process.

(b) REQUIREMENTS.—In carrying out milestone-based demonstration projects under the authority in subsection (a), the Secretary shall, for each relevant project—

(1) request proposals from eligible entities, as determined by the Secretary, including—

(A) a business plan, that may include a plan for scalable manufacturing and a plan for addressing supply chain gaps;

(B) a plan for raising private sector investment; and

(C) proposed technical and financial milestones, including estimated project timelines and total costs;

(2) award funding of a predetermined amount to projects that successfully meet proposed milestones under paragraph (1)(C) or for expenses deemed reimbursable by the Secretary, in accordance with terms negotiated for an individual award;

(3) require cost-sharing in accordance with section 988 of the Energy Policy Act of 2005; and

(4) communicate regularly with selected eligible entities and, if the Secretary deems appropriate, ex-

ercise small amounts of flexibility for technical and financial milestones as projects mature.

(c) AWARDS.—For the program established under subsection (a)—

(1) an award recipient shall be responsible for all costs until milestones are achieved, or reimbursable expenses are reviewed and verified by the Department; and

(2) should an awardee not meet the milestones described in subsection (a), the Secretary or their designee may end the partnership with an award recipient and use the remaining funds in the ended agreement for new or existing projects carried out under this section.

(d) PROJECT MANAGEMENT.—In carrying out projects under this program and assessing the completion of their milestones in accordance with subsection (b), the Secretary shall consult with experts that represent diverse perspectives and professional experiences, including those from the private sector, to ensure a complete and thorough review.

(e) REPORT.—In accordance with section 8307(a), the Secretary shall report annually on any demonstration projects carried out using the authorities under this section.

SEC. 8305. COST-SHARE WAIVER EXTENSION.

(a) Section 988 of the Energy Policy Act of 2005 is amended in subsection (b)(4)(B) by striking ''this paragraph'' and inserting ''the Energizing Technology Transfer Act''.

(b) Section 108 of the Department of Energy Research and Innovation Act is amended in subparagraph (b) by striking ''this Act'' everywhere it appears and replacing with ''title VIII of the Clean Economy Jobs and Innovation Act''.

SEC. 8306. SPECIAL HIRING AUTHORITY FOR SCIENTIFIC, ENGINEERING, AND PROJECT MANAGEMENT PERSONNEL.

(a) IN GENERAL.—The Under Secretary for Science shall have the authority to—

(1) make appointments of scientific, engineering, and professional personnel, without regard to civil service laws, to assist the Department in meeting specific project or research needs;

(2) fix the basic pay of any employee appointed under this section at a rate to be determined by the Under Secretary at rates not in excess of the Executive Schedule (EX–II) without regard to the civil service laws; and

(3) pay any employee appointed under this section payments in addition to basic pay, except that

the total amount of additional payments paid to an employee under this subsection for any 12-month period shall not exceed the lesser of the following amounts:

(A) $25,000.

(B) The amount equal to 25 percent of the annual rate of basic pay of that employee.

(C) The amount of the limitation that is applicable for a calendar year under section 5307(a)(1) of title 5, United States Code.

(b) TERM.—

(1) IN GENERAL.—The term of any employee appointed under this section shall not exceed 3 years unless otherwise authorized in law.

(2) TERMINATION.—The Under Secretary for Science shall have the authority to terminate any employee appointed under this section at any time based on performance or changing project or research needs of the Department.

SEC. 8307. TECHNOLOGY TRANSFER REPORTS AND EVALUATION.

(a) ANNUAL REPORT.—As part of the updated technology transfer execution plan required each year under section 1001(h)(2) of the Energy Policy Act of 2005 (42 U.S.C. 16391(g)(2)), the Secretary shall submit to the

Committee on Science, Space, and Technology Committee of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report on the progress and implementation of programs established under sections 8103, 8203, 8204, 8205, 8207, 8301, 8302, 8303, and 8304 of this Act and section 1001(e) of the Energy Policy Act of 2005 (42 U.S.C. 16391(e)).

(b) EVALUATION.—Not later than 3 years after the enactment of this Act and every 3 years thereafter the Secretary shall submit to the Committee on Science, Space, and Technology Committee of the House of Representatives and the Committee on Energy and Natural Resources of the Senate an evaluation on the extent to which programs established under sections 8102, 8103, 8104, and 8202 of this Act and section 1001(e) of the Energy Policy Act of 2005 (42 U.S.C. 16391(e)) are achieving success based on relevant short-term and long-term metrics.

(c) REPORT ON TECHNOLOGY TRANSFER GAPS.—Not later than 3 years after the enactment of this Act, the Secretary shall enter into an agreement with the National Academies of Science, Engineering and Medicine to submit to the Committee on Science, Space, and Technology Committee of the House of Representatives and the Committee on Energy and Natural Resources of the Sen-

ate a report on programmatic gaps that exist to advance the commercial application of technologies developed at the National Laboratories.

SEC. 8308. OTHER TRANSACTION AUTHORITY EXTENSION.

Subsection 646(g)(10) of the Department of Energy Organization Act (42 U.S.C. 7256(g)(10)) is amended by striking ''September 30, 2020'' and inserting ''September 30, 2025''.

Subtitle D—Increasing and Mobilizing Partnerships to Achieve Commercialization of Technologies for Energy

SEC. 8401. SHORT TITLE.

This subtitle may be cited as the ''Increasing and Mobilizing Partnerships to Achieve Commercialization of Technologies for Energy Act'' or the ''IMPACT for Energy Act''.

SEC. 8402. DEFINITIONS.

In this subtitle:

(1) BOARD.—The term ''Board'' means the Board of Directors described in section 8403(b)(1).

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

(3) EXECUTIVE DIRECTOR.—The term ''Executive Director'' means the Executive Director described in section 8403(e)(1).

(4) FOUNDATION.—The term ''Foundation'' means the Energy Technology Commercialization Foundation established under section 8403(a).

(5) 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).

(6) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

SEC. 8403. ENERGY TECHNOLOGY COMMERCIALIZATION FOUNDATION.

(a) ESTABLISHMENT.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary shall establish a nonprofit corporation to be known as the ''Energy Technology Commercialization Foundation''.

(2) MISSION.—The mission of the Foundation shall be—

(A) to support the mission of the Department; and

(B) to advance collaboration with energy researchers, institutions of higher education, industry, and nonprofit and philanthropic organizations to accelerate the commercialization of energy technologies.

(3) LIMITATION.—The Foundation shall not be an agency or instrumentality of the Federal Government.

(4) TAX-EXEMPT STATUS.—The Board shall take all necessary and appropriate steps to ensure that the Foundation receives a determination from the Internal Revenue Service that it is an organization that is described in section 501(c) of the Internal Revenue Code of 1986, and exempt from taxation under section 501(a) of such Code.

(5) COLLABORATION WITH EXISTING ORGANIZATIONS.—The Secretary may collaborate with 1 or more organizations to establish the Foundation and carry out the activities of the Foundation.

(b) BOARD OF DIRECTORS.—

(1) ESTABLISHMENT.—The Foundation shall be governed by a Board of Directors.

(2) COMPOSITION.—

(A) IN GENERAL.—The Board shall be composed of the members described in subparagraph (B).

(B) BOARD MEMBERS.—

(i) INITIAL MEMBERS.—The Secretary shall—

(I) enter into a contract with the National Academies of Sciences, Engineering, and Medicine to develop a list of individuals to serve as members of the Board who are well-qualified and will meet the requirements of clauses (ii) and (iii); and

(II) appoint the initial members of the Board, in consultation with the National Academies of Sciences, Engineering, and Medicine, with the requirements of clauses (ii) and (iii).

(ii) REPRESENTATION.—The members of the Board shall reflect a broad cross-section of stakeholders from academia, industry, nonprofit organizations, State or local governments, the investment community, the philanthropic community, and

management and operating contractors of the National Laboratories.

(iii) EXPERIENCE.—The Secretary shall ensure that a majority of the members of the Board—

(I)(aa) has experience in the energy sector;

(bb) has research experience in the energy field; or

(cc) has experience in technology commercialization or foundation operations; and

(II) to the extent practicable, represents diverse regions and energy sectors.

(3) CHAIR AND VICE CHAIR.—

(A) IN GENERAL.—The Board shall designate from among the members of the Board—

(i) an individual to serve as Chair of the Board; and

(ii) an individual to serve as Vice Chair of the Board.

(B) TERMS.—The term of service of the Chair and Vice Chair of the Board shall end on the earlier of—

(i) the date that is 3 years after the date on which the Chair or Vice Chair of the Board, as applicable, is designated for the position; and

(ii) the last day of the term of service of the member, as determined under paragraph (4)(A), who is designated to be Chair or Vice Chair of the Board, as applicable.

(C) REPRESENTATION.—The Chair and Vice Chair of the Board—

(i) shall not be representatives of the same area or entity, as applicable, under paragraph (2)(B)(ii); and

(ii) shall not be representatives of any area or entity, as applicable, represented by the immediately preceding Chair and Vice Chair of the Board.

(4) TERMS AND VACANCIES.—

(A) TERMS.—

(i) IN GENERAL.—Except as provided in clause (ii), the term of service of each member of the Board shall be 5 years.

(ii) INITIAL MEMBERS.—Of the initial members of the Board appointed under paragraph (2)(B)(i), half of the members shall serve for 4 years and half of the members shall serve for 5 years, as determined by the Chair of the Board.

(B) VACANCIES.—Any vacancy in the membership of the Board—

(i) shall be filled in accordance with the bylaws of the Foundation by an individual capable of representing the same area or entity, as applicable, as represented by the vacating board member under paragraph (2)(B)(ii);

(ii) shall not affect the power of the remaining members to execute the duties of the Board; and

(iii) shall be filled by an individual selected by the Board.

(5) MEETINGS; QUORUM.—

(A) INITIAL MEETING.—Not later than 60 days after the Board is established, the Sec-

retary shall convene a meeting of the members of the Board to incorporate the Foundation.

(B) QUORUM.—A majority of the members of the Board shall constitute a quorum for purposes of conducting the business of the Board.

(6) DUTIES.—The Board shall—

(A) establish bylaws for the Foundation in accordance with paragraph (7);

(B) provide overall direction for the activities of the Foundation and establish priority activities;

(C) carry out any other necessary activities of the Foundation;

(D) evaluate the performance of the Executive Director; and

(E) actively solicit and accept funds, gifts, grants, devises, or bequests of real or personal property to the Foundation, including from private entities.

(7) BYLAWS.—

(A) IN GENERAL.—The bylaws established under paragraph (6)(A) may include—

(i) policies for the selection of Board members, officers, employees, agents, and contractors of the Foundation;

(ii) policies, including ethical standards, for—

(I) the acceptance, solicitation, and disposition of donations and grants to the Foundation, including appropriate limits on the ability of donors to designate, by stipulation or restriction, the use or recipient of donated funds; and

(II) the disposition of assets of the Foundation;

(iii) policies that subject all employees, fellows, trainees, and other agents of the Foundation (including members of the Board) to conflict of interest standards; and

(iv) the specific duties of the Executive Director.

(B) REQUIREMENTS.—The Board shall ensure that the bylaws of the Foundation and the activities carried out under those bylaws shall not—

(i) reflect unfavorably on the ability of the Foundation to carry out activities in a fair and objective manner; or

(ii) compromise, or appear to compromise, the integrity of any governmental agency or program, or any officer or employee employed by, or involved in, a governmental agency or program.

(8) COMPENSATION.—

(A) IN GENERAL.—No member of the Board shall receive compensation for serving on the Board.

(B) CERTAIN EXPENSES.—In accordance with the bylaws of the Foundation, members of the Board may be reimbursed for travel expenses, including per diem in lieu of subsistence, and other necessary expenses incurred in carrying out the duties of the Board.

(c) PURPOSE.—The purpose of the Foundation is to increase private and philanthropic sector investments that support efforts to create, develop, and commercialize innovative technologies that address crosscutting national energy challenges by methods that include—

(1) fostering collaboration and partnerships with researchers from the Federal Government, State governments, institutions of higher education, federally funded research and development centers, industry, and nonprofit organizations for the re-

search, development, or commercialization of transformative energy and associated technologies;

(2)(A) strengthening regional economic development through scientific and energy innovation; and

(B) disseminating lessons learned from that development to foster the creation and growth of new regional energy innovation clusters;

(3) promoting new product development that supports job creation;

(4) administering prize competitions to accelerate private sector competition and investment; and

(5) supporting programs that advance technologies from the prototype stage to a commercial stage.

(d) ACTIVITIES.—

(1) STUDIES, COMPETITIONS, AND PROJECTS.—The Foundation may conduct and support studies, competitions, projects, and other activities that further the purpose of the Foundation described in subsection (c).

(2) FELLOWSHIPS AND GRANTS.—

(A) IN GENERAL.—The Foundation may award fellowships and grants for activities relating to research, development, demonstration,

maturation, or commercialization of energy and other Department-supported technologies.

(B) FORM OF AWARD.—A fellowship or grant under subparagraph (A) may consist of a stipend, health insurance benefits, funds for travel, and funds for other appropriate expenses.

(C) SELECTION.—In selecting a recipient for a fellowship or grant under subparagraph (A), the Foundation—

(i) shall make the selection based on the technical and commercialization merits of the proposed project of the potential recipient; and

(ii) may consult with a potential recipient regarding the ability of the potential recipient to carry out various projects that would further the purpose of the Foundation described in subsection (c).

(D) NATIONAL LABORATORIES.—A National Laboratory that applies for or accepts a grant under subparagraph (A) shall not be considered to be engaging in a competitive process.

(3) ACCESSING FACILITIES AND EXPERTISE.—The Foundation may work with the Department—

(A) to leverage the capabilities and facilities of National Laboratories to commercialize technology; and

(B) to assist with resources, including through the development of internet websites that provide information on the capabilities and facilities of each National Laboratory relating to the commercialization of technology.

(4) TRAINING AND EDUCATION.—The Foundation may support programs that provide commercialization training to researchers, scientists, and other relevant personnel at National Laboratories and institutions of higher education to help commercialize federally funded technology.

(5) MATURATION FUNDING.—The Foundation shall support programs that provide maturation funding to researchers to advance the technology of those researchers for the purpose of moving products from a prototype stage to a commercial stage.

(6) STAKEHOLDER ENGAGEMENT.—The Foundation shall convene, and may consult with, representatives from the Department, institutions of higher education, National Laboratories, the private sector, and commercialization organizations to develop programs for the purpose of the Foundation

described in subsection (c) and to advance the activities of the Foundation.

(7) INDIVIDUAL LABORATORY FOUNDATIONS PROGRAM.—

(A) DEFINITION OF INDIVIDUAL LABORATORY FOUNDATION.—In this paragraph, the term ''Individual Laboratory Foundation'' means a Laboratory Foundation established by a National Laboratory.

(B) SUPPORT.—The Foundation shall provide support to and collaborate with Individual Laboratory Foundations.

(C) GUIDELINES AND TEMPLATES.—For the purpose of providing support under subparagraph (B), the Secretary shall establish suggested guidelines and templates for Individual Laboratory Foundations, including—

(i) a standard adaptable organizational design for the responsible management of an Individual Laboratory Foundation;

(ii) standard and legally tenable bylaws and money-handling procedures for Individual Laboratory Foundations; and

(iii) a standard training curriculum to orient and expand the operating expertise of personnel employed by an Individual Laboratory Foundation.

(D) AFFILIATIONS.—Nothing in this paragraph requires—

(i) an existing Individual Laboratory Foundation to modify current practices or affiliate with the Foundation; or

(ii) an Individual Laboratory Foundation to be bound by charter or corporate bylaws as permanently affiliated with the Foundation.

(8) SUPPLEMENTAL PROGRAMS.—The Foundation may carry out supplemental programs—

(A) to conduct and support forums, meetings, conferences, courses, and training workshops consistent with the purpose of the Foundation described in subsection (c);

(B) to support and encourage the understanding and development of—

(i) data that promotes the translation of technologies from the research stage, through the development and maturation stage, and ending in the market stage; and

(ii) policies that make regulation more effective and efficient by leveraging the technology translation data described in clause (i) for the regulation of relevant technology sectors;

(C) for writing, editing, printing, publishing, and vending books and other materials relating to research carried out under the Foundation and the Department; and

(D) to conduct other activities to carry out and support the purpose of the Foundation described in subsection (c).

(9) EVALUATIONS.—The Foundation shall support the development of an evaluation methodology, to be used as part of any program supported by the Foundation, that shall—

(A) consist of qualitative and quantitative metrics; and

(B) include periodic third party evaluation of those programs and other activities of the Foundation.

(10) COMMUNICATIONS.—The Foundation shall develop an expertise in communications to promote the work of grant and fellowship recipients under paragraph (2), the commercialization successes of

the Foundation, opportunities for partnership with the Foundation, and other activities.

(e) ADMINISTRATION.—

(1) EXECUTIVE DIRECTOR.—The Board shall hire an Executive Director of the Foundation, who shall serve at the pleasure of the Board.

(2) ADMINISTRATIVE CONTROL.—No member of the Board, officer or employee of the Foundation or of any program established by the Foundation, or participant in a program established by the Foundation, shall exercise administrative control over any Federal employee.

(3) STRATEGIC PLAN.—Not later than 1 year after the date of enactment of this Act, the Foundation shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a strategic plan that contains—

(A) a plan for the Foundation to become financially self-sustaining in fiscal year 2022 and thereafter (except for the amounts provided each fiscal year under subsection (l)(1)(C));

(B) a forecast of major crosscutting energy challenge opportunities, including short- and long-term objectives, identified by the Board,

with input from communities representing the entities and areas, as applicable, described in subsection (b)(2)(B)(ii);

(C) a description of the efforts that the Foundation will take to be transparent in the processes of the Foundation, including processes relating to—

(i) grant awards, including selection, review, and notification;

(ii) communication of past, current, and future research priorities; and

(iii) solicitation of and response to public input on the opportunities identified under subparagraph (B); and

(D) a description of the financial goals and benchmarks of the Foundation for the following 10 years.

(4) ANNUAL REPORT.—Not later than 1 year after the date on which the Foundation is established, and every 2 years thereafter, the Foundation shall submit to the Committee on Energy and Natural Resources of the Senate, the Committee on Science, Space, and Technology of the House of Representatives, and the Secretary a report that, for the year covered by the report—

(A) describes the activities of the Foundation and the progress of the Foundation in furthering the purpose of the Foundation described in subsection (c);

(B) provides a specific accounting of the source and use of all funds made available to the Foundation to carry out those activities;

(C) describes how the results of the activities of the Foundation could be incorporated into the procurement processes of the General Services Administration; and

(D) includes a summary of each evaluation conducted using the evaluation methodology described in subsection (d)(9).

(5) EVALUATION BY COMPTROLLER GENERAL.—Not later than 5 years after the date on which the Foundation is established, the Comptroller General of the United States shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Science, Space, and Technology of the House of Representatives—

(A) an evaluation of—

(i) the extent to which the Foundation is achieving the mission of the Foundation; and

(ii) the operation of the Foundation; and

(B) any recommendations on how the Foundation may be improved.

(6) AUDITS.—The Foundation shall—

(A) provide for annual audits of the financial condition of the Foundation; and

(B) make the audits, and all other records, documents, and papers of the Foundation, available to the Secretary and the Comptroller General of the United States for examination or audit.

(7) SEPARATE FUND ACCOUNTS.—The Board shall ensure that any funds received under subsection (l)(1) are held in a separate account from any other funds received by the Foundation.

(8) INTEGRITY.—

(A) IN GENERAL.—To ensure integrity in the operations of the Foundation, the Board shall develop and enforce procedures relating to standards of conduct, financial disclosure statements, conflicts of interest (including recusal and waiver rules), audits, and any other matters determined appropriate by the Board.

(B) FINANCIAL CONFLICTS OF INTEREST.—Any individual who is an officer, employee, or member of the Board is prohibited from any participation in deliberations by the Foundation of a matter that would directly or predictably affect any financial interest of—

(i) the individual;

(ii) a relative (as defined in section 109 of the Ethics in Government Act of 1978 (5 U.S.C. App.)) of that individual; or

(iii) a business organization or other entity in which the individual has an interest, including an organization or other entity with which the individual is negotiating employment.

(9) INTELLECTUAL PROPERTY.—The Board shall adopt written standards to govern the ownership and licensing of any intellectual property rights developed by the Foundation or derived from the collaborative efforts of the Foundation.

(10) LIABILITY.—The United States shall not be liable for any debts, defaults, acts, or omissions of the Foundation nor shall the full faith and credit

of the United States extend to any obligations of the Foundation.

(11) NONAPPLICABILITY OF FACA.—The Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the Foundation.

(f) DEPARTMENT COLLABORATION.—

(1) NATIONAL LABORATORIES.—The Secretary shall collaborate with the Foundation to develop a process to ensure collaboration and coordination between the Department, the Foundation, and National Laboratories—

(A) to streamline contracting processes between National Laboratories and the Foundation, including by—

(i) streamlining the ability of the Foundation to transfer equipment and funds to National Laboratories;

(ii) standardizing contract mechanisms to be used by the Foundation; and

(iii) streamlining the ability of the Foundation to fund endowed positions at National Laboratories;

(B) to allow a National Laboratory or site of a National Laboratory—

(i) to accept and perform work for the Foundation, consistent with provided resources, notwithstanding any other provision of law governing the administration, mission, use, or operations of the National Laboratory or site, as applicable; and

(ii) to perform that work on a basis equal to other missions at the National Laboratory; and

(C) to permit the director of any National Laboratory or site of a National Laboratory to enter into a cooperative research and development agreement or negotiate a licensing agreement with the Foundation pursuant to section 12 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a).

(2) DEPARTMENT LIAISONS.—The Secretary shall appoint liaisons from across the Department to collaborate and coordinate with the Foundation.

(3) ADMINISTRATION.—The Secretary shall leverage appropriate arrangements, contracts, and directives to carry out the process developed under paragraph (1).

(g) NATIONAL SECURITY.—Nothing in this section exempts the Foundation from any national security policy of the Department.

(h) SUPPORT SERVICES.—The Secretary shall provide facilities, utilities, and support services to the Foundation if it is determined by the Secretary to be advantageous to the research programs of the Department.

(i) PREEMPTION OF AUTHORITY.—This section shall not preempt any authority or responsibility of the Secretary under any other provision of law.

(j) AUTHORIZATION OF APPROPRIATIONS.—

(1) IN GENERAL.—There are authorized to be appropriated—

(A) to the Secretary, not less than $1,500,000 for fiscal year 2021 to establish the Foundation;

(B) to the Foundation, not less than $30,000,000 for fiscal year 2021 to carry out the activities of the Foundation; and

(C) to the Foundation, not less than $3,000,000 for fiscal year 2022, and each fiscal year thereafter, for administrative and operational costs.

(2) COST SHARE.—Funds made available under paragraph (1)(B) shall be required to be cost-shared

by a partner of the Foundation other than the Department.

TITLE IX—INDUSTRIAL INNOVATION AND COMPETITIVENESS

Subtitle A—Smart Manufacturing

SEC. 9101. DEFINITIONS.

In this subtitle:

(1) ENERGY MANAGEMENT SYSTEM.—The term ''energy management system'' means a business management process based on standards of the American National Standards Institute that enables an organization to follow a systematic approach in achieving continual improvement of energy performance, including energy efficiency, security, use, and consumption.

(2) INDUSTRIAL ASSESSMENT CENTER.—The term ''industrial assessment center'' means a center located at an institution of higher education that—

(A) receives funding from the Department of Energy;

(B) provides an in-depth assessment of small- and medium-sized manufacturer plant sites to evaluate the facilities, services, and manufacturing operations of the plant site; and

(C) identifies opportunities for potential savings for small- and medium-sized manufacturer plant sites from energy efficiency improvements, waste minimization, pollution prevention, and productivity improvement.

(3) INFORMATION AND COMMUNICATION TECHNOLOGY.—The term ''information and communication technology'' means any electronic system or equipment (including the content contained in the system or equipment) used to create, convert, communicate, or duplicate data or information, including computer hardware, firmware, software, communication protocols, networks, and data interfaces.

(4) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(5) 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).

(6) NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM.—The term ''North American Industry Classification System'' means the standard used by Federal statistical agencies in classifying business

establishments for the purpose of collecting, analyzing, and publishing statistical data relating to the business economy of the United States.

(7) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(8) SMALL AND MEDIUM MANUFACTURERS.—The term ''small and medium manufacturers'' means manufacturing firms—

(A) classified in the North American Industry Classification System as any of sectors 31 through 33;

(B) with gross annual sales of less than $100,000,000;

(C) with fewer than 500 employees at the plant site; and

(D) with annual energy bills totaling more than $100,000 and less than $2,500,000.

(9) SMART MANUFACTURING.—The term ''smart manufacturing'' means advanced technologies in information, automation, monitoring, computation, sensing, modeling, and networking that—

(A) digitally—

(i) simulate manufacturing production lines;

(ii) operate computer-controlled manufacturing equipment;

(iii) monitor and communicate production line status; and

(iv) manage and optimize energy productivity and cost throughout production;

(B) model, simulate, and optimize the energy efficiency of a factory building;

(C) monitor and optimize building energy performance;

(D) model, simulate, and optimize the design of energy efficient and sustainable products, including the use of digital prototyping and additive manufacturing to enhance product design;

(E) connect manufactured products in networks to monitor and optimize the performance of the networks, including automated network operations; and

(F) digitally connect the supply chain network.

SEC. 9102. DEVELOPMENT OF NATIONAL SMART MANUFACTURING PLAN.

(a) IN GENERAL.—Not later than 3 years after the date of enactment of this Act, the Secretary, in consulta-

tion with the National Academies, shall develop and complete a national plan for smart manufacturing technology development and deployment to improve the productivity and energy efficiency of the manufacturing sector of the United States.

(b) CONTENT.—

(1) IN GENERAL.—The plan developed under subsection (a) shall identify areas in which agency actions by the Secretary and other heads of relevant Federal agencies would—

(A) facilitate quicker development, deployment, and adoption of smart manufacturing technologies and processes;

(B) result in greater energy efficiency and lower environmental impacts for all American manufacturers; and

(C) enhance competitiveness and strengthen the manufacturing sectors of the United States.

(2) INCLUSIONS.—Agency actions identified under paragraph (1) shall include—

(A) an assessment of previous and current actions of the Department of Energy relating to smart manufacturing;

(B) the establishment of voluntary interconnection protocols and performance standards;

(C) use of smart manufacturing to improve energy efficiency and reduce emissions in supply chains across multiple companies;

(D) actions to increase cybersecurity in smart manufacturing infrastructure;

(E) deployment of existing research results; and

(F) the leveraging of existing high-performance computing infrastructure.

(c) BIENNIAL REVISIONS.—Not later than 2 years after the date on which the Secretary completes the plan under subsection (a), and not less frequently than once every 2 years thereafter, the Secretary shall revise the plan to account for advancements in information and communication technology and manufacturing needs.

(d) REPORT.—Annually until the completion of the plan under subsection (a), the Secretary shall submit to Congress a report on the progress made in developing the plan.

SEC. 9103. LEVERAGING EXISTING AGENCY PROGRAMS TO ASSIST SMALL AND MEDIUM MANUFACTURERS.

(a) FINDINGS.—Congress finds that—

(1) the Department of Energy has existing technical assistance programs that facilitate greater economic growth through outreach to and engagement with small and medium manufacturers;

(2) those technical assistance programs represent an important conduit for increasing the awareness of and providing education to small and medium manufacturers regarding the opportunities for implementing smart manufacturing; and

(3) those technical assistance programs help facilitate the implementation of best practices.

(b) EXPANSION OF TECHNICAL ASSISTANCE PROGRAMS.—The Secretary shall expand the scope of technologies covered by the Industrial Assessment Centers of the Department of Energy—

(1) to include smart manufacturing technologies and practices; and

(2) to equip the directors of the Industrial Assessment Centers with the training and tools necessary to provide technical assistance in smart manufacturing technologies and practices, including energy management systems, to manufacturers.

SEC. 9104. LEVERAGING SMART MANUFACTURING INFRASTRUCTURE AT NATIONAL LABORATORIES.

(a) STUDY.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary shall conduct a study on how the Department of Energy can increase access to existing high-performance computing resources in the National Laboratories, particularly for small and medium manufacturers.

(2) INCLUSIONS.—In identifying ways to increase access to National Laboratories under paragraph (1), the Secretary shall—

(A) focus on increasing access to the computing facilities of the National Laboratories; and

(B) ensure that—

(i) the information from the manufacturer is protected; and

(ii) the security of the National Laboratory facility is maintained.

(3) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to Congress a report describing the results of the study.

(b) ACTIONS FOR INCREASED ACCESS.—The Secretary shall facilitate access to the National Laboratories studied under subsection (a) for small and medium manufacturers so that small and medium manufacturers can fully use the high-performance computing resources of the National Laboratories to enhance the manufacturing competitiveness of the United States.

SEC. 9105. STATE LEADERSHIP GRANTS.

(a) FINDING.—Congress finds that the States—

(1) are committed to promoting domestic manufacturing and supporting robust economic development activities; and

(2) are uniquely positioned to assist manufacturers, particularly small and medium manufacturers, with deployment of smart manufacturing through the provision of infrastructure, including—

(A) access to shared supercomputing facilities;

(B) assistance in developing process simulations; and

(C) conducting demonstrations of the benefits of smart manufacturing.

(b) GRANTS AUTHORIZED.—The Secretary may make grants on a competitive basis to States for establishing State programs to be used as models for sup-

porting the implementation of smart manufacturing technologies.

(c) APPLICATION.—

(1) IN GENERAL.—To be eligible to receive a grant under this section, a State shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

(2) CRITERIA.—The Secretary shall evaluate an application for a grant under this section on the basis of merit using criteria identified by the Secretary, including—

(A) the breadth of academic and private sector partners;

(B) alternate sources of funding;

(C) plans for dissemination of results;

(D) the permanence of the infrastructure to be put in place by the project; and

(E) whether the project will be of benefit or use to diverse and underserved communities.

(d) REQUIREMENTS.—

(1) TERM.—The term of a grant under this section shall not exceed 3 years.

(2) MAXIMUM AMOUNT.—The amount of a grant under this section shall be not more than $3,000,000.

(3) MATCHING REQUIREMENT.—Each State that receives a grant under this section shall contribute matching funds in an amount equal to not less than 30 percent of the amount of the grant.

(e) USE OF FUNDS.—A State shall use a grant provided under this section—

(1) to provide access to shared supercomputing facilities to small and medium manufacturers;

(2) to fund research and development of transformational manufacturing processes and materials technology that advance smart manufacturing; and

(3) to provide tools and training to small and medium manufacturers on how to adopt energy management systems and implement smart manufacturing technologies in the facilities of the small and medium manufacturers.

(f) EVALUATION.—The Secretary shall conduct biannual evaluations of each grant made under this section—

(1) to determine the impact and effectiveness of programs funded with the grant; and

(2) to provide guidance to States on ways to better execute the program of the State.

(g) FUNDING.—There is authorized to be appropriated to the Secretary to carry out this section $10,000,000 for each of fiscal years 2021 through 2025.

SEC. 9106. REPORT.

The Secretary annually shall submit to Congress and make publicly available a report on the progress made in advancing smart manufacturing in the United States.

Subtitle B—American Innovation and Manufacturing Leadership

SEC. 9201. DEFINITIONS.

In this subtitle:

(1) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of the Environmental Protection Agency.

(2) ALLOWANCE.—The term ''allowance'' means a limited authorization for the production or the consumption, as applicable, of a regulated substance in accordance with this subtitle.

(3) CONSUMPTION.—The term ''consumption'' means, with respect to any regulated substance, the amount of that regulated substance produced in the United States, plus the amount imported, minus the amount exported.

(4) CONSUMPTION BASELINE.—The term ''consumption baseline'' means the baseline established

for consumption of regulated substances under section 9204(a)(2).

(5) DESTROY.—The term ''destroy'' means destruction by process or technology as approved by regulation by the Administrator.

(6) EXCHANGE VALUE.—The term ''exchange value'' means, for each regulated substance and each substance referenced in paragraph (1)(B), (1)(C), (2)(B), or (2)(C) of section 9204(a), the value by which the mass of such substance shall be multiplied for purposes of calculations under section 9204.

(7) EXPORT.—The term ''export'' means the transport of a regulated substance from any place subject to the jurisdiction of the United States to any place not subject to the jurisdiction of the United States.

(8) IMPORT.—The term ''import'' means to land on, bring into, or introduce into, or attempt to land on, bring into, or introduce into, any place subject to the jurisdiction of the United States, whether or not such landing, bringing, or introduction constitutes an importation within the meaning of the customs laws of the United States.

(9) PERSON.—The term ''person'' has the meaning given to such term in section 302 of the Clean Air Act (42 U.S.C. 7602).

(10) PRODUCE, PRODUCED, AND PRODUCTION.—The terms ''produce'', ''produced'', and ''production'' refer to the manufacture in the United States of a regulated substance from any raw material or feedstock chemical, but such terms do not include—

(A) the manufacture of a regulated substance that is used and entirely consumed (except for trace quantities) in the manufacture of other chemicals;

(B) the reuse or recycling of a regulated substance; or

(C) amounts that are destroyed.

(11) PRODUCTION BASELINE.—The term ''production baseline'' means the baseline established for production of regulated substances under section 9204(a)(1).

(12) RECLAIM, RECLAIMED, AND RECLAIMING.—The terms ''reclaim'', ''reclaimed'', and ''reclaiming'' mean the reprocessing of a recovered regulated substance to, at a minimum, the purity specified by and verified in accordance with the Air-Con-

ditioning, Heating, and Refrigeration Institute (AHRI) Standard 700–2016 (or an appropriate successor standard adopted by the Administrator).

(13) RECOVER AND RECOVERED.—The terms ''recover'' and ''recovered'' mean the removal of a regulated substance in any condition from equipment and the storage of such regulated substance in an external container without necessarily testing or processing such regulated substance in any way.

(14) REGULATED SUBSTANCE.—The term ''regulated substance'' means a substance on the list published pursuant to section 9202.

(15) UNITED STATES.—The term ''United States'' means any place subject to the jurisdiction of the United States.

SEC. 9202. LISTING OF REGULATED SUBSTANCES.

(a) LIST OF REGULATED SUBSTANCES.—The Administrator shall maintain a list of regulated substances, listed by chemical name and common name. The Administrator shall publish such list and each update thereto in the Federal Register. Not later than 180 days after the date of enactment of this Act, the Administrator shall establish the initial such list. The initial list under this subsection shall contain the following:

Table 1

Chemical Name	Common Name	Exchange Value
CHF_2 CHF_2	HFC-134	1100
CH_2FCF_3	HFC-134a	1430
CH_2FCHF_2	HFC143	353
$CHF_2CH_2CF_3$	HFC-245fa	1030
$CF_3CH_2CF_2CH_3$	HFC-365mfc	794
CF_3CHFCF_3	HFC-227ea	3220
$CH_2FCF_2CF_3$	HFC-236cb	1340
CHF_2CHFCF_3	HFC-236ea	1370
$CF_3CH_2CF_3$	HFC-236fa	9810
$CH_2FCF_2CHF_2$	HFC-245ca	693
$CF_3CHFCHFCF_2CF_3$	HFC-43–10mee	1640
CH_2F_2	HFC-32	675
CHF_2CF_3	HFC-125	3500
CH_3CF_3	HFC-143a	4470
CH_3F	HFC-41	92
CH_2FCH_2F	HFC-152	53
CH_3CHF_2	HFC-152a	124
CHF_3	HFC-23	14800

(b) REQUIREMENTS.—The list required under subsection (a) shall include the exchange value of each regulated substance, as set forth in table 1 of this section or, for additional regulated substances listed pursuant to subsection (c), as determined by the Administrator pursuant to the requirements of that subsection.

(c) ADDITIONAL REGULATED SUBSTANCES.—The Administrator may, by regulation, add a substance to the list published under subsection (a) if such substance—

(1) is a saturated hydrofluorocarbon; and

(2) has an exchange value, as determined by the Administrator on the basis of widely used or commonly accepted credible current scientific information relating to infrared absorption and kinetic rate constants, of not less than 53.

(d) SAVINGS PROVISION.—Nothing in this section authorizes the Administrator to add to the list under subsection (a), for purposes of phasing down production or consumption under section 9204, a blend of substances. The preceding sentence does not affect the authority of the Administrator to regulate a regulated substance within a blend of substances.

SEC. 9203. MONITORING AND REPORTING REQUIREMENTS.

(a) REPORTS.—

(1) IN GENERAL.—On a periodic basis to be determined by the Administrator, but which shall be not less than annually, each person who produced, imported, exported, reclaimed, destroyed, used and entirely consumed (except for trace quantities) in the manufacture of other chemicals, or used as a process agent a regulated substance shall submit a report to the Administrator setting forth the amount of each such substance that such person during the preceding reporting period—

(A) produced;

(B) imported;

(C) exported;

(D) reclaimed;

(E) destroyed;

(F) used and entirely consumed (except for trace quantities) in the manufacture of other chemicals; or

(G) used as a process agent.

(2) ATTESTATION.—Each report submitted under paragraph (1) shall be signed and attested by a responsible officer (as such term is used in section 603(b) of the Clean Air Act (42 U.S.C. 7671b(b)).

(b) CESSATION OF REPORTING REQUIREMENT.—If a person subject to subsection (a)(1) permanently ceases production, importation, exportation, reclaiming, destruction, use and entire consumption (except for trace quantities), or process agent use, of a regulated substance, such person shall—

(1) submit a report under such subsection for the reporting period in which such cessation occurs;

(2) notify the Administrator of such cessation prior to the end of such reporting period; and

(3) not be subject to such subsection with respect to such regulated substance for subsequent reporting periods.

(c) BASELINE REPORTS.—

(1) INITIAL REPORT.—Each person reporting pursuant to subsection (a)(1) shall include in the first required such report, in addition to the information required by subsection (a)(1) to be reported for the applicable reporting period, the amount of each regulated substance, in each of calendar years 2011 through 2013, produced, imported, exported, reclaimed, destroyed, used and entirely consumed (except for trace quantities) in the manufacture of other chemicals, or used as a process agent.

(2) ADDITIONAL SUBSTANCES.—In the case of a substance added to the list of regulated substances pursuant to section 9202(c), each person who produced, imported, exported, reclaimed, destroyed, used and entirely consumed (except for trace quantities) in the manufacture of other chemicals, or used as a process agent, such regulated substance, shall submit to the Administrator, not later than 180 days after the date on which such substance is added to the list, a report setting forth the amount of the substance that such person produced, im-

ported, exported, reclaimed, destroyed, used and entirely consumed (except for trace quantities) in the manufacture of other chemicals, or used as a process agent in—

(A) each of calendar years 2011 through 2013; and

(B) the calendar year in which this Act is enacted and each subsequent calendar year, if required by the Administrator in a regulation adding a substance to the list of regulated substances.

(d) COORDINATION.—To the extent consistent with subsections (a) through (c), the Administrator may, by regulation, allow any person subject to the requirements of subsection (a)(1) to combine and include the information required to be reported under that subsection with any other related information that the person is required to report to the Administrator.

(e) REGULATIONS.—The Administrator shall promulgate regulations to implement this section. Not later than 270 days after the date of enactment of this Act, the Administrator shall promulgate such initial final regulations as may be necessary pursuant to the preceding sentence.

SEC. 9204. PHASEDOWN OF REGULATED SUBSTANCES.

(a) BASELINES.—

(1) PRODUCTION BASELINE.—The baseline for the phasedown of the production of regulated substances shall be the sum of—

(A) the sum of the products of—

(i) the average annual production in the United States of each regulated substance during the 3-year period of calendar years 2011, 2012, and 2013; multiplied by

(ii) the respective exchange value of each regulated substance;

(B) an amount equal to 15 percent of the sum of the products of—

(i) the average production in the United States of each hydrochlorofluorocarbon in 1989; multiplied by

(ii) the respective exchange value of each such hydrochlorofluorocarbon; and

(C) an amount equal to 0.42 percent of the sum of the products of—

(i) the average production in the United States of each chlorofluorocarbon in 1989; multiplied by

(ii) the respective exchange value of each such chlorofluorocarbon.

(2) CONSUMPTION BASELINE.—The baseline for the phasedown of the consumption of regulated substances shall be the sum of—

(A) an amount equal to the sum of the products of—

(i) the average annual consumption in the United States of each regulated substance during the 3-year period of calendar years 2011, 2012, and 2013; multiplied by

(ii) the respective exchange value of each such regulated substance;

(B) an amount equal to 15 percent of the sum of the products of—

(i) the average consumption in the United States of each hydrochlorofluorocarbon in 1989; multiplied by

(ii) the respective exchange value of each such hydrochlorofluorocarbon; and

(C) an amount equal to 0.42 percent of the sum of the products of—

(i) the average consumption in the United States of each chlorofluorocarbon in 1989; multiplied by

(ii) the respective exchange value of each such chlorofluorocarbon.

(3) EXCHANGE VALUES.—For purposes of paragraphs (1) and (2), the following exchange values for hydrochlorofluorocarbons and chlorofluorocarbons respectively shall apply:

Table 2

Chemical Name	Common Name	Exchange Value
$CHFCl_2$	HCFC-21	151
CHF_2Cl	HCFC-22	1810
$C_2HF_3Cl_2$	HCFC-123	77
C_2HF_4Cl	HCFC-124	609
CH_3CFCl_2	HCFC-141b	725
CH_3CF_2Cl	HCFC-142b	2310
$CF_3CF_2CHCl_2$	HCFC-225ca	122
CF_2ClCF_2CHClF	HCFC-225cb	595

Table 3

Chemical Name	Common Name	Exchange Value
$CFCl_3$	CFC-11	4750
CF_2Cl_2	CFC-12	10900
$C_2F_3Cl_3$	CFC-113	6130
$C_2F_4Cl_2$	CFC-114	10000
C_2F_5Cl	CFC-115	7370

(b) ALLOWANCES.—

(1) FRAMEWORK REGULATIONS.—The Administrator shall, by regulation, establish an allowance allocation and trading program to phase down the production and the consumption of regulated sub-

stances in accordance with this section. Not later than 270 days after the date of enactment of this Act, the Administrator shall promulgate such final regulations as may be necessary to establish the program required by the preceding sentence.

(2) ALLOCATIONS.—Not later than October 1 of each calendar year following the promulgation of final regulations pursuant to the second sentence of paragraph (1):

(A) The Administrator shall establish a quantity of production allowances and a quantity of consumption allowances. The quantities established pursuant to this paragraph shall not exceed the applicable percentages of the production baseline and of the consumption baseline for the calendar year involved as specified in the following table 4:

Table 4

Calendar year	Percentage of Production Baseline	Percentage of Consumption Baseline
through 2023	90%	90%
2024 through 2028	60%	60%
2029 through 2033	30%	30%
2034 through 2035	20%	20%
2036 and subsequent years	15%	15%

(B) The Administrator shall, by regulation, allocate such production allowances and consumption allowances up to the quantities of such allowances established pursuant to this paragraph for the succeeding calendar year. The Administrator may, at the Administrator's discretion, so allocate allowances through a single rulemaking for multiple succeeding calendar years.

(3) PROHIBITION.—Effective January 1 of the calendar year immediately following the issuance of a final regulation pursuant to the second sentence of paragraph (1), it shall be unlawful for a person to do any of the following:

(A) Production of a regulated substance without holding a production allowance that authorizes such production.

(B) Consumption of a regulated substance without holding a consumption allowance that authorizes such consumption.

(C) Holding, using, or transferring any production allowance or consumption allowance allocated under this section, except in accordance with regulations promulgated by the Administrator pursuant to paragraphs (1) and (2).

(4) NATURE OF ALLOWANCES.—An allowance does not constitute a property right. Nothing in this subtitle or in any other provision of law shall be construed to limit the authority of the United States to terminate or limit the authorization for the production or consumption of a regulated substance, as applicable, granted by the allowance.

(5) COMPLIANCE.—For each year listed in table 4, the Administrator shall ensure that the annual quantity of production or consumption in the United States of all regulated substances does not exceed the product obtained by multiplying the production baseline or consumption baseline, as applicable, and the applicable percentage listed in table 4.

(c) TRANSFERS.—The regulations required by subsection (b)(1) shall—

(1) utilize the exchange values for each regulated substance established by or pursuant to section 9202;

(2) ensure that transfers of production allowances and consumption allowances will result in greater total reductions in the annual production or consumption, as applicable, of regulated substances than would occur in that year in the absence of such transfers; and

(3) authorize the transfer of production allowances or consumption allowances among two or more persons only if the transferor and transferee are subject to an enforceable and quantifiable reduction in, respectively, annual production or consumption.

(d) SCHEDULE.—

(1) IN GENERAL.—

(A) REGULATIONS.—Subject to paragraph (3), the Administrator may, in response to a petition submitted to the Administrator in accordance with paragraph (2), promulgate regulations which establish a schedule for phasing down the production and the consumption of regulated substances that is more stringent than set forth in table 4 in subsection (b), if, based on the availability of substitutes for regulated substances, the Administrator determines that such more stringent schedule is practicable, taking into account technological achievability, commercial demands, safety, and other relevant factors, including the quantities of regulated substances available from reclaiming or from prior production or prior import.

(B) UNIFORM APPLICATION.—In any regulations under subparagraph (A), the Adminis-

trator shall apply any more stringent phasedown schedule uniformly to the allocation of production allowances and consumption allowances as provided under subsection (b).

(2) PETITION.—

(A) SUBMISSION.—Any person may petition the Administrator to promulgate regulations under this subsection.

(B) DISPOSITION.—The Administrator shall grant or deny any petition under subparagraph (A) within 270 days after receipt of any such petition.

(C) DENIAL.—If the Administrator denies any such petition, the Administrator shall publish in the Federal Register an explanation of why the petition was denied.

(D) GRANTING.—If the Administrator grants any such petition, the Administrator shall—

(i) propose regulations implementing a more stringent phasedown schedule not later than 270 days after granting the petition; and

(ii) promulgate final regulations implementing a more stringent phasedown

schedule not later than 365 days after proposing such regulations.

(E) PUBLIC AVAILABILITY.—The Administrator shall—

(i) submit for publication in the Federal Register a notice of the availability of each petition received pursuant to this paragraph not later than 60 days after receipt of such petition; and

(ii) shall make each such petition available in full upon request.

(F) REQUIRED SHOWING.—Any petition under subparagraph (A) shall include a showing by the petitioner that there are adequate data to support the petition.

(G) INSUFFICIENT INFORMATION.—If the Administrator determines that data are not adequate to grant or deny the petition, the Administrator shall use any authority available to the Administrator, under any applicable law, to acquire such data.

(3) LIMITATION.—The Administrator may not promulgate a more stringent phasedown schedule under this subsection applicable to any calendar year prior to calendar year 2024.

(e) ESSENTIAL USES.—

(1) PETITION; AUTHORIZATION.—The Administrator may, by regulation, allocate to a person additional production allowances or consumption allowances to authorize the production or consumption, respectively, beginning with calendar year 2034, for a period of up to 5 years, of a regulated substance in an amount up to 10 percent of the quantity of production or consumption of such regulated substance contributed by such person to the production baseline or the consumption baseline, as applicable, if the Administrator finds, based on a petition by such person, that—

(A) such excess production or consumption is exclusively for an application with respect to which no substitute is available during such period, considering technological achievability, commercial demands, safety, and other relevant factors; and

(B) the available supply of such regulated substance, including any quantities of such regulated substance available from reclaiming, prior production, or prior import, and allowances for such regulated substance, are insufficient to accommodate such application.

(2) EXTENSION.—The Administrator may, by regulation, allocate additional production allowances or consumption allowances, for additional periods of up to 5 years, in an amount up to 10 percent of the quantity of production or consumption of the regulated substance contributed by the person involved to the production baseline or the consumption baseline, as applicable, if the Administrator finds, based on a petition by such person, that the criteria described in subparagraphs (A) and (B) of paragraph (1) continue to be satisfied.

(3) EXCEPTION.—The Administrator may allocate production allowances or consumption allowances pursuant to this subsection in amounts that cause the total quantity of production allowances or consumption allowances in a year to exceed the maximum quantity permissible under subsection (b) for that year.

(f) EXPORTS.—

(1) EXPORTS OF EXCESS AMOUNTS.—

(A) IN GENERAL.—Subject to subparagraphs (B) and (C) and paragraph (2), the Administrator may, by regulation, issue additional production allowances for renewable periods of up to 5 years to a person to produce a regu-

lated substance at a facility located in the United States in excess of the amount authorized by the production allowances otherwise held by that person solely for export to, and use in, a foreign country.

(B) PETITION REQUIRED.—Prior to issuing any additional production allowances to a person pursuant to subparagraph (A), the Administrator shall require the person to submit a petition in such manner and containing such information as the Administration may by regulation require.

(C) LIMITATION.—The Administrator shall not issue any production allowances pursuant to subparagraph (A) in amounts that would cause the total quantity of production allowances in a year to exceed the maximum quantity of production allowances permissible under subsection (b) for that year.

(2) PROHIBITED EXPORT FOR CERTAIN COUNTRIES.—Beginning on January 1, 2033, no person subject to the requirements of this subtitle shall export a regulated substance to a foreign country that is not identified by the Administrator as having enacted or otherwise established the same or similar

requirements or otherwise undertaken commitments regarding the production and the consumption of regulated substances as are contained in this subtitle.

SEC. 9205. MANAGEMENT OF REGULATED SUBSTANCES.

(a) SENSE OF CONGRESS.—It is the sense of Congress that the Administrator should provide for a safe hydrofluorocarbon transition by ensuring that heating, ventilation, air conditioning, and refrigeration practitioners are positioned to comply with safe servicing, repair, disposal, or installation procedures.

(b) REGULATIONS.—

(1) IN GENERAL.—Not later than 24 months after the date of enactment of this Act, the Administrator shall, for purposes of maximizing reclaiming, minimizing the release of a regulated substance from equipment, and ensuring the safety of technicians and consumers, promulgate regulations to control, where appropriate, any practice, process, or activity regarding the servicing, repair, disposal, or installation of equipment that involves a regulated substance or a substitute for a regulated substance, including the reclaiming of a regulated substance or a substitute for a regulated substance.

(2) MINIMUM STANDARDS.—The regulations promulgated under paragraph (1) may include, where appropriate, that any such servicing, repair, disposal, or installation be performed by a trained technician meeting minimum standards, as determined by the Administrator.

(c) RECLAIM.—

(1) CONSIDERATION.—The Administrator shall consider the use of any authority available to the Administrator under this subtitle to increase opportunities for the reclaiming of regulated substances.

(2) REQUIREMENT.—Any regulated substance that is recovered shall be reclaimed before such regulated substance is sold or transferred to a new owner, except where such recovered regulated substance is sold or transferred to a new owner solely for the purposes of being reclaimed or destroyed.

(d) COORDINATION.—In promulgating regulations to implement this section, the Administrator may coordinate such regulations with any other regulations promulgated by the Administrator that involve—

(1) the same or similar practice, process, or activity regarding the servicing, repair, disposal, or installation of equipment; or

(2) reclaiming.

(e) INAPPLICABILITY.—Subsections (a) through (d) do not apply with respect to a regulated substance or a substitute for a regulated substance that is contained in a foam.

SEC. 9206. TECHNOLOGY TRANSITIONS.

(a) AUTHORITY.—The Administrator may, by regulation and in accordance with this section, prohibit or restrict, including through a graduated schedule, the use of a regulated substance in a sector or subsector in which such regulated substance is used.

(b) NEGOTIATED RULEMAKING.—The Administrator shall consider negotiating and developing a proposed regulation under this section in accordance with the negotiated rulemaking procedure under subchapter III of chapter 5 of title 5, United States Code (commonly referred to as the ''Negotiated Rulemaking Act of 1990''). If the Administrator decides to proceed with a negotiated rulemaking, the Administrator shall, to the extent the Administrator deems practicable, give priority to completing that rulemaking over completing concurrent non-negotiated rulemakings pursuant to this section. If the Administrator decides not to proceed with a negotiated rulemaking, the Administrator shall include an explanation of such decision in any proposed regulation published pursuant to this section.

(c) PETITION.—

(1) SUBMISSION.—Any person may petition the Administrator to promulgate regulations under this section to prohibit or restrict the use of a regulated substance in a sector or subsector.

(2) DISPOSITION.—The Administrator shall grant or deny a petition received pursuant to paragraph (1) not later than 180 days after receipt of such petition.

(3) DENIAL.—If the Administrator denies a petition received pursuant to paragraph (1), the Administrator shall publish in the Federal Register an explanation of the Administrator's decision.

(4) GRANTING.—If the Administrator grants a petition received pursuant to paragraph (1), the Administrator shall—

(A) propose regulations prohibiting or restricting the use of the regulated substance in the sector or subsector under subsection (a) not later than 270 days after granting such petition; and

(B) promulgate final regulations prohibiting or restricting the use of the regulated substance in the sector or subsector under sub-

section (a) not later than 365 days after proposing such regulations.

(5) PUBLIC AVAILABILITY.—The Administrator shall—

(A) submit for publication in the Federal Register a notice of the availability of each petition received pursuant to this subsection not later than 60 days after receipt of such petition; and

(B) shall make each such petition available in full upon request.

(d) CRITERIA.—In promulgating regulations under this section, the Administrator shall consider—

(1) promoting and supporting domestic economic development;

(2) maximizing protections for human health and the environment;

(3) minimizing costs for the production, use, and reclaiming of regulated substances;

(4) maximizing flexibility for the recovery, reclaiming, and re-use of regulated substances;

(5) ensuring consumer safety;

(6) the availability of substitutes for regulated substances, taking into account technological achievability, commercial demands, safety, and other

relevant factors, including lead times for equipment conversion; and

(7) minimizing any costs to consumers.

(e) EVALUATION.—For purposes of this subtitle, the Administrator shall—

(1) on an ongoing basis, evaluate the availability of substitutes for regulated substances in a sector or subsector, taking into account technological achievability, commercial demands, safety, and other relevant factors, including lead times for equipment conversion; and

(2) maintain a public clearinghouse of such substitutes by sector and subsector, as applicable.

(f) COORDINATION.—In promulgating regulations to prohibit or restrict the use of a regulated substance in a sector or subsector under this section, the Administrator may coordinate such regulations with any other regulations pertaining to currently or potentially available substitutes for regulated substances.

SEC. 9207. RULEMAKING AUTHORITY.

(a) RULEMAKINGS.—The Administrator may promulgate such regulations as are necessary to carry out the functions of the Administrator under this subtitle.

(b) DELEGATION.—The Administrator may delegate to any officer or employee of the Environmental Protection

Agency such of the powers and duties of the Administrator under this subtitle as the Administrator determines to be appropriate.

(c) REQUIREMENTS.—In exercising any requirement or authority in this subtitle to act by regulation or to promulgate regulations, the Administrator shall comply with the requirements of section 307(d) of the Clean Air Act (42 U.S.C. 7607(d)).

SEC. 9208. RELATIONSHIP TO OTHER LAWS.

Sections 113, 114, 304, and 307 of the Clean Air Act (42 U.S.C. 7413, 7414, 7604, 7607) shall apply to this subtitle and any regulations promulgated by the Administrator pursuant to this subtitle as though this subtitle were included in title VI of the Clean Air Act (42 U.S.C. 7671 et seq.).

Subtitle C—Clean Industrial Technology

SEC. 9301. PURPOSE.

The purpose of this subtitle and the amendments made by this subtitle is to encourage the development and evaluation of innovative technologies aimed at increasing—

(1) the technological and economic competitiveness of industry and manufacturing in the United States; and

(2) the emissions reduction of nonpower industrial sectors.

SEC. 9302. INDUSTRIAL EMISSIONS REDUCTION TECHNOLOGY DEVELOPMENT PROGRAM.

(a) IN GENERAL.—Subtitle D of title IV of the Energy Independence and Security Act of 2007, as amended by this Act, is further amended by adding at the end the following:

"SEC. 455. INDUSTRIAL EMISSIONS REDUCTION TECHNOLOGY DEVELOPMENT PROGRAM.

''(a) DEFINITIONS.—In this section:

''(1) DIRECTOR.—The term 'Director' means the Director of the Office of Science and Technology Policy.

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

''(A) a scientist or other individual with knowledge and expertise in emissions reduction;

''(B) an institution of higher education;

''(C) a nongovernmental organization;

''(D) a National Laboratory;

''(E) a private entity; and

''(F) a partnership or consortium of 2 or more entities described in subparagraphs (B) through (E).

''(3) EMISSIONS REDUCTION.—

''(A) IN GENERAL.—The term 'emissions reduction' means the reduction, to the maximum extent practicable, of net nonwater greenhouse gas emissions to the atmosphere by energy services and industrial processes.

''(B) EXCLUSION.—The term 'emissions reduction' does not include the elimination of carbon embodied in the principal products of industrial manufacturing.

''(4) INSTITUTION OF HIGHER EDUCATION.—The term 'institution of higher education' has the meaning given the term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

''(5) PROGRAM.—The term 'program' means the program established under subsection (b)(1).

''(6) CRITICAL MATERIAL OR MINERAL.—The term 'critical material or mineral' means a material or mineral that serves an essential function in the manufacturing of a product and has a high risk of a supply disruption, such that a shortage of such a material or mineral would have significant consequences for United States economic or national security.

''(b) INDUSTRIAL EMISSIONS REDUCTION TECHNOLOGY DEVELOPMENT PROGRAM.—

''(1) IN GENERAL.—Not later than 1 year after the date of enactment of this section, the Secretary, in coordination with the Director and in consultation with the heads of relevant Federal agencies, National Laboratories, industry, and institutions of higher education, shall establish a crosscutting research, development, and demonstration program to further the development and commercial application of innovative industrial emissions reduction technologies that—

''(A) increase the technological and economic competitiveness of industry and manufacturing in the United States; and

''(B) achieve emissions reduction in nonpower industrial sectors.

''(2) COORDINATION.—In carrying out the program, the Secretary shall, to the maximum extent practicable—

''(A) coordinate with each relevant office in the Department and any other Federal agency;

''(B) coordinate and collaborate with the Industrial Technology Innovation Advisory Committee established under section 456; and

''(C) coordinate with the energy-intensive industries program established under section 452.

''(3) LEVERAGE OF EXISTING RESOURCES.—In carrying out the program, the Secretary shall leverage, to the maximum extent practicable—

''(A) existing resources and programs of the Department and other relevant Federal agencies; and

''(B) public-private partnerships.

''(c) FOCUS AREAS.—The program shall focus on, to the maximum extent practicable—

''(1) industrial production processes, including technologies and processes that—

''(A) achieve emissions reduction in high-emissions industrial materials production processes, including production processes for iron, steel, steel mill products, aluminum, cement, concrete, glass, pulp, paper, and industrial ceramics;

''(B) achieve emissions reduction in medium- and high-temperature heat generation, including—

''(i) through electrification of heating processes;

"(ii) through renewable heat generation technology;

"(iii) through combined heat and power; and

"(iv) by switching to alternative fuels, including hydrogen;

"(C) achieve emissions reduction in chemical production processes;

"(D) leverage smart manufacturing technologies and principles, digital manufacturing technologies, and advanced data analytics to develop advanced technologies and practices in information, automation, monitoring, computation, sensing, modeling, and networking that—

"(i) simulate manufacturing production lines;

"(ii) monitor and communicate production line status;

"(iii) manage and optimize energy productivity and cost throughout production; and

"(iv) model, simulate, and optimize the energy efficiency of manufacturing processes;

''(E) leverage the principles of sustainable manufacturing and sustainable chemistry to minimize the negative environmental impacts of manufacturing while conserving energy and resources, including—

''(i) by designing products that enable reuse, refurbishment, remanufacturing, and recycling;

''(ii) by minimizing waste from industrial processes; and

''(iii) by reducing resource intensity; and

''(F) increase the energy efficiency of industrial processes;

''(2) alternative materials that produce fewer emissions during production and result in fewer emissions during use, including—

''(A) high-performance lightweight materials; and

''(B) substitutions for critical materials and minerals;

''(3) development of net-zero emissions liquid and gaseous fuels;

''(4) emissions reduction in shipping, aviation, and long distance transportation, including through the use of alternative fuels;

''(5) carbon capture technologies for industrial processes;

''(6) high-performance computing to develop advanced materials and manufacturing processes contributing to the focus areas described in paragraphs (1) through (5), including—

''(A) modeling, simulation, and optimization to design energy efficient and sustainable products; and

''(B) the use of digital prototyping and additive manufacturing to enhance product design;

''(7) other technologies that achieve net-zero emissions in nonpower industrial sectors as determined by Secretary in coordination with the Director;

''(8) incorporation of sustainable and green chemistry and engineering principles, practices, and methodologies, as the Secretary determines appropriate; and

''(9) other research or technology areas identified in the Emissions Reduction Roadmap authorized in section 456.

''(d) GRANTS, CONTRACTS, COOPERATIVE AGREEMENTS, AND DEMONSTRATION PROJECTS.—

''(1) GRANTS.—In carrying out the program, the Secretary shall award grants on a competitive basis to eligible entities for projects that the Secretary determines would best achieve the goals of the program.

''(2) CONTRACTS AND COOPERATIVE AGREEMENTS.—In carrying out the program, the Secretary may enter into contracts and cooperative agreements with eligible entities and Federal agencies for projects that the Secretary determines would further the purposes of the program.

''(3) DEMONSTRATION PROJECTS.—In supporting technologies developed under this section, the Secretary shall fund demonstration projects that test and validate technologies described in subsection (c).

''(4) COST SHARING.—In awarding funds under this section, the Secretary shall require cost sharing in accordance with section 988 of the Energy Policy Act of 2005 (42 U.S.C. 16352).

''(e) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary to carry out the demonstration projects authorized in subsection (d)(3)—

''(1) $20,000,000 for fiscal year 2021;

''(2) $80,000,000 for fiscal year 2022;

''(3) $100,000,000 for fiscal year 2023;

''(4) $150,000,000 for fiscal year 2024; and

''(5) $150,000,000 for fiscal year 2025.

''(f) COORDINATION.—The Secretary shall carry out the activities authorized in this section in accordance with section 203 of the Department of Energy Research and Innovation Act (42 U.S.C. 18631).''.

(b) TECHNICAL AMENDMENT.—The table of contents of the Energy Independence and Security Act of 2007 (Public Law 110–140; 121 Stat. 1494) is amended by inserting after the item relating to section 454 (as added by this Act) the following:

''Sec. 455. Industrial emissions reduction technology development program.''.

SEC. 9303. INDUSTRIAL TECHNOLOGY INNOVATION ADVISORY COMMITTEE.

(a) IN GENERAL.—Subtitle D of title IV of the Energy Independence and Security Act of 2007, as amended by this Act, is further amended by adding at the end the following:

"SEC. 456. INDUSTRIAL TECHNOLOGY INNOVATION ADVISORY COMMITTEE.

"(a) DEFINITIONS.—In this section:

"(1) COMMITTEE.—The term 'Committee' means the Industrial Technology Innovation Advisory Committee established under subsection (b).

"(2) DIRECTOR.—The term 'Director' means the Director of the Office of Science and Technology Policy.

"(3) EMISSIONS REDUCTION.—The term 'emissions reduction' has the meaning given the term in section 455(a).

"(4) PROGRAM.—The term 'program' means the industrial emissions reduction technology development program established under section 455(b)(1).

"(b) ESTABLISHMENT.—Not later than 180 days after the date of enactment of this section, the Secretary, in coordination with the Director, shall establish an advisory committee, to be known as the 'Industrial Technology Innovation Advisory Committee'.

"(c) MEMBERSHIP.—

"(1) APPOINTMENT.—The Committee shall be comprised of not fewer than 15 members, who shall be appointed by the Secretary, in coordination with the Director.

''(2) REPRESENTATION.—Members appointed pursuant to paragraph (1) shall include—

''(A) not less than 1 representative of each relevant Federal agency, as determined by the Secretary;

''(B) not less than 2 representatives of labor groups;

''(C) not less than 3 representatives of the research community, which shall include academia and National Laboratories;

''(D) not less than 2 representatives of nongovernmental organizations;

''(E) not less than 6 representatives of industry, the collective expertise of which shall cover every focus area described in section 455(c);

''(F) not less than 1 representative of a State government; and

''(G) any other individual whom the Secretary, in coordination with the Director, determines to be necessary to ensure that the Committee is comprised of a diverse group of representatives of industry, academia, independent researchers, and public and private entities.

''(3) CHAIR.—The Secretary shall designate a member of the Committee to serve as Chair.

''(d) DUTIES.—

''(1) IN GENERAL.—The Committee shall—

''(A) in consultation with the Secretary and the Director, develop the missions and goals of the program, which shall be consistent with the purposes of the program described in section 455(b)(1);

''(B) advise the Secretary and the Director with respect to the program—

''(i) by identifying and evaluating any technologies being developed by the private sector or other Federal agencies relating to the focus areas described in section 455(c);

''(ii) by identifying technology gaps in the private sector in those focus areas, and making recommendations to address those gaps;

''(iii) by surveying and analyzing factors that prevent the adoption of emissions reduction technologies by the private sector; and

''(iv) by recommending technology screening criteria for technology developed

under the program to encourage adoption of the technology by the private sector; and

''(C) develop the roadmap described in paragraph (2).

''(2) EMISSIONS REDUCTION ROADMAP.—

''(A) PURPOSE.—The purpose of the roadmap developed under paragraph (1)(C) is to set forth a plan for achieving the goals of the program established in section 455(b)(1), including for the focus areas described in section 455(c).

''(B) CONTENTS.—The roadmap developed under paragraph (1)(C) shall—

''(i) specify near-term and long-term qualitative and quantitative objectives relating to each focus area described in section 455(c), including research, development, demonstration, and commercial application objectives;

''(ii) leverage existing roadmaps relevant to the program in section 455(b)(1) and the focus areas in section 455(c);

''(iii) specify the anticipated timeframe for achieving the objectives specified under clause (i);

"(iv) include plans for developing emissions reduction technologies that are globally cost-competitive, including in developing economies; and

"(v) identify the appropriate role for investment by the Federal Government, in coordination with the private sector, to achieve the objectives specified under clause (i).

"(e) MEETINGS.—

"(1) FREQUENCY.—The Committee shall meet not less frequently than 2 times per year, at the call of the Chair.

"(2) INITIAL MEETING.—Not later than 30 days after the date on which the members are appointed under subsection (b), the Committee shall hold its first meeting.

"(f) COMMITTEE REPORT.—

"(1) IN GENERAL.—Not later than 2 years after the date of enactment of this section, and not less frequently than once every 3 years thereafter, the Committee shall submit to the Secretary a report on the progress of achieving the purposes of the program.

''(2) CONTENTS.—The report under paragraph (1) shall include—

''(A) a description of any technology innovation opportunities identified by the Committee;

''(B) a description of any technology gaps identified by the Committee under subsection (d)(1)(B)(ii);

''(C) a review of the management, technology screening, coordination, and industry utility of the program;

''(D) an evaluation of the progress of the program and the research, development, and demonstration activities funded under the program;

''(E) any recommended changes to the focus areas of the program described in section 455(c);

''(F) a description of the manner in which the Committee has carried out the duties described in subsection (d)(1) and any relevant findings as a result of carrying out those duties;

''(G) the roadmap developed by the Committee under subsection (d)(1)(C);

''(H) the progress made in achieving the goals set out in that roadmap;

''(I) an assessment of the extent to which progress has been made under the program in developing commercial, cost-competitive technologies in each focus area described in section 455(c); and

''(J) an assessment of the effectiveness of the program in coordinating efforts within the Department and with other Federal agencies to achieve the purposes of the program.

''(g) REPORT TO CONGRESS.—Not later than 60 days after receiving a report from the Committee under subsection (f), the Secretary shall submit a copy of that report to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

''(h) APPLICABILITY OF FEDERAL ADVISORY COMMITTEE ACT.—Except as otherwise provided in this section, the Federal Advisory Committee Act (5 U.S.C. App.) shall apply to the Committee.''.

(b) TECHNICAL AMENDMENT.—The table of contents of the Energy Independence and Security Act of 2007 (Public Law 110–140; 121 Stat. 1494) is amended by in-

serting after the item relating to section 455 (as added by this Act) the following:

''Sec. 456. Industrial Technology Innovation Advisory Committee.''.

SEC. 9304. TECHNICAL ASSISTANCE PROGRAM TO IMPLEMENT INDUSTRIAL EMISSIONS REDUCTION.

(a) IN GENERAL.—Subtitle D of title IV of the Energy Independence and Security Act of 2007, as amended by this Act, is further amended by adding at the end the following:

''SEC. 457. TECHNICAL ASSISTANCE PROGRAM TO IMPLEMENT INDUSTRIAL EMISSIONS REDUCTION.

''(a) DEFINITIONS.—In this section:

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

''(A) a State;

''(B) a unit of local government;

''(C) a territory or possession of the United States;

''(D) a relevant State or local office, including an energy office;

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

''(F) an institution of higher education;

''(G) a private entity; and

''(H) a trade association or technical society.

''(2) EMISSIONS REDUCTION.—The term 'emissions reduction' has the meaning given the term in section 455(a).

''(3) INSTITUTION OF HIGHER EDUCATION.—The term 'institution of higher education' has the meaning given the term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

''(4) PROGRAM.—The term 'program' means the program established under subsection (b).

''(b) ESTABLISHMENT.—Not later than one year after the date of enactment of this section, the Secretary shall establish a program to provide technical assistance to eligible entities to promote the commercial application of emission reduction technologies developed through the program established in section 455(b).

''(c) APPLICATIONS.—

''(1) APPLICATION PROCESS.—The Secretary shall seek applications for technical assistance under the program on a periodic basis, but not less frequently than once every 12 months.

''(2) PRIORITIES.—In selecting eligible entities for technical assistance under the program, the Secretary shall give priority to an eligible entity—

''(A) carrying out a commercial application of technology that has the greatest potential for

emissions reduction in nonpower industrial sectors;

"(B) located in a State that has historically relied on industrial sectors for a substantial portion of the State economy, as determined by the Secretary, taking into account employment data, per capita income, and other indicators of economic output in the State; or

"(C) located in a State that has experienced significant decline in the economic contribution of industry to the State.".

(b) TECHNICAL AMENDMENT.—The table of contents of the Energy Independence and Security Act of 2007 (Public Law 110–140; 121 Stat. 1494) is amended by inserting after the item relating to section 456 (as added by this Act) the following:

"Sec. 457. Technical assistance program to implement industrial emissions reduction.".

SEC. 9305. COORDINATION OF RESEARCH AND DEVELOPMENT OF ENERGY EFFICIENT TECHNOLOGIES FOR INDUSTRY.

Section 6(a) of the American Energy Manufacturing Technical Corrections Act (42 U.S.C. 6351(a)) is amended—

(1) by striking ''Industrial Technologies Program'' each place it appears and inserting ''Advanced Manufacturing Office''; and

(2) in the matter preceding paragraph (1), by striking ''Office of Energy'' and all that follows through ''Office of Science'' and inserting ''Department of Energy''.

Subtitle D—Combined Heat and Power Support

SEC. 9401. CHP TECHNICAL ASSISTANCE PARTNERSHIP PROGRAM.

(a) IN GENERAL.—Section 375 of the Energy Policy and Conservation Act (42 U.S.C. 6345) is amended to read as follows:

''SEC. 375. CHP TECHNICAL ASSISTANCE PARTNERSHIP PROGRAM.

''(a) RENAMING.—

''(1) IN GENERAL.—The Clean Energy Application Centers of the Department of Energy are redesignated as the CHP Technical Assistance Partnership Program (referred to in this section as the 'Program').

''(2) PROGRAM DESCRIPTION.—The Program shall consist of—

''(A) the 10 regional CHP Technical Assistance Partnerships in existence on the date of enactment of the Clean Economy Jobs and Innovation Act;

''(B) such other regional CHP Technical Assistance Partnerships as the Secretary may establish; and

''(C) any supporting technical activities under the Technical Partnership Program of the Advanced Manufacturing Office.

''(3) REFERENCES.—Any reference in any law, rule, regulation, or publication to a Combined Heat and Power Application Center or a Clean Energy Application Center shall be deemed to be a reference to the Program.

''(b) CHP TECHNICAL ASSISTANCE PARTNERSHIP PROGRAM.—

''(1) IN GENERAL.—The Program shall—

''(A) operate programs to encourage deployment of combined heat and power, waste heat to power, and efficient district energy (collectively referred to in this subsection as 'CHP') technologies by providing education and outreach to—

"(i) building, industrial, and electric and natural gas utility professionals;

"(ii) State and local policymakers; and

"(iii) other individuals and organizations with an interest in efficient energy use, local or opportunity fuel use, resiliency, or energy security, microgrids, and district energy; and

"(B) provide project specific support to building and industrial professionals through economic and engineering assessments and advisory activities.

"(2) FUNDING FOR CERTAIN ACTIVITIES.—

"(A) IN GENERAL.—The Program shall make funds available to institutions of higher education, research centers, and other appropriate institutions to ensure the continued operations and effectiveness of the regional CHP Technical Assistance Partnerships.

"(B) USE OF FUNDS.—Funds made available under subparagraph (A) may be used—

"(i) to research, develop, and distribute informational materials relevant to manufacturers, commercial buildings, insti-

tutional facilities, and Federal sites, including continued support of the mission goals of the Department of Defense, on CHP and microgrid technologies, including continuation and updating of—

"(I) the CHP installation database;

"(II) CHP technology potential analyses;

"(III) State CHP resource pages; and

"(IV) CHP Technical Assistance Partnerships websites;

"(ii) to research, develop, and conduct target market workshops, reports, seminars, internet programs, CHP resiliency resources, and other activities to provide education to end users, regulators, and stakeholders in a manner that leads to the deployment of CHP technologies;

"(iii) to provide or coordinate onsite assessments for sites and enterprises that may consider deployment of CHP technology, including the potential use of biomass CHP systems;

"(iv) to perform market research to identify high profile candidates for deployment of CHP technologies, hybrid renewable-CHP technologies, biomass CHP, microgrids, and clean energy;

"(v) to provide nonbiased engineering support to sites considering deployment of CHP technologies;

"(vi) to assist organizations and communities developing clean energy technologies and policies in overcoming barriers to deployment; and

"(vii) to assist companies, communities, and organizations with field validation and performance evaluations of CHP and other clean energy technologies implemented.

"(C) DURATION.—The Program shall make funds available under subparagraph (A) for a period of 5 years.

"(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section $12,000,000 for each of fiscal years 2021 through 2025.".

(b) CONFORMING AMENDMENT.—The table of contents of the Energy Policy and Conservation Act is amend-

ed by striking the item relating to section 375 and inserting the following:

"375. CHP Technical Assistance Partnership Program.".

Subtitle E—Title XVII Loan Program Reform

SEC. 9501. LOAN PROGRAM OFFICE TITLE XVII REFORM.

(a) TERMS AND CONDITIONS.—Section 1702 of the Energy Policy Act of 2005 (42 U.S.C. 16512) is amended—

(1) by amending subsection (b) to read as follows:

"(b) SPECIFIC APPROPRIATION OR CONTRIBUTION.—

"(1) IN GENERAL.—Except as provided in paragraph (2), the cost of a guarantee shall be paid by the Secretary using an appropriation made for the cost of the guarantee, subject to the availability of such an appropriation.

"(2) INSUFFICIENT APPROPRIATIONS.—If sufficient appropriated funds to pay the cost of a guarantee are not available, then the guarantee shall not be made unless—

"(A) the Secretary has received from the borrower a payment in full for the cost of the guarantee and deposited the payment into the Treasury; or

''(B) a combination of one or more appropriations and one or more payments from the borrower under this subsection has been made that is sufficient to cover the cost of the guarantee.'';

(2) in subsection (h)—

(A) by amending paragraph (1) to read as follows:

''(1) IN GENERAL.—The Secretary shall charge, and collect on or after the date of the financial close of an obligation, a fee for a guarantee in an amount that the Secretary determines is sufficient to cover applicable administrative expenses (including any costs associated with third-party consultants engaged by the Secretary).''; and

(B) by adding at the following:

''(3) REDUCTION IN FEE AMOUNT.—Notwithstanding paragraph (1) and subject to the availability of appropriations, the Secretary may reduce the amount of a fee for a guarantee under this subsection.''; and

(3) by adding at the end the following:

''(l) APPLICATION STATUS.—

''(1) REQUEST.—If the Secretary does not make a final decision on an application for a guar-

antee under this title by the date that is 180 days after receipt of the application by the Secretary, the applicant may request, on or after that date and not more than once every 60 days thereafter until a final decision is made, that the Secretary provide to the applicant a response described in paragraph (2).

''(2) RESPONSE.—Not later than 10 days after receiving a request from an applicant under paragraph (1), the Secretary shall provide to the applicant a response that includes—

''(A) a description of the current status of review of the application;

''(B) a summary of any factors that are delaying a final decision on the application, a list of what items are required in order to reach a final decision, citations to authorities stating the reasons why such items are required, and a list of actions the applicant can take to expedite the process; and

''(C) an estimate of when a final decision on the application will be made.

''(m) OUTREACH.—In carrying out this title, the Secretary shall—

''(1) provide assistance with the completion of applications for a guarantee under this title;

''(2) conduct outreach, including through conferences and online programs, to disseminate information to potential applicants; and

''(3) conduct outreach to encourage participation of supporting finance institutions and private lenders in eligible projects.

''(n) COORDINATION.—In carrying out this title, to the extent consistent with applicable law, the Secretary shall collaborate, coordinate, and share information with relevant offices within the Department.

''(o) REPORT.—Not later than 2 years after the date of the enactment of this subsection and every 3 years thereafter, the Secretary shall submit to Congress a report on the status of projects receiving guarantees under this title, including—

''(1) a list of such projects, including the guarantee amount, construction status, and financing partners of each such project;

''(2) the status of each such project's loan repayment, including interest paid and future repayment projections;

''(3) estimate of the greenhouse gas emissions avoided from each such project;

''(4) data regarding the number of direct and indirect jobs retained, restored, or created by such projects;

''(5) the number of new projects projected to receive a guarantee under this title during the next 2 years and the aggregate guarantee amount; and

''(6) any other metrics the Secretary finds appropriate.''.

(b) STATE LOAN ELIGIBILITY.—

(1) DEFINITIONS.—Section 1701 of the Energy Policy Act of 2005 (42 U.S.C. 16511) is amended by adding at the end the following:

''(6) INDIAN TRIBE, NATIVE CORPORATION, TRIBAL ENERGY DEVELOPMENT ORGANIZATION.—The terms 'Indian tribe', 'Native Corporation', and 'tribal energy development organization' have the meaning given such terms in section 2601 of the Energy Policy Act of 1992 (25 U.S.C. 3501).

''(7) STATE.—The term 'State' has the meaning given the term in section 202 of the Energy Conservation and Production Act (42 U.S.C. 6802).

''(8) STATE ENERGY FINANCING INSTITUTION.—

''(A) IN GENERAL.—The term 'State energy financing institution' means a quasi-inde-

pendent entity or an entity within a State agency or financing authority established by a State that may—

''(i) provide financing support or credit enhancements, including loan guarantees and loan loss reserves, for eligible projects; and

''(ii) create liquid markets for eligible projects, including warehousing and securitization, or take other steps to reduce financial barriers to the deployment of existing and new eligible projects.

''(B) INCLUSION.—The term 'State energy financing institution' includes an entity or organization established to achieve the purposes described in clauses (i) and (ii) of subparagraph (A) by an Indian tribe, Native Corporation, or tribal energy development organization.''.

(2) TERMS AND CONDITIONS.—Section 1702 of the Energy Policy Act of 2005 (42 U.S.C. 16512) is further amended—

(A) in subsection (a), by inserting '', including projects receiving financial support or credit enhancements from a State energy financing institution,'' after ''for projects'';

(B) in subsection (d)(1), by inserting ", including a guarantee for a project receiving financial support or credit enhancements from a State energy financing institution," after "No guarantee"; and

(C) by adding at the end the following:

"(p) STATE ENERGY FINANCING INSTITUTIONS.—

"(1) PARTNERSHIPS AUTHORIZED.—State energy financing institutions providing financial support or credit enhancements for eligible projects may enter into partnerships with private entities, Indian tribes, Native Corporations, and tribal energy development organizations.

"(2) PROHIBITION ON USE OF APPROPRIATED FUNDS.—Amounts appropriated to the Department before the date of enactment of this subsection shall not be available to be used for the cost of guarantees made to State energy financing institutions.".

(c) PROJECT ELIGIBILITY EXPANSION.—

(1) IN GENERAL.—The Energy Policy Act of 2005 is amended by adding after section 1703 the following new section:

"SEC. 1703A. OTHER ELIGIBLE PROJECTS.

"(a) IN GENERAL.—The Secretary may make guarantees under this section only for projects that—

''(1) avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases; and

''(2) employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued, including projects that employ—

''(A) a system of technologies that combine existing technologies in an innovative manner;

''(B) elements of commercial technologies in combination with new or significantly improved technologies; or

''(C) new and innovative technologies developed outside the energy sector that enable modernization of existing energy infrastructure and systems.

''(b) CATEGORIES.—Projects from the following categories shall be eligible for a guarantee under this section:

''(1) Advanced nuclear energy facilities, including manufacturing and deployment of nuclear supply components for advanced nuclear reactors.

''(2) Carbon capture, utilization, and sequestration practices and technologies, including—

''(A) agricultural and forestry practices that store and sequester carbon; and

''(B) synthetic technologies to remove carbon from the air and oceans.

''(3) Energy storage technologies for residential, industrial, transportation, and power generation applications.

''(4) Technologies and systems for reducing emissions of greenhouse gases with high global warming potential, including for reducing methane leakage from natural gas transmission and distribution infrastructure.

''(5) Application of technologies, including data analytics, artificial intelligence, and other software to improve the energy efficiency, operations, and management of energy infrastructure, including electric grid operations.

''(6) Energy-water use efficiency in water resources infrastructure and water-using technologies.

''(7) Technologies for improving the resilience or reliability of existing energy infrastructure, including technologies that incorporate energy storage and grid modernization initiatives or improve the cybersecurity of energy technologies.

''(8) Technologies or processes for reducing greenhouse gas emissions from industrial applications, including iron, steel, cement, and ammonia

production, hydrogen production, and generation of high-temperature heat.

''(9) Categories of projects and projects described in section 1703.

''(c) REGIONAL VARIATION.—Notwithstanding subsection (a)(2), the Secretary may, to account for regional variation in deployment of technology, make guarantees under this section for up to 6 projects that employ the same or similar technology as another project, provided no more than 2 projects that use the same or a similar technology are located in the same region of the United States.

''(d) STATE ENERGY FINANCING INSTITUTIONS.—Notwithstanding subsection (a), the Secretary may use up to 25 percent of authority provided for commitments to guarantee loans under this title for projects—

''(1) that are receiving financial support or credit enhancements from a State energy financing institution; and

''(2) that meet the requirements of paragraph (1) of subsection (a), but do not meet the requirements of paragraph (2) of subsection (a).

''(e) EMISSION LEVELS AND TAX CREDITS.—Subsections (d) and (e) of section 1703 shall apply with respect to projects receiving guarantees under this section.''.

(2) APPLICABILITY.—Section 1702 of the Energy Policy Act of 2005 (42 U.S.C. 16512) is further amended by adding at the end the following:

''(q) APPLICABILITY.—The Secretary shall not, for a period of 10 years after the date of enactment of this subsection, enter into a loan guarantee agreement for an eligible project—

''(1) under section 1703A; or

''(2) that is receiving financial support or credit enhancements from a State energy financing institution.''.

(3) CONFORMING AMENDMENTS.—

(A) DEFINITION OF ELIGIBLE PROJECTS.—Section 1701(3) of the Energy Policy Act of 2005 (42 U.S.C. 16511(3)) is amended by inserting ''or section 1703A'' after ''section 1703''.

(B) TABLE OF CONTENTS.—The table of contents for the Energy Policy Act of 2005 is amended by inserting after the item relating to section 1703 the following:

''Sec. 1703A. Other eligible projects.''.

SEC. 9502. AUTHORIZATION OF APPROPRIATIONS.

Section 1704 of the Energy Policy Act of 2005 (42 U.S.C. 16514) is amended by adding at the end the following:

''(c) ADMINISTRATIVE AND OTHER EXPENSES.—There are authorized to be appropriated—

''(1) $32,000,000 for each of fiscal years 2021 through 2025 to carry out this title; and

''(2) for fiscal year 2021, in addition to amounts authorized under paragraph (1), $25,000,000, to remain available until expended, for administrative expenses described in section 1702(h)(1) that are not covered by fees collected pursuant to section 1702(h).''.

TITLE X—CRITICAL MATERIALS

SEC. 10101. DEFINITIONS.

In this title:

(1) APPROPRIATE CONGRESSIONAL COMMITTEES.—The term ''appropriate Congressional committees'' means the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation and the Committee on Energy and Natural Resources of the Senate.

(2) CENTER.—The term ''Center'' means the Critical Materials Information Center established under section 10122(a).

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

(4) ENERGY CRITICAL MATERIAL.—The term ''energy critical material'' means any of a class of non-fuel materials that have a high risk of a supply disruption and are critical to one or more existing or new, energy-related technologies such that a substantial supply disruption of such material would significantly inhibit large-scale deployment of technologies that produce, transmit, store, or conserve energy.

(5) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the meaning given such term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(6) PROGRAM.—The term ''program'' means the program authorized in section 10121(a).

(7) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

Subtitle A—Energy Critical Materials

SEC. 10121. ENERGY CRITICAL MATERIALS PROGRAM.

(a) AUTHORIZATION OF PROGRAM.—

(1) IN GENERAL.—The Secretary shall carry out a cross-cutting program of research, development, demonstration, and commercial application to assure the long-term, secure, and sustainable supply

of energy critical materials sufficient to satisfy the national security, economic well-being, public health, and industrial production needs of the United States. This program may be carried out primarily by an Energy Innovation Hub established under section 206 of the Department of Energy Research Coordination Act (42 U.S.C. 18632).

(2) PROGRAM ACTIVITIES.—In carrying out this program, the Secretary shall focus on areas that the private sector by itself is not likely to undertake because of technical and financial uncertainty and support activities to—

(A) identify, develop, and test alternative minerals, metals, and replacement materials that—

(i) can be substituted for energy critical materials and maintain or exceed current performance; or

(ii) enable new component and system design options that lessen the need for energy critical materials;

particularly those alternative materials with existing production sources within the United States and not subject to substantial supply disruptions;

(B) engineer and test diverse applications that—

(i) accelerate recycling and use of recycled energy critical materials;

(ii) use alternative materials; or

(iii) seek to minimize energy critical material content;

(C) develop innovative technologies and practices to diversify commercially viable and sustainable domestic sources of energy critical materials, including technologies for recovery from waste streams, more efficient recovery of coproducts and byproducts, and reduction of energy intensity, environmental impact, and costs of the extraction, production, separation, alloying, and processing of energy critical materials;

(D) improve the understanding of the performance, processing, and adaptability in engineering designs using energy critical materials;

(E) develop advanced theoretical, computational, and experimental tools necessary to support the crosscutting research and development needs of diverse critical materials stakeholders;

(F) ensure that relevant facilities are available and equipped to assist in carrying out the direction of the program;

(G) advance new mapping and analytical technologies and techniques that identify and characterize domestic critical materials resources; and

(H) improve the understanding of energy critical material supply chains, risks from supply disruption, supply restriction, volatility in demand, and ability to substitute.

(3) COORDINATION.—In carrying out the program under subsection (a) the Secretary of Energy shall coordinate and leverage resources and expertise across the Department and from—

(A) Federal agencies;

(B) National Laboratories;

(C) academic institutions;

(D) private sector entities, including small businesses;

(E) nongovernmental organizations; and

(F) other relevant entities or individuals.

(4) EXPANDING PARTICIPATION.—In carrying out the program, the Secretary shall encourage multidisciplinary collaborations of participants, including

opportunities for students and post-doctoral staff at institutions of higher education.

(5) INTERNATIONAL COLLABORATION.—In carrying out the program, the Secretary shall collaborate, to the extent practicable, on activities of mutual interest with the relevant agencies and nongovernmental organizations of foreign countries with interests relating to energy critical materials.

(b) PLAN.—

(1) IN GENERAL.—Within 180 days after the date of enactment of this Act and biennially thereafter, the Secretary shall prepare and submit to the appropriate Congressional committees a plan to carry out the program.

(2) SPECIFIC REQUIREMENTS.—The plan required under paragraph (1) shall include a description of—

(A) the research and development activities to be carried out by the program during the subsequent 2 years;

(B) the expected contributions of the program to the creation of innovative methods and technologies for the efficient and sustainable provision of energy critical materials to the domestic economy;

(C) the expected activities of the program to mitigate the adverse environmental and health impacts of the extraction, processing, manufacturing, use, recovery, and recycling of energy critical materials; and

(D) how the program is promoting the broadest possible participation by academic, industrial, the public, and other contributors.

(3) CONSULTATION.—In preparing each plan under paragraph (1), the Secretary shall consult with appropriate representatives of industry, institutions of higher education, Department of Energy national laboratories, professional and technical societies, other Federal agencies, States, tribes, the public, and other entities, as determined by the Secretary.

(c) COORDINATION AND NONDUPLICATION.—To the maximum extent practicable, the Secretary shall ensure that the activities carried out under this subtitle are coordinated with, and do not unnecessarily duplicate the efforts of, other programs within the Federal Government.

(d) STANDARD OF REVIEW.—Not later than 2 years after the date of the enactment of this Act the Secretary of Energy shall conduct a review of activities carried out under this program described in subsection (a) to deter-

mine the achievement of technical milestones established in subsection (e).

(e) CRITICAL MATERIALS CONSORTIUM.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary of Energy shall establish and operate a Critical Materials Consortium (referred to in this section as the ''Consortium'') for the purpose of supporting the program under subsection (a) by providing, to the maximum extent practicable, a centralized entity for multidisciplinary, collaborative, critical materials research and development.

(2) LEADERSHIP.—If an Energy Innovation Hub, consistent with section 206 of the Department of Energy Research Coordination Act, that is focused on energy critical materials exists on the date of enactment of this Act, then the Secretary shall leverage the personnel and expertise of such a Hub to manage the Consortium for at least a 3 year period following the establishment of the Consortium.

(3) MEMBERSHIP.—The members of the Consortium shall be representatives from relevant Federal agencies, the National Laboratories, institutions of higher education, private sector entities, multi-in-

stitutional collaborations, and other appropriate entities.

(4) ACTIVITIES.—The Consortium shall—

(A) develop and implement a multi-year program plan which includes the determination of technical goals and milestones and prioritizes leveraging of the user facilities, high performance computing capabilities, and expertise of the Department of Energy and the National Laboratories; and

(B) submit an annual report to the Secretary of Energy summarizing the activities of the Consortium which includes an evaluation of the Consortium's role in the achievement of technical milestones determined in subparagraph (A).

(5) DURATION.—The Consortium established under this subsection shall receive support for a period of not more than 5 years, subject to the availability of appropriations.

(6) RENEWAL.—Upon the expiration of any period of support of the Consortium, the Secretary of Energy may renew support for the Consortium, on a merit-reviewed basis, for a period of not more than 5 years.

(7) TERMINATION.—Consistent with the existing authorities of the Department, the Secretary of Energy may terminate the Consortium for cause during the performance period.

(f) CRITICAL MATERIALS AND SUPPLY CHAIN RESEARCH FACILITY.—The Secretary shall support construction of a facility that provides an integrated, rapidly reconfigurable research platform to further enable research and development activities throughout the supply chain for energy critical materials.

(g) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary of Energy $135,000,000 for each of fiscal years 2021 through 2025 to carry out this section.

SEC. 10122. CRITICAL MATERIALS RESEARCH DATABASE AND INFORMATION CENTER.

(a) IN GENERAL.—In carrying out the program established under section 10121, the Secretary, in consultation with the Director of the National Science Foundation shall establish and operate a Critical Materials Information Center to collect, catalogue, disseminate, and archive information on energy critical materials in coordination with the Office of Scientific and Technical Information of the Department of Energy, and support the development of a web-based platform to provide public access to a data-

base of computed information on known and predicted critical materials and related material properties and computational tools in order to—

(1) accelerate breakthroughs in energy critical materials identification and design;

(2) strengthen the foundation for technologies that will enable more sustainable recycling, substitution, use, and recovery and minimize the environmental impacts of methods for extraction, processing, and manufacturing of energy critical materials; and

(3) drive the development of advanced materials for applications that span the Department's missions in energy, environment, and national security.

(b) ACTIVITIES.—In carrying out this section, the Secretary shall—

(1) conduct cooperative research with industry, academia, and other research institutions to facilitate the design of novel materials, including critical materials and substitutes for critical materials;

(2) leverage existing high-performance computing systems to conduct high throughput calculations and develop computing and data mining algorithms for the prediction of material properties, including a focus on critical materials;

(3) leverage and support research in mineralogy and mineral chemistry to enhance the understanding, prediction, and manipulation of critical materials;

(4) assist scientists and engineers in making the fullest possible use of the Department's relevant data holdings, including the scientific and technical data generated by the research and development activities funded under section 1021;

(5) seek and incorporate other information on energy critical materials to enhance the Department's utility for program participants and other users;

(6) manage and make available to researchers and the public accessible, curated, standardized, secure, and privacy protected data sets from the public and private sectors for the purposes of critical materials research and development activities.

(c) COORDINATION.—To carry out this section, the Secretary of Energy shall leverage and ensure the coordination of relevant programs, facilities, and activities across the Department, including the Critical Materials Consortium established under section 10121(e).

(d) SECURITY.—In carrying out the activities authorized by this section, the Secretary of Energy, in consulta-

tion with the Director of the National Science Foundation, shall ensure proper security controls are in place to protect proprietary or sensitive data, as appropriate.

SEC. 10123. CRITICAL MATERIALS INTERAGENCY SUBCOMMITTEE.

(a) IN GENERAL.—The Critical Minerals Subcommittee of the National Science and Technology Council (referred to in this section as the ''Subcommittee''), shall coordinate Federal science and technology efforts to ensure secure, reliable, and environmentally sustainable supplies of critical materials to the United States.

(b) PURPOSES.—the purposes of the Subcommittee shall be—

(1) to advise and assist the National Science and Technology Council, including the Committee on Homeland and National Security, on United States policies, procedures, and plans as it relates to critical materials, including—

(A) Federal research, development, and commercial application efforts to minimize the environmental impacts of methods for extractions, concentration, separation and purification of conventional, secondary, and unconventional sources of critical materials;

(B) efficient use, substitution, and reuse of critical materials;

(C) the critical materials workforce of the United States; and

(D) United States private industry investments in innovation and technology transfer from federally funded science and technology;

(2) to identify emerging opportunities, stimulate international cooperation, and foster the development of secure and reliable supply chains of critical materials and establish scenario modeling systems for supply problems of critical materials and energy critical materials;

(3) to ensure the transparency of information and data related to critical materials; and

(4) to provide recommendations on coordination and collaboration among the research, development, and deployment programs and activities of Federal agencies to promote a secure and reliable supply of critical materials necessary to maintain national security, economic well-being, public health, and industrial production.

(c) RESPONSIBILITIES.—In carrying out paragraphs (1) and (2), the Subcommittee may, taking into account

the findings and recommendations of relevant advisory committees—

(1) provide recommendations on how Federal agencies may improve the topographic, geologic, and geophysical mapping of the United States and improve the discoverability, accessibility, and usability of the resulting and existing data, to the extent permitted by law and subject to appropriate limitation for purposes of privacy and security; assess the progress towards developing critical materials recycling and reprocessing technologies, and technological alternatives to critical materials;

(2) establish a mechanism for the coordination and evaluation of Federal programs with energy critical material needs, including Federal programs involving research and development, in a manner that complements related efforts carried out by the private sector and other domestic and international agencies and organizations;

(3) examine options for accessing and developing critical materials through investment and trade with our allies and partners and provide recommendations;

(4) evaluate and provide recommendations to incentivize the development and use of advances in science and technology in the private industry;

(5) assess the need for and make recommendations to address the challenges the United States critical materials supply chain workforce faces, including aging and retiring personnel and faculty, and foreign competition for United States talent;

(6) develop, and update as necessary, a strategic plan to guide Federal programs and activities to enhance scientific and technical capabilities across critical material supply chains, including a roadmap that identifies key research and development needs and coordinates on-going activities for source diversification, more efficient use, recycling, and substitution for critical materials; as well as cross-cutting mining science, data science techniques, materials science, manufacturing science and engineering, computational modeling, and environmental health and safety research and development; and

(7) assess the need for, and make recommendations concerning, the availability and adequacy of the supply of technically trained personnel necessary for energy critical materials research, development, extraction, and industrial production, with a par-

ticular focus on the problem of attracting and maintaining high-quality professionals for maintaining an adequate supply of energy critical materials; and

(8) report to the appropriate Congressional committees on activities and findings under this section.

Subtitle B—National Materials and Minerals Policy, Research, and Development

SEC. 10141. AMENDMENTS TO NATIONAL MATERIALS AND MINERALS POLICY, RESEARCH AND DEVELOPMENT ACT OF 1980.

(a) PROGRAM PLAN.—Section 5 of the National Materials and Minerals Policy, Research and Development Act of 1980 (30 U.S.C. 1604) is amended—

(1) by striking ''date of enactment of this Act'' each place it appears and inserting ''date of enactment of the Clean Economy Jobs and Innovation Act'';

(2) in subsection (b)(1), by striking ''Federal Coordinating Council for Science, Engineering, and Technology'' and inserting ''National Science and Technology Council'';

(3) in subsection (c)—

(A) in the matter preceding paragraph (1)—

(i) by striking ''the Federal Emergency'' and all that follows through ''Agency, and''; and

(ii) by striking ''appropriate shall'' and inserting ''appropriate, shall'';

(B) by striking paragraph (1);

(C) in paragraph (2), by striking ''in the case'' and all that follows through ''subsection,'';

(D) by redesignating paragraphs (2) and (3) as paragraphs (1) and (2), respectively; and

(E) by amending paragraph (2), as so redesignated, to read as follows:

''(2) assess the adequacy and stability of the supply of materials necessary to maintain national security, economic well-being, public health, and industrial production.'';

(4) by striking subsection (d); and

(5) by redesignating subsections (e) and (f) as subsections (d) and (e), respectively.

(b) POLICY.—Section 3 of the National Materials and Minerals Policy, Research and Development Act of 1980 (30 U.S.C. 1602) is amended—

(1) by striking ''The Congress declares that it'' and inserting ''It''; and

(2) by striking ''The Congress further declares that implementation'' and inserting ''Implementation''.

(c) IMPLEMENTATION.—Section 4 of the National Materials and Minerals Policy, Research and Development Act of 1980 (30 U.S.C. 1603) is amended, in the matter preceding paragraph (1)—

(1) by striking ''For the purpose'' and all that follows through ''declares that the'' and inserting ''The''; and

(2) by striking ''departments and agencies,'' and inserting ''departments and agencies to implement the policy specified in section 3''.

SEC. 10142. CONFORMING REPEAL.

The National Critical Materials Act of 1984 (30 U.S.C. 1801 et seq.) is repealed.

TITLE XI—ENVIRONMENTAL JUSTICE

SEC. 11001. DEFINITIONS.

In this title:

(1) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of the Environmental Protection Agency.

(2) ADVISORY COUNCIL.—The term ''Advisory Council'' means the National Environmental Justice Advisory Council described in section 11009.

(3) AGGRIEVED PERSON.—The term ''aggrieved person'' means a person aggrieved by discrimination on the basis of race, color, or national origin.

(4) CLEARINGHOUSE.—The term ''Clearinghouse'' means the Environmental Justice Clearinghouse established by the Administrator under section 11007.

(5) COMMUNITY OF COLOR.—The term ''community of color'' means any geographically distinct area the population of color of which is higher than the average population of color of the State in which the community is located.

(6) COMMUNITY-BASED SCIENCE.—The term ''community-based science'' means voluntary public participation in the scientific process and the incorporation of data and information generated outside of traditional institutional boundaries to address real-world problems in ways that may include formulating research questions, conducting scientific experiments, collecting and analyzing data, interpreting results, making new discoveries, developing technologies and applications, and solving complex

problems, with an emphasis on the democratization of science and the engagement of diverse people and communities.

(7) DEMONSTRATES.—The term ''demonstrates'' means meets the burdens of going forward with the evidence and of persuasion.

(8) DIRECTOR.—The term ''Director'' means the Director of the National Institute of Environmental Health Sciences.

(9) DISPARATE IMPACT.—The term ''disparate impact'' means an action or practice that, even if appearing neutral, actually has the effect of subjecting persons to discrimination because of their race, color, or national origin.

(10) DISPROPORTIONATE BURDEN OF ADVERSE HUMAN HEALTH OR ENVIRONMENTAL EFFECTS.—The term ''disproportionate burden of adverse human health or environmental effects'' means a situation where there exists higher or more adverse human health or environmental effects on communities of color, low-income communities, and Tribal and indigenous communities.

(11) ENVIRONMENTAL JUSTICE.—The term ''environmental justice'' means the fair treatment and meaningful involvement of all individuals, re-

gardless of race, color, culture, national origin, educational level, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies to ensure that—

(A) populations of color, communities of color, Tribal and indigenous communities, and low-income communities have access to public information and opportunities for meaningful public participation relating to human health and environmental planning, regulations, and enforcement;

(B) Each population of color or community of color, Tribal and indigenous community, or low-income community enjoy the same degree of protection from pollution or other environmental and health hazards; and

(C) the 17 Principles of Environmental Justice written and adopted at the First National People of Color Environmental Leadership Summit held on October 24 through 27, 1991, in Washington, DC, are upheld.

(12) ENVIRONMENTAL JUSTICE COMMUNITY.—The term ''environmental justice community'' means a community with significant representation of com-

munities of color, low-income communities, or Tribal and indigenous communities, that experiences, or is at risk of experiencing higher or more adverse human health or environmental effects.

(13) FAIR TREATMENT.—The term ''fair treatment'' means the conduct of a program, policy, practice or activity by a Federal agency in a manner that ensures that no group of individuals (including racial, ethnic, or socioeconomic groups) experience a disproportionate burden of adverse human health or environmental effects resulting from such program, policy, practice, or activity, as determined through consultation with, and with the meaningful participation of, individuals from the communities affected by a program, policy, practice or activity of a Federal agency.

(14) FEDERAL AGENCY.—The term ''Federal agency'' means—

(A) each Federal agency represented on the Working Group; and

(B) any other Federal agency that carries out a Federal program or activity that substantially affects human health or the environment, as determined by the President.

(15) TRIBAL AND INDIGENOUS COMMUNITY.—The term ''Tribal and indigenous community'' refers to a population of people who are members of—

(A) a federally recognized Indian Tribe;

(B) a State-recognized Indian Tribe;

(C) an Alaska Native or Native Hawaiian community or organization; and

(D) any other community of indigenous people located in a State.

(16) INDIAN TRIBE.—The term ''Indian Tribe'' has the meaning given the term ''Indian tribe'' in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304).

(17) INFRASTRUCTURE.—The term ''infrastructure'' means any system for safe drinking water, sewer collection, solid waste disposal, electricity generation, communication, or transportation access (including highways, airports, marine terminals, rail systems, and residential roads) that is used to effectively and safely support—

(A) housing;

(B) an educational facility;

(C) a medical provider;

(D) a park or recreational facility; or

(E) a local business.

(18) LOCAL GOVERNMENT.—The term ''local government'' means—

(A) a county, municipality, city, town, township, local public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate governmental entity, or agency or instrumentality of a local government; or

(B) an Indian Tribe or authorized Tribal organization, or Alaska Native village or organization, that is not a Tribal Government.

(19) LOW INCOME.—The term ''low income'' means an annual household income equal to, or less than, the greater of—

(A) an amount equal to 80 percent of the median income of the area in which the household is located, as reported by the Department of Housing and Urban Development; and

(B) 200 percent of the Federal poverty line.

(20) LOW-INCOME COMMUNITY.—The term ''low income community'' means any census block

group in which 30 percent or more of the population are individuals with low income.

(21) MEANINGFUL.—The term ''meaningful'', with respect to involvement by the public in a determination by a Federal agency, means that—

(A) potentially affected residents of a community have an appropriate opportunity to participate in decisions regarding a proposed activity that will affect the environment or public health of the community;

(B) the public contribution can influence the determination by the Federal agency;

(C) the concerns of all participants involved are taken into consideration in the decision-making process; and

(D) the Federal agency—

(i) provides to potentially affected members of the public relevant and accurate information regarding the activity potentially affecting the environment or public health of affected members of the public; and

(ii) facilitates the involvement of potentially affected members of the public.

(22) POPULATION.—The term ''population'' means a census block group or series of geographically contiguous blocks representing certain common characteristics, such as (but not limited to) race, ethnicity, national origin, income-level, health disparities, or other public health and socioeconomic attributes.

(23) POPULATION OF COLOR.—The term ''population of color'' means a population of individuals who identify as—

(A) Black;

(B) African American;

(C) Asian;

(D) Pacific Islander;

(E) another non-White race;

(F) Hispanic;

(G) Latino; or

(H) linguistically isolated.

(24) PUBLISH.—The term ''publish'' means to make publicly available in a form that is—

(A) generally accessible, including on the internet and in public libraries; and

(B) accessible for—

(i) individuals who are limited in English proficiency, in accordance with Ex-

ecutive Order No. 13166 (65 Fed. Reg. 50121 (August 16, 2000)); and

(ii) individuals with disabilities.

(25) STATE.—The term ''State'' means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

(26) TRIBAL GOVERNMENT.—The term ''Tribal Government'' means the governing body of an Indian Tribe.

(27) WORKING GROUP.—The term ''Working Group'' means the interagency Federal Working Group on Environmental Justice convened under section 1–102 of Executive Order No. 12898 (42 U.S.C. 4321 note), as amended by Executive Order No. 12948 (60 Fed. Reg. 6381 (January 30, 1995)) and modified by this title.

(28) CLIMATE JUSTICE.—The term ''climate justice'' means the fair treatment and meaningful involvement of all individuals, regardless of race, color, culture, national origin, educational level, or income, with respect to the development, implementation, and enforcement of policies and projects that address climate change, a recognition of the histor-

ical responsibilities for climate change, and a commitment that the people and communities least responsible for climate change, and most vulnerable to the impacts of climate change, do not suffer disproportionately as a result of historical injustice and disinvestment.

(29) NATURAL INFRASTRUCTURE.—The term ''natural infrastructure'' means infrastructure that uses, restores, or emulates natural ecological processes and—

(A) is created through the action of natural physical, geological, biological, and chemical processes over time;

(B) is created by human design, engineering, and construction to emulate or act in concert with natural processes; or

(C) involves the use of plants, soils, and other natural features, including through the creation, restoration, or preservation of vegetated areas using materials appropriate to the region to manage stormwater and runoff, to attenuate flooding and storm surges, and for other related purposes.

SEC. 11002. ENVIRONMENTAL JUSTICE COMMUNITY TECHNICAL ASSISTANCE GRANTS.

(a) IN GENERAL.—The Administrator may award grants to eligible entities to enable such entities to participate in decisions impacting the health and safety of their communities in connection with an actual or potential release of a covered hazardous air pollutant.

(b) TIMING.—

(1) GUIDANCE.—Not later than 12 months after the date of enactment of this section, the Administrator shall publish guidance describing the process for eligible entities to apply for a grant under this section, including the required content and form of applications, the manner in which applications must be submitted, and any applicable deadlines.

(2) FIRST GRANT.—Not later than 180 days after the issuance of guidance under paragraph (1), the Administrator shall award the first grant under this section.

(c) ELIGIBLE ENTITY.—To be eligible for a grant under this section, an applicant shall be a group of individuals who reside in a community that—

(1) is a population of color, a community of color, a Tribal and indigenous community, or a low-income community; and

(2) is in close proximity to the site of an actual or potential release of a covered hazardous air pollutant.

(d) USE OF FUNDS.—An eligible entity receiving a grant under this section shall use the grant to participate in decisions impacting the health and safety of the community involved in connection with an actual or potential release of a covered hazardous air pollutant, including—

(1) interpreting information with regard to the nature of the hazard, cumulative impacts studies, health impacts studies, remedial investigation and feasibility studies, agency decisions, remedial design, and operation and maintenance of necessary monitors; and

(2) performing additional air pollution monitoring.

(e) LIMITATIONS ON AMOUNT; RENEWAL.—

(1) AMOUNT.—

(A) IN GENERAL.—The amount of a grant under this section (excluding any renewals of the grant) may not exceed $50,000 for any grant recipient.

(B) EXCEPTION.—The Administrator may waive the limitation in subparagraph (A) with respect to an applicant in any case where the

Administrator determines that such waiver is necessary for the community involved to obtain the necessary technical assistance.

(2) RENEWAL.—Grants may be renewed for each step in the regulatory, removal, or remediation process in connection with a facility with the potential to release a covered hazardous air pollutant.

(f) DEFINITION OF COVERED HAZARDOUS AIR POLLUTANT.—In this section, the term ''covered hazardous air pollutant'' means a hazardous air pollutant (as defined in section 112 of the Clean Air Act) that—

(1) is listed on the toxics release inventory under section 313(c) of the Emergency Planning and Community Right-To-Know Act of 1986; or

(2) is identified as carcinogenic by an assessment under the Integrated Risk Information System (IRIS) of the Environmental Protection Agency.

SEC. 11003. INTERAGENCY FEDERAL WORKING GROUP ON ENVIRONMENTAL JUSTICE.

(a) IN GENERAL.—Not later than 90 days after the date of enactment of this Act, the Administrator shall convene, as appropriate to carry out this section, the Working Group.

(b) REQUIREMENTS.—

(1) COMPOSITION.—The Working Group shall be comprised of the following (or a designee):

(A) The Secretary of Agriculture.

(B) The Secretary of Commerce.

(C) The Secretary of Defense.

(D) The Secretary of Energy.

(E) The Secretary of Health and Human Services.

(F) The Secretary of Homeland Security.

(G) The Secretary of Housing and Urban Development.

(H) The Secretary of the Interior.

(I) The Secretary of Labor.

(J) The Secretary of Transportation.

(K) The Attorney General.

(L) The Administrator.

(M) The Director of the Office of Environmental Justice.

(N) The Chairman of the Consumer Product Safety Commission.

(O) The Chairperson of the Chemical Safety Board.

(P) The Director of the Office of Management and Budget.

(Q) The Director of the Office of Science and Technology Policy.

(R) The Chair of the Council on Environmental Quality.

(S) The Assistant to the President for Domestic Policy.

(T) The Director of the National Economic Council.

(U) The Chairman of the Council of Economic Advisers.

(V) The Secretary of Education.

(W) The Deputy Assistant to the President for Environmental Policy.

(X) The Director of the National Institutes of Health.

(Y) The Director of the National Park Service.

(Z) The Assistant Secretary of the Bureau of Indian Affairs.

(AA) The Chairperson of the National Environmental Justice Advisory Council.

(BB) Such other Federal officials as the President may designate.

(2) FUNCTIONS.—The Working Group shall—

(A) report to the President through the Chair of the Council on Environmental Quality;

(B) provide guidance to Federal agencies regarding criteria for identifying disproportionately high and adverse human health or environmental effects—

(i) on populations of color, communities of color, Tribal and indigenous communities, and low-income communities; and

(ii) on the basis of race, color, national origin, or income;

(C) coordinate with, provide guidance to, and serve as a clearinghouse for, each Federal agency with respect to the implementation and updating of an environmental justice strategy required under this title, in order to ensure that the administration, interpretation, and enforcement of programs, activities, and policies are carried out in a consistent manner;

(D) assist in coordinating research by, and stimulating cooperation among, the Environmental Protection Agency, the Department of Health and Human Services, the Department of Housing and Urban Development, and other

Federal agencies conducting research or other activities in accordance with this title;

(E) identify, based in part on public recommendations contained in Federal agency progress reports, important areas for Federal agencies to take into consideration and address, as appropriate, in environmental justice strategies and other efforts;

(F) assist in coordinating data collection and maintaining and updating appropriate databases, as required by this title;

(G) examine existing data and studies relating to environmental justice;

(H) hold public meetings and otherwise solicit public participation under paragraph (3); and

(I) develop interagency model projects relating to environmental justice that demonstrate cooperation among Federal agencies.

(3) PUBLIC PARTICIPATION.—The Working Group shall—

(A) hold public meetings or otherwise solicit public participation and community-based science for the purpose of fact-finding with respect to the implementation of this title; and

(B) prepare for public review and publish a summary of any comments and recommendations provided.

(c) JUDICIAL REVIEW AND RIGHTS OF ACTION.—Any person may commence a civil action—

(1) to seek relief from, or to compel, an agency action under this section (including regulations promulgated pursuant to this section); or

(2) otherwise to ensure compliance with this section (including regulations promulgated pursuant to this section).

SEC. 11004. FEDERAL AGENCY ACTIONS TO ADDRESS ENVIRONMENTAL JUSTICE.

(a) FEDERAL AGENCY RESPONSIBILITIES.—

(1) ENVIRONMENTAL JUSTICE MISSION.—To the maximum extent practicable and permitted by applicable law, each Federal agency shall make achieving environmental justice part of the mission of the Federal agency by identifying, addressing, and mitigating disproportionately high and adverse human health or environmental effects of the programs, policies, and activities of the Federal agency on populations of color, communities of color, Tribal and indigenous communities, and low-income communities in the United States (including the terri-

tories and possessions of the United States and the District of Columbia).

(2) NONDISCRIMINATION.—Each Federal agency shall conduct any program, policy, or activity that substantially affects human health or the environment in a manner that ensures that the program, policy, or activity does not have the effect of excluding any individual or group from participation in, denying any individual or group the benefits of, or subjecting any individual or group to discrimination under, the program, policy, or activity because of race, color, or national origin.

(3) STRATEGIES.—

(A) AGENCYWIDE STRATEGIES.—Each Federal agency shall implement and update, not less frequently than annually, an agencywide environmental justice strategy that identifies and includes strategies to address disproportionally high and adverse human health or environmental effects of the programs, policies, spending, and other activities of the Federal agency with respect to populations of color, communities of color, Tribal and indigenous communities, and low-income communities, including, as appropriate for the mission

of the Federal agency, with respect to the following areas:

(i) Implementation of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(ii) Implementation of title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) (including regulations promulgated pursuant to that title).

(iii) Implementation of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.).

(iv) Impacts from the lack of infrastructure, or from deteriorated infrastructure.

(v) Impacts from land use.

(vi) Impacts from climate change.

(vii) Impacts from commercial transportation.

(viii) Strategies for the implementation of agency programs, policies, and activities to provide for—

(I) equal protection from environmental and health hazards for populations of color, communities of color,

Tribal and indigenous communities, and low-income communities;

(II) equal opportunity for public involvement and due process to populations of color, communities of color, Tribal and indigenous communities, and low-income communities in the development, implementation, and enforcement of agency programs, policies, and activities;

(III) improved technical assistance and access to information to populations of color, communities of color, Tribal and indigenous communities, and low-income communities regarding the impacts of agency programs, policies, and activities on environmental justice communities;

(IV) improved agency cooperation with State governments, Tribal Governments, and local governments to address pollution and public health burdens for populations of color, communities of color, Tribal and indige-

nous communities, and low-income communities.

(B) REVISIONS.—

(i) IN GENERAL.—Each strategy developed and updated pursuant to subparagraph (A) shall identify programs, policies, planning and public participation processes, rulemaking, agency spending, and enforcement activities relating to human health or the environment that may be revised, at a minimum—

(I) to promote enforcement of all health, environmental, and civil rights laws and regulations in areas containing populations of color, communities of color, Tribal and indigenous communities, and low-income communities;

(II) to ensure greater public participation;

(III) to provide increased access to infrastructure;

(IV) to improve research and data collection relating to the health and environment of populations of

color, communities of color, Tribal and indigenous communities, and low-income communities, including through the increased use of community-based science; and

(V) to identify differential patterns of use of natural resources among populations of color, communities of color, Tribal and indigenous communities, and low-income communities.

(ii) TIMETABLES.—Each strategy implemented and updated pursuant to subparagraph (A) shall include a timetable for undertaking revisions identified pursuant to clause (i).

(C) PROGRESS REPORTS.—Not later than 1 year after the date of enactment of this Act, and not less frequently than once every 5 years thereafter, each Federal agency shall submit to Congress and the Working Group, and shall publish, a progress report that includes, with respect to the period covered by the report—

(i) a description of the current environmental justice strategy of the Federal agency;

(ii) an evaluation of the progress made by the Federal agency at national and regional levels regarding implementation of the environmental justice strategy, including—

(I) metrics used by the Federal agency to measure performance; and

(II) the progress made by the Federal agency toward—

(aa) the achievement of the metrics described in subclause (I); and

(bb) mitigating identified instances of environmental injustice;

(iii) a description of the participation by the Federal agency in interagency collaboration;

(iv) responses to recommendations submitted by members of the public to the Federal agency relating to the environmental justice strategy of the Federal

agency and the implementation by the Federal agency of this title; and

(v) any updates or revisions to the environmental justice strategy of the Federal agency, including those resulting from public comments.

(4) PUBLIC PARTICIPATION.—Each Federal agency shall—

(A) ensure that meaningful opportunities exist for the public to submit comments and recommendations relating to the environmental justice strategy, progress reports, and ongoing efforts of the Federal agency to incorporate environmental justice principles into the programs, policies, and activities of the Federal agency;

(B) hold public meetings or otherwise solicit public participation and community-based science from populations of color, communities of color, Tribal and indigenous communities, and low-income communities for fact-finding, receiving public comments, and conducting inquiries concerning environmental justice; and

(C) prepare for public review and publish a summary of the comments and recommendations provided.

(5) ACCESS TO INFORMATION.—Each Federal agency shall—

(A) publish public documents, notices, and hearings relating to the programs, policies, and activities of the Federal agency that affect human health or the environment; and

(B) translate and publish any public documents, notices, and hearings relating to an action of the Federal agency as appropriate for the affected population, specifically in any case in which a limited English-speaking population may be disproportionately affected by that action.

(6) CODIFICATION OF GUIDANCE.—

(A) COUNCIL ON ENVIRONMENTAL QUALITY.—Notwithstanding any other provision of law, sections II and III of the guidance issued by the Council on Environmental Quality entitled ''Environmental Justice Guidance Under the National Environmental Policy Act'' and dated December 10, 1997, are enacted into law.

(B) ENVIRONMENTAL PROTECTION AGENCY.—Notwithstanding any other provision of law, the guidance issued by the Environmental Protection Agency entitled ''EPA Policy on Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights'' and dated February 2016 is enacted into law.

(b) HUMAN HEALTH AND ENVIRONMENTAL RESEARCH, DATA COLLECTION, AND ANALYSIS.—

(1) RESEARCH.—Each Federal agency, to the maximum extent practicable and permitted by applicable law, shall—

(A) in conducting environmental or human health research, include diverse segments of the population in epidemiological and clinical studies, including segments at high risk from environmental hazards, such as—

(i) populations of color, communities of color, Tribal and indigenous communities, populations with low income, and low-income communities;

(ii) fenceline communities; and

(iii) workers who may be exposed to substantial environmental hazards;

(B) in conducting environmental or human health analyses, identify multiple and cumulative exposures; and

(C) actively encourage and solicit community-based science, and provide to populations of color, communities of color, Tribal and indigenous communities, populations with low income, and low income communities the opportunity to comment regarding the development and design of research strategies carried out pursuant to this title.

(2) DISPROPORTIONATE IMPACT.—To the maximum extent practicable and permitted by applicable law (including section 552a of title 5, United States Code (commonly known as the Privacy Act)), each Federal agency shall—

(A) collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income; and

(B) use that information to determine whether the programs, policies, and activities of the Federal agency have disproportionally high and adverse human health or environmental ef-

fects on populations of color, communities of color, Tribal and indigenous communities, and low-income communities.

(3) INFORMATION RELATING TO NON-FEDERAL FACILITIES.—In connection with the implementation of Federal agency strategies under subsection (a)(3), each Federal agency, to the maximum extent practicable and permitted by applicable law, shall collect, maintain, and analyze information relating to the race, national origin, and income level, and other readily accessible and appropriate information, for fenceline communities in proximity to any facility or site expected to have a substantial environmental, human health, or economic effect on the surrounding populations, if the facility or site becomes the subject of a substantial Federal environmental administrative or judicial action.

(4) IMPACT FROM FEDERAL FACILITIES.—Each Federal agency, to the maximum extent practicable and permitted by applicable law, shall collect, maintain, and analyze information relating to the race, national origin, and income level, and other readily accessible and appropriate information, for fenceline communities in proximity to any facility of the Federal agency that is—

(A) subject to the reporting requirements under the Emergency Planning and Community Right-To-Know Act of 1986 (42 U.S.C. 11001 et seq.), as required by Executive Order No. 12898 (42 U.S.C. 4321 note); and

(B) expected to have a substantial environmental, human health, or economic effect on surrounding populations.

(c) CONSUMPTION OF FISH AND WILDLIFE.—

(1) IN GENERAL.—Each Federal agency shall develop, publish (unless prohibited by law), and revise, as practicable and appropriate, guidance on actions of the Federal agency that will impact fish and wildlife consumed by populations that principally rely on fish or wildlife for subsistence.

(2) REQUIREMENT.—The guidance described in paragraph (1) shall—

(A) reflect the latest scientific information available concerning methods for evaluating the human health risks associated with the consumption of pollutant-bearing fish or wildlife; and

(B) publish the risks of such consumption patterns.

(d) MAPPING AND SCREENING TOOL.—The Administrator shall continue to make available to the public an environmental justice mapping and screening tool (such as EJScreen or an equivalent tool) that includes, at a minimum, the following features:

(1) Nationally consistent data.

(2) Environmental data.

(3) Demographic data, including data relating to race, ethnicity, and income.

(4) Capacity to produce maps and reports by geographical area.

(5) Data on national parks and other federally protected natural, historic, and cultural sites.

(e) JUDICIAL REVIEW AND RIGHTS OF ACTION.—Any person may commence a civil action—

(1) to seek relief from, or to compel, an agency action under this section (including regulations promulgated pursuant to this section); or

(2) otherwise to ensure compliance with this section (including regulations promulgated pursuant to this section).

(f) INFORMATION SHARING.—In carrying out this section, each Federal agency, to the maximum extent practicable and permitted by applicable law, shall share information and eliminate unnecessary duplication of ef-

forts through the use of existing data systems and cooperative agreements among Federal agencies and with State, local, and Tribal Governments.

SEC. 11005. TRAINING OF EMPLOYEES OF FEDERAL AGENCIES.

(a) INITIAL TRAINING.—Not later than 1 year after the date of enactment of this Act, each employee of the Department of Energy, the Environmental Protection Agency, the Department of the Interior, and the National Oceanic and Atmospheric Administration shall complete an environmental justice training program to ensure that each such employee—

(1) has received training in environmental justice; and

(2) is capable of—

(A) appropriately incorporating environmental justice concepts into the daily activities of the employee; and

(B) increasing the meaningful participation of individuals from environmental justice communities in the activities of the applicable agency.

(b) MANDATORY PARTICIPATION.—Effective on the date that is 1 year after the date of enactment of this Act, each individual hired by the Department of Energy,

the Environmental Protection Agency, the Department of the Interior, and the National Oceanic and Atmospheric Administration after that date shall be required to participate in environmental justice training.

(c) REQUIREMENT RELATING TO CERTAIN EMPLOYEES.—

(1) IN GENERAL.—With respect to each Federal agency that participates in the Working Group, not later than 30 days after the date on which an individual is appointed to the position of environmental justice coordinator, or any other position the responsibility of which involves the conduct of environmental justice activities, the individual shall be required to possess documentation of the completion by the individual of environmental justice training.

(2) EVALUATION.—Not later than 3 years after the date of enactment of this Act, the Inspector General of each Federal agency that participates in the Working Group shall evaluate the training programs of such Federal agency to determine if such Federal agency has improved the rate of training of the employees of such Federal agency to ensure that each employee has received environmental justice training.

SEC. 11006. ENVIRONMENTAL JUSTICE BASIC TRAINING PROGRAM.

(a) ESTABLISHMENT.—The Administrator shall establish a basic training program, in coordination and consultation with nongovernmental environmental justice organizations, to increase the capacity of residents of environmental justice communities to identify and address disproportionately adverse human health or environmental effects by providing culturally and linguistically appropriate—

(1) training and education relating to—

(A) basic and advanced techniques for the detection, assessment, and evaluation of the effects of hazardous substances on human health;

(B) methods to assess the risks to human health presented by hazardous substances;

(C) methods and technologies to detect hazardous substances in the environment;

(D) basic biological, chemical, and physical methods to reduce the quantity and toxicity of hazardous substances;

(E) the rights and safeguards currently afforded to individuals through policies and laws intended to help environmental justice communities address disparate impacts and discrimination, including—

(i) laws adopted to protect human health and the environment; and

(ii) section 602 of the Civil Rights Act of 1964 (42 U.S.C. 2000d–1);

(F) public engagement opportunities through the policies and laws described in subparagraph (E);

(G) materials available on the Clearinghouse described in section 11007;

(H) methods to expand access to parks and other natural and recreational amenities; and

(I) finding and applying for Federal grants related to environmental justice; and

(2) short courses and continuation education programs for residents of communities who are located in close proximity to hazardous substances to provide—

(A) education relating to—

(i) the proper manner to handle hazardous substances;

(ii) the management of facilities at which hazardous substances are located (including facility compliance protocols); and

(iii) the evaluation of the hazards that facilities described in clause (ii) pose to human health; and

(B) training on environmental and occupational health and safety with respect to the public health and engineering aspects of hazardous waste control.

(b) GRANT PROGRAM.—

(1) ESTABLISHMENT.—In carrying out the basic training program established under subsection (a), the Administrator may provide grants to, or enter into any contract or cooperative agreement with, an eligible entity to carry out any training or educational activity described in subsection (a).

(2) ELIGIBLE ENTITY.—To be eligible to receive assistance under paragraph (1), an eligible entity shall be an accredited institution of education in partnership with—

(A) a community-based organization that carries out activities relating to environmental justice;

(B) a generator of hazardous waste;

(C) any individual who is involved in the detection, assessment, evaluation, or treatment of hazardous waste;

(D) any owner or operator of a facility at which hazardous substances are located; or

(E) any State government, Tribal Government, or local government.

(c) PLAN.—

(1) IN GENERAL.—Not later than 2 years after the date of enactment of this Act, the Administrator, in consultation with the Director, shall develop and publish in the Federal Register a plan to carry out the basic training program established under subsection (a).

(2) CONTENTS.—The plan described in paragraph (1) shall contain—

(A) a list that describes the relative priority of each activity described in subsection (a); and

(B) a description of research and training relevant to environmental justice issues of communities adversely affected by pollution.

(3) COORDINATION WITH FEDERAL AGENCIES.—The Administrator shall, to the maximum extent practicable, take appropriate steps to coordinate the activities of the basic training program described in the plan with the activities of other Federal agencies to avoid any duplication of effort.

(d) REPORT.—

(1) IN GENERAL.—Not later than 2 years after the date of enactment of this Act, and every 2 years thereafter, the Administrator shall submit to the Committees on Energy and Commerce and Natural Resources of the House of Representative and the Committees on Environment and Public Works and Energy and Natural Resources of the Senate a report describing—

(A) the implementation of the basic training program established under subsection (a); and

(B) the impact of the basic training program on improving training opportunities for residents of environmental justice communities.

(2) PUBLIC AVAILABILITY.—The Administrator shall make the report required under paragraph (1) available to the public (including by posting a copy of the report on the website of the Environmental Protection Agency).

(e) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $10,000,000 for each of fiscal years 2021 through 2025.

SEC. 11007. ENVIRONMENTAL JUSTICE CLEARINGHOUSE.

(a) ESTABLISHMENT.—Not later than 1 year after the date of enactment of this Act, the Administrator shall establish a public internet-based clearinghouse, to be known as the Environmental Justice Clearinghouse.

(b) CONTENTS.—The Clearinghouse shall be comprised of culturally and linguistically appropriate materials related to environmental justice, including—

(1) information describing the activities conducted by the Environmental Protection Agency to address issues relating to environmental justice;

(2) copies of training materials provided by the Administrator to help individuals and employees understand and carry out environmental justice activities;

(3) links to web pages that describe environmental justice activities of other Federal agencies;

(4) a directory of individuals who possess technical expertise in issues relating to environmental justice;

(5) a directory of nonprofit and community-based organizations, including grassroots organizations led by people of color, that address issues relating to environmental justice at the local, State, and Federal levels (with particular emphasis given to nonprofit and community-based organizations that

possess the capability to provide advice or technical assistance to environmental justice communities); and

(6) any other appropriate information as determined by the Administrator, including information on any resources available to help address the disproportionate burden of adverse human health or environmental effects on environmental justice communities.

(c) CONSULTATION.—In developing the Clearinghouse, the Administrator shall consult with individuals representing academic and community-based organizations who have expertise in issues relating to environmental justice.

(d) ANNUAL REVIEW.—The Advisory Council shall—

(1) conduct a review of the Clearinghouse on an annual basis; and

(2) recommend to the Administrator any updates for the Clearinghouse that the Advisory Council determines to be necessary for the effective operation of the Clearinghouse.

SEC. 11008. PUBLIC MEETINGS.

(a) IN GENERAL.—Not later than 2 years after the date of enactment of this Act, and biennially thereafter, the Administrator shall hold public meetings on environ-

mental justice issues in each region of the Environmental Protection Agency to gather public input with respect to the implementation and updating of environmental justice strategies and efforts of the Environmental Protection Agency.

(b) OUTREACH TO ENVIRONMENTAL JUSTICE COMMUNITIES.—The Administrator, in advance of the meetings described in subsection (a), shall to the extent practicable hold multiple meetings in environmental justice communities in each region to provide meaningful community involvement opportunities.

(c) NOTICE.—Notice for the meetings described in subsections (a) and (b) shall be provided—

(1) to applicable representative entities or organizations present in the environmental justice community including—

(A) local religious organizations;

(B) civic associations and organizations;

(C) business associations of people of color;

(D) environmental and environmental justice organizations;

(E) homeowners', tenants', and neighborhood watch groups;

(F) local and Tribal Governments;

(G) rural cooperatives;

(H) business and trade organizations;

(I) community and social service organizations;

(J) universities, colleges, and vocational schools;

(K) labor organizations;

(L) civil rights organizations;

(M) senior citizens' groups; and

(N) public health agencies and clinics;

(2) through communication methods that are accessible in the applicable environmental justice community, which may include electronic media, newspapers, radio, and other media particularly targeted at communities of color, low-income communities, and Tribal and indigenous communities; and

(3) at least 30 days before any such meeting.

(d) COMMUNICATION METHODS AND REQUIREMENTS.—The Administrator shall—

(1) provide translations of any documents made available to the public pursuant to this section in any language spoken by more than 5 percent of the population residing within the applicable environmental justice community, and make available translation services for meetings upon request; and

(2) not require members of the public to produce a form of identification or register their names, provide other information, complete a questionnaire, or otherwise fulfill any condition precedent to attending a meeting, but if an attendance list, register, questionnaire, or other similar document is utilized during meetings, it shall state clearly that the signing, registering, or completion of the document is voluntary.

(e) REQUIRED ATTENDANCE OF CERTAIN EMPLOYEES.—In holding a public meeting under subsection (a), the Administrator shall ensure that at least 1 employee of the Environmental Protection Agency at the level of Assistant Administrator is present at the meeting to serve as a representative of the Environmental Protection Agency.

SEC. 11009. NATIONAL ENVIRONMENTAL JUSTICE ADVISORY COUNCIL.

(a) ESTABLISHMENT.—The President shall establish an advisory council, to be known as the National Environmental Justice Advisory Council.

(b) MEMBERSHIP.—The Advisory Council shall be comprised of 26 members who have knowledge of, or experience relating to, the effect of environmental conditions

on communities of color, low-income communities, and Tribal and indigenous communities, including—

(1) representatives of—

(A) community-based organizations that carry out initiatives relating to environmental justice, including grassroots organizations led by people of color;

(B) State governments, Tribal Governments, and local governments;

(C) Indian Tribes and other indigenous groups;

(D) nongovernmental and environmental organizations; and

(E) private sector organizations (including representatives of industries and businesses); and

(2) experts in the fields of—

(A) socioeconomic analysis;

(B) health and environmental effects;

(C) exposure evaluation;

(D) environmental law and civil rights law; and

(E) environmental health science research.

(c) SUBCOMMITTEES; WORKGROUPS.—

(1) ESTABLISHMENT.—The Advisory Council may establish any subcommittee or workgroup to assist the Advisory Council in carrying out any duty of the Advisory Council described in subsection (d).

(2) REPORT.—Upon the request of the Advisory Council, each subcommittee or workgroup established by the Advisory Council under paragraph (1) shall submit to the Advisory Council a report that contains—

(A) a description of each recommendation of the subcommittee or workgroup; and

(B) any advice requested by the Advisory Council with respect to any duty of the Advisory Council.

(d) DUTIES.—The Advisory Council shall provide independent advice and recommendations to the Environmental Protection Agency with respect to issues relating to environmental justice, including advice—

(1) to help develop, facilitate, and conduct reviews of the direction, criteria, scope, and adequacy of the scientific research and demonstration projects of the Environmental Protection Agency relating to environmental justice;

(2) to improve participation, cooperation, and communication with respect to such issues—

(A) within the Environmental Protection Agency;

(B) between, and among, the Environmental Protection Agency and Federal agencies, State and local governments, Indian Tribes, environmental justice leaders, interest groups, and the public;

(3) requested by the Administrator to help improve the response of the Environmental Protection Agency in securing environmental justice for communities of color, low-income communities, and Tribal and indigenous communities; and

(4) on issues relating to—

(A) the developmental framework of the Environmental Protection Agency with respect to the integration by the Environmental Protection Agency of socioeconomic programs into the strategic planning, annual planning, and management accountability of the Environmental Protection Agency to achieve environmental justice results throughout the Environmental Protection Agency;

(B) the measurement and evaluation of the progress, quality, and adequacy of the Environmental Protection Agency in planning, devel-

oping, and implementing environmental justice strategies, project, and programs;

(C) any existing and future information management systems, technologies, and data collection activities of the Environmental Protection Agency (including recommendations to conduct analyses that support and strengthen environmental justice programs in administrative and scientific areas);

(D) the administration of grant programs relating to environmental justice assistance; and

(E) education, training, and other outreach activities conducted by the Environmental Protection Agency relating to environmental justice.

(e) DESIGNATED FEDERAL OFFICER.—The Director of the Office of Environmental Justice of the Environmental Protection Agency is designated as the Federal officer required under section 10(e) of the Federal Advisory Committee Act (5 U.S.C. App.) for the Advisory Council.

(f) MEETINGS.—

(1) IN GENERAL.—The Advisory Council shall meet not less frequently than 3 times each calendar year.

(2) OPEN TO PUBLIC.—Each meeting of the Advisory Council shall be held open to the public.

(3) DUTIES OF DESIGNATED FEDERAL OFFICER.—The designated Federal officer described in subsection (e) (or a designee) shall—

(A) be present at each meeting of the Advisory Council;

(B) ensure that each meeting is conducted in accordance with an agenda approved in advance by the designated Federal officer;

(C) provide an opportunity for interested persons—

(i) to file comments before or after each meeting of the Advisory Council; or

(ii) to make statements at such a meeting, to the extent that time permits;

(D) ensure that a representative of the Working Group and a high-level representative from each regional office of the Environmental Protection Agency are invited to, and encouraged to attend, each meeting of the Advisory Council; and

(E) provide technical assistance to States seeking to establish State-level environmental

justice advisory councils or implement other environmental justice policies or programs.

(g) RESPONSES FROM ADMINISTRATOR.—

(1) PUBLIC COMMENT INQUIRIES.—The Administrator shall provide a written response to each inquiry submitted to the Administrator by a member of the public before or after each meeting of the Advisory Council by not later than 120 days after the date of submission.

(2) RECOMMENDATIONS FROM ADVISORY COUNCIL.—The Administrator shall provide a written response to each recommendation submitted to the Administrator by the Advisory Council by not later than 120 days after the date of submission.

(h) TRAVEL EXPENSES.—A member of the Advisory Council may be allowed travel expenses, including per diem in lieu of subsistence, at such rate as the Administrator determines to be appropriate while away from the home or regular place of business of the member in the performance of the duties of the Advisory Council.

(i) DURATION.—The Advisory Council shall remain in existence unless otherwise provided by law.

SEC. 11010. ENVIRONMENTAL JUSTICE GRANT PROGRAMS.

(a) IN GENERAL.—The Administrator shall continue to carry out the Environmental Justice Small Grants Pro-

gram and the Environmental Justice Collaborative Problem-Solving Cooperative Agreement Program, as those programs are in existence on the date of enactment of this Act.

(b) CARE GRANTS.—The Administrator shall continue to carry out the Community Action for a Renewed Environment grant programs I and II, as in existence on January 1, 2012.

(c) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out the programs described in subsections (a) and (b) $50,000,000 for each of fiscal years 2021 through 2030.

SEC. 11011. ENVIRONMENTAL JUSTICE COMMUNITY SOLID WASTE DISPOSAL TECHNICAL ASSISTANCE GRANTS.

(a) IN GENERAL.—The Administrator may award grants to eligible entities to enable such entities to participate in decisions impacting the health and safety of their communities relating to the permitting or permit renewal of a solid waste disposal facility or hazardous waste facility.

(b) TIMING.—

(1) GUIDANCE.—Not later than 12 months after the date of enactment of this section, the Administrator shall publish guidance describing the

process for eligible entities to apply for a grant under this section, including the required content and form of applications, the manner in which applications must be submitted, and any applicable deadlines.

(2) FIRST GRANT.—Not later than 180 days after the issuance of guidance under paragraph (1), the Administrator shall award the first grant under this section.

(c) ELIGIBLE ENTITY.—To be eligible for a grant under this section, an applicant shall be a group of individuals who reside in a community that—

(1) is a population of color, a community of color, a Tribal and indigenous community, or a low-income community; and

(2) is in close proximity to a facility described in subsection (a) for which a decision relating to a permit or permit renewal for such facility is required.

(d) USE OF FUNDS.—An eligible entity receiving a grant under this section shall use the grant to participate in decisions impacting the health and safety of the community involved that are related to the permitting or permit renewal of a solid waste disposal facility or hazardous waste facility, including—

(1) interpreting information with regard to—

(A) cumulative impacts studies;

(B) health impacts studies;

(C) relevant agency decisions; and

(D) operation and maintenance of necessary monitors; and

(2) performing environmental monitoring.

(e) LIMITATIONS ON AMOUNT; RENEWAL.—

(1) AMOUNT.—

(A) IN GENERAL.—The amount of a grant under this section (excluding any renewals of the grant) may not exceed $50,000 for any grant recipient.

(B) EXCEPTION.—The Administrator may waive the limitation in subparagraph (A) with respect to an applicant in any case where the Administrator determines that such waiver is necessary for the community involved to obtain the necessary technical assistance.

(2) RENEWAL.—Grants may be renewed for each step in the process for the permitting or permit renewal of a solid waste disposal facility or hazardous waste facility.

SEC. 11012. ENVIRONMENTAL JUSTICE COMMUNITY, STATE, AND TRIBAL GRANT PROGRAMS.

(a) ENVIRONMENTAL JUSTICE COMMUNITY GRANT PROGRAM.—

(1) ESTABLISHMENT.—The Administrator shall establish a program under which the Administrator shall provide grants to eligible entities to assist the eligible entities in—

(A) building capacity to address issues relating to environmental justice; and

(B) carrying out any activity described in paragraph (4).

(2) ELIGIBILITY.—To be eligible to receive a grant under paragraph (1), an eligible entity shall be a nonprofit, community-based organization that conducts activities, including providing medical and preventive health services, to reduce the disproportionate health impacts of environmental pollution in the environmental justice community at which the eligible entity proposes to conduct an activity that is the subject of the application described in paragraph (3).

(3) APPLICATION.—To be eligible to receive a grant under paragraph (1), an eligible entity shall submit to the Administrator an application at such

time, in such manner, and containing such information as the Administrator may require, including—

(A) an outline describing the means by which the project proposed by the eligible entity will—

(i) with respect to environmental and public health issues at the local level, increase the understanding of the environmental justice community at which the eligible entity will conduct the project;

(ii) improve the ability of the environmental justice community to address each issue described in clause (i);

(iii) facilitate collaboration and cooperation among various stakeholders (including members of the environmental justice community); and

(iv) support the ability of the environmental justice community to proactively plan and implement just sustainable community development and revitalization initiatives, including countering displacement and gentrification;

(B) a proposed budget for each activity of the project that is the subject of the application;

(C) a list of proposed outcomes with respect to the proposed project;

(D) a description of the ways by which the eligible entity may leverage the funds of the eligible entity, or the funds made available through a grant under this subsection, to develop a project that is capable of being sustained beyond the period of the grant; and

(E) a description of the ways by which the eligible entity is linked to, and representative of, the environmental justice community at which the eligible entity will conduct the project.

(4) USE OF FUNDS.—An eligible entity may only use a grant under this subsection to carry out culturally and linguistically appropriate projects and activities that are driven by the needs, opportunities, and priorities of the environmental justice community at which the eligible entity proposes to conduct the project or activity to address environmental justice concerns and improve the health or environment

of the environmental justice community, including activities—

(A) to create or develop collaborative partnerships;

(B) to educate and provide outreach services to the environmental justice community;

(C) to identify and implement projects to address environmental or public health concerns; or

(D) to develop a comprehensive understanding of environmental or public health issues.

(5) REPORT.—

(A) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, and annually thereafter, the Administrator shall submit to the Committees on Energy and Commerce and Natural Resources of the House of Representatives and the Committees on Environment and Public Works and Energy and Natural Resources of the Senate a report describing the ways by which the grant program under this subsection has helped community-based nonprofit organizations address issues relating to environmental justice.

(B) PUBLIC AVAILABILITY.—The Administrator shall make each report required under subparagraph (A) available to the public (including by posting a copy of the report on the website of the Environmental Protection Agency).

(6) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection $25,000,000 for each of fiscal years 2021 through 2025.

(b) STATE GRANT PROGRAM.—

(1) ESTABLISHMENT.—The Administrator shall establish a program under which the Administrator shall provide grants to States to enable the States—

(A) to establish culturally and linguistically appropriate protocols, activities, and mechanisms for addressing issues relating to environmental justice; and

(B) to carry out culturally and linguistically appropriate activities to reduce or eliminate disproportionately adverse human health or environmental effects on environmental justice communities in the State, including reducing economic vulnerabilities that result in the

environmental justice communities being disproportionately affected.

(2) ELIGIBILITY.—

(A) APPLICATION.—To be eligible to receive a grant under paragraph (1), a State shall submit to the Administrator an application at such time, in such manner, and containing such information as the Administrator may require, including—

(i) a plan that contains a description of the means by which the funds provided through a grant under paragraph (1) will be used to address issues relating to environmental justice at the State level; and

(ii) assurances that the funds provided through a grant under paragraph (1) will be used only to supplement the amount of funds that the State allocates for initiatives relating to environmental justice.

(B) ABILITY TO CONTINUE PROGRAM.—To be eligible to receive a grant under paragraph (1), a State shall demonstrate to the Administrator that the State has the ability to continue each program that is the subject of funds pro-

vided through a grant under paragraph (1) after receipt of the funds.

(3) REPORT.—

(A) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, and annually thereafter, the Administrator shall submit to the Committees on Energy and Commerce and Natural Resources of the House of Representatives and the Committees on Environment and Public Works and Energy and Natural Resources of the Senate a report describing—

(i) the implementation of the grant program established under paragraph (1);

(ii) the impact of the grant program on improving the ability of each participating State to address environmental justice issues; and

(iii) the activities carried out by each State to reduce or eliminate disproportionately adverse human health or environmental effects on environmental justice communities in the State.

(B) PUBLIC AVAILABILITY.—The Administrator shall make each report required under

subparagraph (A) available to the public (including by posting a copy of the report on the website of the Environmental Protection Agency).

(4) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection $15,000,000 for each of fiscal years 2021 through 2025.

(c) TRIBAL GRANT PROGRAM.—

(1) ESTABLISHMENT.—The Administrator shall establish a program under which the Administrator shall provide grants to Tribal Governments to enable the Indian Tribes—

(A) to establish culturally and linguistically appropriate protocols, activities, and mechanisms for addressing issues relating to environmental justice; and

(B) to carry out culturally and linguistically appropriate activities to reduce or eliminate disproportionately adverse human health or environmental effects on environmental justice communities in Tribal and indigenous communities, including reducing economic vulnerabilities that result in the Tribal and in-

digenous communities being disproportionately affected.

(2) ELIGIBILITY.—

(A) APPLICATION.—To be eligible to receive a grant under paragraph (1), a Tribal Government shall submit to the Administrator an application at such time, in such manner, and containing such information as the Administrator may require, including—

(i) a plan that contains a description of the means by which the funds provided through a grant under paragraph (1) will be used to address issues relating to environmental justice in Tribal and indigenous communities; and

(ii) assurances that the funds provided through a grant under paragraph (1) will be used only to supplement the amount of funds that the Tribal Government allocates for initiatives relating to environmental justice.

(B) ABILITY TO CONTINUE PROGRAM.—To be eligible to receive a grant under paragraph (1), a Tribal Government shall demonstrate to the Administrator that the Tribal Government

has the ability to continue each program that is the subject of funds provided through a grant under paragraph (1) after receipt of the funds.

(3) REPORT.—

(A) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, and annually thereafter, the Administrator shall submit to the Committees on Energy and Commerce and Natural Resources of the House of Representatives and the Committees on Environment and Public Works and Energy and Natural Resources of the Senate a report describing—

(i) the implementation of the grant program established under paragraph (1);

(ii) the impact of the grant program on improving the ability of each participating Indian Tribe to address environmental justice issues; and

(iii) the activities carried out by each Tribal Government to reduce or eliminate disproportionately adverse human health or environmental effects on applicable environmental justice communities in Tribal and indigenous communities.

(B) PUBLIC AVAILABILITY.—The Administrator shall make each report required under subparagraph (A) available to the public (including by posting a copy of the report on the website of the Environmental Protection Agency).

(4) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection $25,000,000 for each of fiscal years 2021 through 2025.

(d) COMMUNITY-BASED PARTICIPATORY RESEARCH GRANT PROGRAM.—

(1) ESTABLISHMENT.—The Administrator, in consultation with the Director, shall establish a program under which the Administrator shall provide not more than 25 multiyear grants to eligible entities to carry out community-based participatory research—

(A) to address issues relating to environmental justice;

(B) to improve the environment of residents and workers in environmental justice communities; and

(C) to improve the health outcomes of residents and workers in environmental justice communities.

(2) ELIGIBILITY.—To be eligible to receive a multiyear grant under paragraph (1), an eligible entity shall be a partnership comprised of—

(A) an accredited institution of higher education; and

(B) a community-based organization.

(3) APPLICATION.—To be eligible to receive a multiyear grant under paragraph (1), an eligible entity shall submit to the Administrator an application at such time, in such manner, and containing such information as the Administrator may require, including—

(A) a detailed description of the partnership of the eligible entity that, as determined by the Administrator, demonstrates the participation of members of the community at which the eligible entity proposes to conduct the research; and

(B) a description of—

(i) the project proposed by the eligible entity; and

(ii) the ways by which the project will—

(I) address issues relating to environmental justice;

(II) assist in the improvement of health outcomes of residents and workers in environmental justice communities; and

(III) assist in the improvement of the environment of residents and workers in environmental justice communities.

(4) PUBLIC AVAILABILITY.—The Administrator shall make the results of the grants available provided under this subsection to the public, including by posting on the website of the Environmental Protection Agency a copy of the grant awards and an annual report at the beginning of each fiscal year describing the research findings associated with each grant provided under this subsection.

(5) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection $10,000,000 for each of fiscal years 2021 through 2025.

SEC. 11013. PROTECTIONS FOR ENVIRONMENTAL JUSTICE COMMUNITIES AGAINST HARMFUL FEDERAL ACTIONS.

(a) PURPOSE; DEFINITIONS.—

(1) PURPOSE.—The purpose of this section is to establish additional protections relating to Federal actions affecting environmental justice communities in recognition of the disproportionate burden of adverse human health or environmental effects faced by such communities.

(2) DEFINITIONS.—In this section:

(A) FEDERAL ACTION.—The term ''Federal action'' means a proposed action that requires the preparation of an environmental impact statement, environmental assessment, categorical exclusion, or other document under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(B) ENVIRONMENTAL IMPACT STATEMENT.—The term ''environmental impact statement'' means the detailed statement of environmental impacts of a proposed action required to be prepared pursuant to the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(b) PREPARATION OF A COMMUNITY IMPACT REPORT.—A Federal agency proposing to take a Federal action that has the potential to cause negative environmental or public health impacts on an environmental justice community shall prepare a community impact report assessing the potential impacts of the proposed action.

(c) CONTENTS.—The community impact report described in subsection (b) shall—

(1) assess the degree to which a proposed Federal action affecting an environmental justice community will cause multiple or cumulative exposure to human health and environmental hazards that influence, exacerbate or contribute to adverse health outcomes;

(2) assess relevant public health data and industry data concerning the potential for multiple or cumulative exposure to human health or environmental hazards in the area of the environmental justice community and historical patterns of exposure to environmental hazards and agencies shall assess these multiple, or cumulative effects, even if certain effects are not within the control or subject to the discretion of the Federal agency proposing the Federal action;

(3) assess the impact of such proposed Federal action on such environmental justice community's ability to access public parks, outdoor spaces, and public recreation opportunities;

(4) evaluate alternatives to or mitigation measures for the proposed Federal action that will—

(A) eliminate or reduce any identified exposure to human health and environmental hazards described in paragraph (1) to a level that is reasonably expected to avoid human health impacts in environmental justice communities; and

(B) not negatively impact an environmental justice community's ability to access public parks, outdoor spaces, and public recreation opportunities; and

(5) analyze any alternative developed by members of an affected environmental justice community that meets the purpose and need of the proposed action.

(d) DELEGATION.—Federal agencies shall not delegate responsibility for the preparation of a community impact report prepared under this section to any other entity.

(e) NATIONAL ENVIRONMENTAL POLICY ACT REQUIREMENTS FOR ENVIRONMENTAL JUSTICE COMMUNITIES.—When carrying out the requirements of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) for a proposed Federal action that may affect an environmental justice community, a Federal agency shall—

(1) consider all potential direct, indirect, and cumulative impacts caused by the action, alternatives to such action, and mitigation measures on the environmental justice community required by the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.);

(2) require any public comment period carried out during the scoping phase of the environmental review process to be no less than 90 days;

(3) provide early and meaningful community involvement opportunities by—

(A) holding multiple hearings in such community regarding the proposed Federal action in each prominent language within the environmental justice community; and

(B) providing notice of any step or action in the National Environmental Policy Act process that involves public participation to any rep-

resentative entities or organizations present in the environmental justice community including—

(i) local religious organizations;

(ii) civic associations and organizations;

(iii) business associations of people of color;

(iv) environmental and environmental justice organizations, including community-based grassroots organizations led by people of color;

(v) homeowners', tenants', and neighborhood watch groups;

(vi) local and Tribal Governments;

(vii) rural cooperatives;

(viii) business and trade organizations;

(ix) community and social service organizations;

(x) universities, colleges, and vocational schools;

(xi) labor and other worker organizations;

(xii) civil rights organizations;

(xiii) senior citizens' groups; and

(xiv) public health agencies and clinics; and

(4) provide translations of publicly available documents made available pursuant to the National Environmental Policy Act in any language spoken by more than 5 percent of the population residing within the environmental justice community.

(f) COMMUNICATION METHODS AND REQUIREMENTS.—Any notice provided under subsection (e)(3)(B) shall be provided—

(1) through communication methods that are accessible in the environmental justice community. Such methods may include electronic media, newspapers, radio, direct mailings, canvassing, and other outreach methods particularly targeted at communities of color, low-income communities, and Tribal and indigenous communities; and

(2) at least 30 days before any hearing in such community or the start of any public comment period.

(g) REQUIREMENTS FOR ACTIONS REQUIRING AN ENVIRONMENTAL IMPACT STATEMENT.—For any proposed Federal action affecting an environmental justice community requiring the preparation of an environmental

impact statement, the Federal agency shall provide the following information when giving notice of the proposed action:

(1) A description of the proposed action.

(2) An outline of the anticipated schedule for completing the process under the National Environmental Policy Act, with a description of key milestones.

(3) An initial list of alternatives and potential impacts.

(4) An initial list of other existing or proposed sources of multiple or cumulative exposure to environmental hazards that contribute to higher rates of serious illnesses within the environmental justice community.

(5) An agency point of contact.

(6) Timely notice of locations where comments will be received or public meetings held.

(7) Any telephone number or locations where further information can be obtained.

(h) NATIONAL ENVIRONMENTAL POLICY ACT REQUIREMENTS FOR INDIAN TRIBES.—When carrying out the requirements of the National Environmental Policy Act for a proposed Federal action that may affect an Indian Tribe, a Federal agency shall—

(1) seek Tribal representation in the process in a manner that is consistent with the government-to-government relationship between the United States and Tribal Governments, the Federal Government's trust responsibility to federally recognized Tribes, and any treaty rights;

(2) ensure that an Indian Tribe is invited to hold the status of a cooperating agency throughout the National Environmental Policy Act process for any proposed action that could impact an Indian Tribe including actions that could impact off reservation lands and sacred sites; and

(3) invite an Indian Tribe to hold the status of a cooperating agency in accordance with paragraph (2) no later than the commencement of the scoping process for a proposed action requiring the preparation of an environmental impact statement.

(i) AGENCY DETERMINATIONS.—Federal agency determinations about the analysis of a community impact report described in this section shall be subject to judicial review to the same extent as any other analysis performed under the National Environmental Policy Act.

(j) EFFECTIVE DATE.—This section shall take effect one year after the date of enactment of this Act.

(k) SAVINGS CLAUSE.—Nothing in this section diminishes—

(1) any right granted through the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) to the public; or

(2) the requirements under that Act to consider direct, indirect, and cumulative impacts.

SEC. 11014. PROHIBITED DISCRIMINATION.

Section 601 of the Civil Rights Act of 1964 (42 U.S.C. 2000d) is amended—

(1) by striking ''No'' and inserting ''(a) No''; and

(2) by adding at the end the following:

''(b)(1)(A) Discrimination (including exclusion from participation and denial of benefits) based on disparate impact is established under this title if—

''(i) an entity subject to this title (referred to in this title as a 'covered entity') has a program, policy, practice, or activity that causes a disparate impact on the basis of race, color, or national origin and the covered entity fails to demonstrate that the challenged program, policy, practice, or activity is related to and necessary to achieve the nondiscriminatory goal of the program,

policy, practice, or activity alleged to have been operated in a discriminatory manner; or

"(ii) a less discriminatory alternative program, policy, practice, or activity exists, and the covered entity refuses to adopt such alternative program, policy, practice, or activity.

"(B) With respect to demonstrating that a particular program, policy, practice, or activity does not cause a disparate impact, the covered entity shall demonstrate that each particular challenged program, policy, practice, or activity does not cause a disparate impact, except that if the covered entity demonstrates to the courts that the elements of the covered entity's decision-making process are not capable of separation for analysis, the decision-making process may be analyzed as 1 program, policy, practice, or activity.

"(2) A demonstration that a program, policy, practice, or activity is necessary to achieve the goals of a program, policy, practice, or activity may not be used as a defense against a claim of intentional discrimination under this title.

''(c) No person in the United States shall be subjected to discrimination, including retaliation or intimidation, because such person opposed any program, policy, practice, or activity prohibited by this title, or because such person made a charge, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing under this title.''.

SEC. 11015. RIGHT OF ACTION.

(a) IN GENERAL.—Section 602 of the Civil Rights Act of 1964 (42 U.S.C. 2000d–1) is amended—

(1) by inserting ''(a)'' before ''Each Federal department and agency which is empowered''; and

(2) by adding at the end the following:

''(b) Any person aggrieved by the failure to comply with this title, including any regulation promulgated pursuant to this title, may file suit in any district court of the United States having jurisdiction of the parties, without respect to the amount in controversy and without regard to the citizenship of the parties.''.

(b) EFFECTIVE DATE.—

(1) IN GENERAL.—This section, including the amendments made by this section, takes effect on the date of enactment of this Act.

(2) APPLICATION.—This section, including the amendments made by this section, applies to all ac-

tions or proceedings pending on or after the date of enactment of this Act.

SEC. 11016. RIGHTS OF RECOVERY.

Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) is amended by inserting after section 602 the following:

"SEC. 602A. ACTIONS BROUGHT BY AGGRIEVED PERSONS.

"(a) CLAIMS BASED ON PROOF OF INTENTIONAL DISCRIMINATION.—In an action brought by an aggrieved person under this title against a covered entity who has engaged in unlawful intentional discrimination (not a practice that is unlawful because of its disparate impact) prohibited under this title (including its implementing regulations), the aggrieved person may recover equitable and legal relief (including compensatory and punitive damages), attorney's fees (including expert fees), and costs of the action, except that punitive damages are not available against a government, government agency, or political subdivision.

"(b) CLAIMS BASED ON THE DISPARATE IMPACT STANDARD OF PROOF.—In an action brought by an aggrieved person under this title against a covered entity who has engaged in unlawful discrimination based on disparate impact prohibited under this title (including implementing regulations), the aggrieved person may recover

attorney's fees (including expert fees), and costs of the action.''.

SEC. 11017. PUBLIC HEALTH RISKS ASSOCIATED WITH CUMULATIVE ENVIRONMENTAL STRESSORS.

(a) PROPOSED PROTOCOL.—Not later than 180 days after the date of enactment of this section, the Administrator, in consultation with the Advisory Council, shall publish a proposal for a protocol for assessing and addressing the cumulative public health risks associated with multiple environmental stressors. The Administrator shall allow 90 days for public comment on such proposal. The environmental stressors addressed under such proposal shall include—

(1) impacts associated with global climate change, including extreme heat, extremes in temperature change, drought, wildfires, sea level rise, flooding, storms, water shortage, food shortage, ecosystem disruption, and the spread of infectious disease;

(2) exposure to pollutants, emissions, discharges, waste, chemicals, or other materials subject to regulation under the Clean Air Act, the Federal Water Pollution Control Act, the Safe Drinking Water Act, the Toxic Substances Control Act, the Solid Waste Disposal Act, the Comprehensive Envi-

ronmental Response, Compensation, and Liability Act of 1980, the Emergency Planning and Community Right-to-Know Act of 1986, and other laws administered by the Administrator; and

(3) other environmental stressors determined by the Administrator to impact public health.

(b) FINAL PROTOCOL.—Not later than 1 year after the enactment of this section, the Administrator shall publish the final protocol for assessing and addressing the cumulative public health risks associated with multiple environmental stressors.

(c) IMPLEMENTATION.—Not later than 3 years after the enactment of this section, the Administrator shall implement the protocol described under subsection (b).

SEC. 11018. CLIMATE JUSTICE GRANT PROGRAM.

(a) ESTABLISHMENT.—The Administrator shall establish a program under which the Administrator shall provide grants to eligible entities to assist the eligible entities in—

(1) building capacity to address issues relating to climate justice; and

(2) carrying out any activity described in subsection (d).

(b) ELIGIBILITY.—To be eligible to receive a grant under subsection (a), an eligible entity shall be a tribal

government, local government, or nonprofit, community-based organization.

(c) APPLICATION.—To be eligible to receive a grant under subsection (a), an eligible entity shall submit to the Administrator an application at such time, in such manner, and containing such information as the Administrator may require, including—

(1) an outline describing the means by which the project proposed by the eligible entity will—

(A) with respect to climate justice issues at the local level, increase the understanding of the environmental justice community at which the eligible entity will conduct the project;

(B) improve the ability of the environmental justice community to address each issue described in subparagraph (A);

(C) facilitate collaboration and cooperation among various stakeholders (including members of the environmental justice community); and

(D) support the ability of the environmental justice community to proactively plan and implement climate justice initiatives;

(2) a proposed budget for each activity of the project that is the subject of the application;

(3) a list of proposed outcomes with respect to the proposed project;

(4) a description of the ways by which the eligible entity may leverage the funds of the eligible entity, or the funds made available through a grant under this subsection, to develop a project that is capable of being sustained beyond the period of the grant; and

(5) a description of the ways by which the eligible entity is linked to, and representative of, the environmental justice community at which the eligible entity will conduct the project.

(d) USE OF FUNDS.—An eligible entity may only use a grant under this subsection to carry out culturally and linguistically appropriate projects and activities that are driven by the needs, opportunities, and priorities of the environmental justice community at which the eligible entity proposes to conduct the project or activity to address climate justice concerns of the environmental justice community, including activities—

(1) to create or develop collaborative partnerships;

(2) to educate and provide outreach services to the environmental justice community on climate justice;

(3) to identify and implement projects to address climate justice concerns, including community solar and wind energy projects, energy efficiency, home and building electrification, home and building weatherization, energy storage, solar and wind energy supported microgrids, battery electric vehicles, electric vehicle charging infrastructure, natural infrastructure, and climate resilient infrastructure.

(e) LIMITATIONS ON AMOUNT.—The amount of a grant under this section may not exceed $2,000,000 for any grant recipient.

(f) REPORT.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, and annually thereafter, the Administrator shall submit to the Committees on Energy and Commerce and Natural Resources of the House of Representatives and the Committees on Environment and Public Works and Energy and Natural Resources of the Senate a report describing the ways by which the grant program under this subsection has helped eligible entities address issues relating to energy and climate justice.

(2) PUBLIC AVAILABILITY.—The Administrator shall make each report required under paragraph (1)

available to the public (including by posting a copy of the report on the website of the Environmental Protection Agency).

(g) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection $1,000,000,000 for each of fiscal years 2021 through 2025. The Administrator may not use more than 2 percent of the amount appropriated for each fiscal year for administrative expenses, including outreach and technical assistance to eligible entities.

SEC. 11019. ENVIRONMENTAL JUSTICE FOR COMMUNITIES OVERBURDENED BY ENVIRONMENTAL VIOLATIONS.

(a) IDENTIFICATION OF COMMUNITIES.—Not later than 180 days after the date of enactment of this section, the Administrator shall, in consultation with the Advisory Council and co-regulators in State and local agencies, identify at least 100 communities—

(1) that are environmental justice communities; and

(2) in which there have been over the previous 5 years a number of violations of environmental law that the Administrator determines to be greater than the national average of such violations.

(b) ANALYSIS AND RECOMMENDATIONS.—Not later than 1 year after the enactment of this section, with respect to each community identified under subsection (a), and in consultation with the Advisory Council, the Administrator shall—

(1) undertake an analysis of the conditions which have led to the number of violations identified under subsection (a)(1), including through community-based science implemented through engagement with the residents of each such community;

(2) identify the root cause of the number of violations described under subsection (a)(1); and

(3) recommend measures that the Administrator shall take, in coordination with co-regulators in State and local agencies, to reduce the number of violations of environmental law to a number that the Administrator determines to be significantly below the national average.

(c) IMPLEMENTATION.—Not later than 2 years after the date of enactment of this section, the Administrator shall complete the implementation of the measures identified under subsection (b)(3).

TITLE XII—OTHER MATTERS

Subtitle A—Blue Collar to Green Collar Jobs Development

PART 1—OFFICE OF ECONOMIC IMPACT, DIVERSITY, AND EMPLOYMENT

SEC. 12101. NAME OF OFFICE.

(a) IN GENERAL.—Section 211 of the Department of Energy Organization Act (42 U.S.C. 7141) is amended—

(1) in the section heading, by striking ''MINORITY ECONOMIC IMPACT'' and inserting ''ECONOMIC IMPACT, DIVERSITY, AND EMPLOYMENT''; and

(2) in subsection (a), by striking ''Office of Minority Economic Impact'' and inserting ''Office of Economic Impact, Diversity, and Employment''.

(b) CONFORMING AMENDMENT.—The table of contents for the Department of Energy Organization Act is amended by amending the item relating to section 211 to read as follows:

''Sec. 211. Office of Economic Impact, Diversity, and Employment.''.

SEC. 12102. ENERGY WORKFORCE DEVELOPMENT PROGRAMS.

Section 211 of the Department of Energy Organization Act (42 U.S.C. 7141) is amended—

(1) by redesignating subsections (f) and (g) as subsections (g) and (h), respectively; and

(2) by inserting after subsection (e) the following:

''(f) The Secretary, acting through the Director, shall support the establishment and execution of the programs described in sections 12111 and 12112 of the Clean Economy Jobs and Innovation Act.''.

SEC. 12103. AUTHORIZATION.

Subsection (h) of section 211 of the Department of Energy Organization Act (42 U.S.C. 7141), as redesignated by section 12102 of this Act, is amended by striking ''not to exceed $3,000,000 for fiscal year 1979, not to exceed $5,000,000 for fiscal year 1980, and not to exceed $6,000,000 for fiscal year 1981. Of the amounts so appropriated each fiscal year, not less than 50 percent shall be available for purposes of financial assistance under subsection (e).'' and inserting ''$100,000,000 for each of fiscal years 2021 through 2025.''.

PART 2—ENERGY WORKFORCE DEVELOPMENT

SEC. 12111. ENERGY WORKFORCE DEVELOPMENT.

(a) IN GENERAL.—Subject to the availability of appropriations for such purpose, the Secretary of Labor and the Secretary of Energy, acting through the Director of the Office of Economic Impact, Diversity, and Employment, shall jointly establish and carry out a comprehensive, nationwide program to improve education and train-

ing for jobs in energy-related industries, including manufacturing, engineering, construction, and retrofitting jobs in such energy-related industries in order to the increase number of skilled workers trained to work in such energy-related industries, including by—

(1) encouraging underrepresented groups, including religious and ethnic minorities, women, veterans, individuals with disabilities, unemployed energy workers, and socioeconomically disadvantaged individuals to enter into the science, technology, engineering, and mathematics (in this section referred to as ''STEM'') fields;

(2) encouraging the Nation's educational institutions to equip students with the skills, mentorships, training, and technical expertise necessary to fill the employment opportunities vital to managing and operating the Nation's energy-related industries;

(3) providing students and other candidates for employment with the necessary skills and certifications for skilled jobs in such energy-related industries; and

(4) strengthening and more fully engaging Department of Energy programs and laboratories in

carrying out the Department's Minorities in Energy Initiative.

(b) DIRECT ASSISTANCE.—

(1) IN GENERAL.—In carrying out the program established under subsection (a), the Secretaries may provide financial assistance awards, technical assistance, and other assistance the Secretaries determine appropriate, to educational institutions and training programs and providers, including those serving unemployed and underemployed energy workers.

(2) DISTRIBUTION.—The Secretaries shall distribute assistance described in paragraph (1) in a manner proportional to the needs of energy-related industries and demand for jobs in energy-related industries, consistent with information developed under subsection (e), and to the extent practicable, ensure a geographically diverse distribution, including a geographically diverse distribution among regions of the country and among urban, suburban, and rural areas.

(c) PRIORITY.—In carrying out the program established under subsection (a) the Secretaries shall prioritize the education and training of individuals from underrepresented populations for jobs in energy-related industries.

(d) COLLABORATION AND OUTREACH.—In carrying out the program established under subsection (a), the Secretaries shall—

(1) collaborate with—

(A) to the maximum extent possible, State or local workforce development boards and State workforce agencies, to maximize program efficiency;

(B) educational institutions and training programs and providers; and

(C) employers and labor organizations in energy-related industries providing opportunities to participate in internships, fellowships, traineeships, and apprenticeships to students, including students of minority-serving institutions and unemployed or underemployed energy workers, and other candidates, such as underrepresented populations; and

(2) conduct outreach activities to—

(A) encourage individuals from underrepresented populations and unemployed or underemployed energy workers to enter into the STEM fields; and

(B) encourage and foster collaboration, mentorships, and partnerships among energy-

related industries, and training programs and providers, that provide effective training programs for jobs in energy-related industries and educational institutions that seek to establish these types of programs in order to share best practices and approaches that best suit local, State, and national needs.

(e) CLEARINGHOUSE.—

(1) ESTABLISHMENT.—In carrying out the program established under subsection (a), the Secretary of Labor, in collaboration with Secretary of Energy, the Secretary of Education, the Secretary of Commerce, and the Director of the Bureau of the Census, and energy-related industries, shall establish a clearinghouse on a publicly accessible website to—

(A) develop, maintain, and update information and other resources, by State and by region, on—

(i) training programs for jobs in energy-related industries; and

(ii) the current and future workforce needs of energy-related industries, and job opportunities in such energy-related industries, including identification of jobs in en-

ergy-related industries for which there is the greatest demand; and

(B) act as a resource for educational institutions and training programs and providers that would like to develop and implement training programs for such jobs.

(2) REPORT.—The Secretaries shall annually publish a report on the information and other resources developed, maintained, and updated on the clearinghouse established under paragraph (1), including—

(A) a report providing comprehensive and detailed description of the workforce needs of such energy-related industries, and job opportunities in such energy-related industries, by State and by region; and

(B) publish an annual report on job creation in the energy-related industries described in subsection (f)(1).

(f) GUIDELINES TO DEVELOP SKILLS FOR AN ENERGY INDUSTRY WORKFORCE.—

(1) IN GENERAL.—In carrying out the program established under subsection (a), the Secretaries, in collaboration with the Secretary of Education, the Secretary of Commerce, and the National Science

Foundation, shall develop voluntary guidelines or best practices for educational institutions to help provide students with the skills necessary for jobs in energy-related industries, including jobs in—

(A) the energy efficiency industry, including jobs in energy efficiency (including architecture, design, and construction of new energy efficient buildings), conservation, weatherization, retrofitting, inspecting, auditing, and software development;

(B) the renewable energy industry, including jobs in the development, engineering, manufacturing, and production of energy from renewable energy sources (such as solar, hydropower, wind, and geothermal energy);

(C) the community energy resiliency industry, including jobs in the installation of rooftop solar, in battery storage, and in microgrid technologies;

(D) the fuel cell and hydrogen energy industry;

(E) the advanced automotive technology industry, including jobs relating to electric vehicle batteries, connectivity and automation, and advanced combustion engines;

(F) the manufacturing industry, including jobs as operations technicians, in operations and design in additive manufacturing, 3–D printing, and advanced composites and advanced aluminum and other metal alloys, and in industrial energy efficiency management systems, including power electronics, and other innovative technologies;

(G) the chemical manufacturing industry, including jobs in construction (such as welders, pipefitters, and tool and die makers), as instrument and electrical technicians, machinists, chemical process operators, engineers, quality and safety professionals, and reliability engineers;

(H) the utility industry, including jobs in smart grid technology, cybersecurity management, and the generation, transmission, and distribution of electricity and natural gas, such as electricians and utility dispatchers, technicians, operators, lineworkers, engineers, scientists, and information technology specialists;

(I) the alternative fuels industry, including jobs in biofuel and bioproducts development and production;

(J) the pipeline industry, including jobs in pipeline construction and maintenance and jobs as engineers and technical advisors;

(K) the nuclear energy industry, including jobs as scientists, engineers, technicians, mathematicians, and security personnel;

(L) the oil and gas industry, including jobs as scientists, engineers, technicians, mathematicians, petrochemical engineers, and geologists; and

(M) the coal industry, including jobs as coal miners, engineers, developers and manufacturers of state-of-the-art coal facilities, technology vendors, coal transportation workers and operators, and mining equipment vendors.

(2) ENERGY EFFICIENCY AND CONSERVATION INITIATIVES.—The guidelines or best practices developed under paragraph (1) shall include grade-specific guidelines for elementary schools and secondary schools for teaching energy efficiency technology, architecture, design, and construction of new energy-efficient buildings and building energy retrofits, manufacturing efficiency technology, community energy resiliency, and conservation initiatives.

(3) STEM EDUCATION.—The guidelines or best practices developed under paragraph (1) shall promote STEM education and energy related programs of study in educational institutions as it relates to job opportunities in energy-related industries listed under such paragraph.

(g) OUTREACH TO MINORITY SERVING INSTITUTIONS.—In carrying out the program established under subsection (a), the Secretaries shall—

(1) give special consideration to increasing outreach to minority-serving institutions;

(2) make resources available to minority-serving institutions with the objective of increasing the number of skilled minorities and women trained for jobs in energy-related industries, including manufacturing, engineering, construction, and retrofitting jobs in such energy-related industries;

(3) encourage energy-related industries to improve the opportunities for students of minority-serving institutions to participate in industry internships, apprenticeships, and cooperative work-study programs; and

(4) partner with the Department of Energy laboratories to increase underrepresented groups' participation in internships, fellowships, traineeships,

and employment at all Department of Energy laboratories.

(h) OUTREACH TO DISPLACED, UNEMPLOYED AND UNDEREMPLOYED ENERGYWORKERS.—In carrying out the program established under subsection (a), the Secretaries shall—

(1) give special consideration to increasing outreach to employers and job trainers preparing displaced, unemployed, and underemployed energy workers for emerging jobs in energy-related industries, including manufacturing, engineering, construction, and retrofitting jobs in such energy-related industries;

(2) make resources available to institutions serving displaced and unemployed energy workers with the objective of increasing the number of individuals trained for jobs in energy-related industries, including manufacturing, engineering, construction, and retrofitting jobs in such energy-related industries; and

(3) encourage energy-related industries to improve opportunities for displaced and unemployed energy workers to participate in industry internships, apprenticeships, and work-study programs.

(i) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $15,000,000 for each of fiscal years 2021 through 2025.

SEC. 12112. ENERGY WORKFORCE GRANT PROGRAM.

(a) PROGRAM.—

(1) ESTABLISHMENT.—Subject to the availability of appropriations for such purpose, the Secretary of Labor and the Secretary of Energy, acting through the Director of the Office of Economic Impact, Diversity, and Employment, shall jointly establish and carry out a program to provide grants to eligible entities to pay the eligible wages of, or eligible stipends for, individuals during the time period that such individuals are receiving training to work in the renewable energy sector, energy efficiency sector, or grid modernization sector.

(2) GUIDELINES.—Not later than 60 days after the date of enactment of this Act, the Secretaries, in consultation with stakeholders, contractors, and organizations that work to advance existing residential energy efficiency, shall establish guidelines to identify training that is eligible for purposes of the program established pursuant to paragraph (1).

(b) ELIGIBILITY.—

(1) IN GENERAL.—To be eligible to receive a grant under the program established under subsection (a), an eligible entity shall be directly involved with energy efficiency or renewable energy technology and provide services related to—

(A) renewable electric energy generation, including solar, wind, geothermal, hydropower, and other renewable electric energy generation technologies;

(B) energy efficiency, including energy-efficient lighting, heating, ventilation, and air conditioning, air source heat pumps, advanced building materials, insulation and air sealing, and other high-efficiency products and services, including auditing and inspection, architecture, design, and construction of new energy efficient buildings and building energy retrofits;

(C) grid modernization or energy storage, including smart grid, microgrid and other distributed energy solutions, demand response management, and home energy management technology; or

(D) fuel cell and hybrid fuel cell generation.

(2) DEFINITIONS.—In this subsection, the following terms apply:

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

(i) an employer in an industry described in paragraph (1); or

(ii) a labor organization, a joint-labor management organization, a State or local workforce board, or a training program or provider that provides training to individuals to work for an employer described in clause (i), or works on behalf of any such employers.

(B) ELIGIBLE STIPEND.—The term ''eligible stipend'' means a stipend that meets the criteria identified pursuant to the guidelines established under subsection (a)(2).

(C) ELIGIBLE WAGES.—The term ''eligible wages'' means wages that meet the criteria identified pursuant to the guidelines established under subsection (a)(2).

(c) USE OF GRANTS.—

(1) ELIGIBLE WAGES.—An eligible entity with—

(A) 20 or fewer employees may use a grant provided under the program established under subsection (a) to pay up to—

(i) 45 percent of an employee's eligible wages for the duration of the applicable training for such employee, if the training is provided by the eligible entity; and

(ii) 90 percent of an employee's eligible wages for the duration of the applicable training for such employee, if the training is provided by an entity other than the eligible entity;

(B) 21 to 99 employees may use a grant provided under the program established under subsection (a) to pay up to—

(i) 37.5 percent of an employee's eligible wages for the duration of the applicable training for such employee, if the training is provided by the eligible entity; and

(ii) 75 percent of an employee's eligible wages for the duration of the applicable training for such employee, if the training is provided by an entity other than the eligible entity; and

(C) 100 employees or more may use a grant provided under the program established under subsection (a) to pay up to—

(i) 25 percent of an employee's eligible wages for the duration of the applicable training for such employee, if the training is provided by the eligible entity; and

(ii) 50 percent of an employee's eligible wages for the duration of the applicable training for such employee, if the training is provided by an entity other than the eligible entity.

(2) STIPEND.—An eligible entity may use a grant provided under the program established under subsection (a) to pay up to 100 percent of an eligible stipend for an individual for the duration of the applicable training for such individual.

(d) PRIORITY FOR TARGETED COMMUNITIES.—In providing grants under the program established under subsection (a), the Secretary shall give priority to an eligible entity that—

(1) recruits or trains individuals who are—

(A) from the community that the eligible entity serves; and

(B)(i) from underrepresented populations; or

(ii) unemployed or underemployed energy workers; and

(2) will provide individuals receiving training with the opportunity to obtain or retain employment at an eligible entities.

(e) LIMIT.—An eligible entity may not receive more than $100,000 under the program established under subsection (a) per fiscal year.

(f) REPORT.—The Secretaries shall submit to Congress, annually for each year the program established under subsection (a) is carried out, a report on such program, including—

(1) an assessment of such program for the previous year, including the number of jobs filled by individuals trained pursuant to such program; and

(2) recommendations on how to improve such program.

(g) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $50,000,000 for each of fiscal years 2021 through 2025.

(h) MONITORING.—The Secretary of Labor, in consultation with the Secretary of Energy, shall collect data to monitor current and future trends and shortages within

the clean energy technology industry, which includes skilled technical personnel, electric power engineers, transmission engineers, and other occupations or fields of work under—

(1) the agriculture and forestry industry;

(2) the electric utility industry;

(3) the manufacturing industry;

(4) the wholesale trade industry;

(5) the professional and business services industry; and

(6) the manufacturing and operation and maintenance industries for component parts of clean energy technologies.

(i) REPORT ON CURRENT TRENDS AND SHORTAGES.—Not later than 120 days after the date of enactment of this Act, and on a quarterly basis thereafter, the Secretary shall submit to Congress, based on the data collected under subsection (h), a report on—

(1) trends and shortages as of the date of such report, and recommendations to prepare the workforce to address such trends and shortages to meet the demands of a clean energy economy; and

(2) other recommendations the Secretary determines appropriate.

(j) REPORT ON FUTURE TRENDS AND SHORTAGES.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to Congress, based on the data collected under subsection (h), a report on—

(1) trends and shortages projected in the next 10 years, and recommendations to address such trends and shortages to prepare the workforce to meet the demands of a clean energy economy; and

(2) other recommendations the Secretary determines appropriate.

SEC. 12113. DEFINITIONS.

In this part:

(1) CAREER AND TECHNICAL EDUCATION.—The term ''career and technical education'' has the meaning given such term in section 3 or the Carl D. Perkins Career and Technical Education Act of 2006 (20 U.S.C. 2302).

(2) COMMUNITY-BASED ORGANIZATION.—The term ''community-based organization'' has the meaning given such term in section 3 of the Workforce Innovation and Opportunity Act (29 U.S.C. 3102).

(3) TRAINING PROGRAMS AND PROVIDERS.—The term ''training programs and providers'' means State or local workforce development boards, com-

munity-based organizations, qualified youth or conservation corps, Job Corps authorized under subtitle C of title I the Workforce Innovation and Opportunity Act (29 U.S.C. 3101 et seq.), labor organizations, joint-labor management organizations, pre-apprenticeship programs, and apprenticeship programs.

(4) EDUCATIONAL INSTITUTION.—The term ''educational institution'' means an elementary school, secondary school, or institution of higher education, including educational institutions providing career and technical education programs and programs of study.

(5) ELEMENTARY SCHOOL AND SECONDARY SCHOOL.—The terms ''elementary school'' and ''secondary school'' have the meanings given such terms in section 8101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801).

(6) ENERGY-RELATED INDUSTRY.—The term ''energy-related industry'' includes the energy efficiency industry, renewable energy industry, community energy resiliency industry, fuel cell and hydrogen energy industry, advanced automotive technology industry, chemical manufacturing industry, electric utility industry, gas utility industry, alter-

native fuels industry, pipeline industry, nuclear energy industry, oil and gas industry, and coal industry.

(7) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the meaning given such term in section 102 of the Higher Education Act of 1965 (20 U.S.C. 1002), except that such term does not include institutions described in subparagraph (A) or (C) of subsection (a)(1) of such section 102.

(8) JOBS IN ENERGY-RELATED INDUSTRIES.—The term ''jobs in energy-related industries'' includes manufacturing, engineering, construction, and retrofitting jobs in energy-related industries.

(9) LABOR ORGANIZATION.—The term ''labor organization'' has the meaning given such term in section 2 of the National Labor Relations Act (29 U.S.C. 152).

(10) MINORITY-SERVING INSTITUTION.—The term ''minority-serving institution'' means an institution of higher education that is of one of the following:

(A) A Hispanic-serving institution (as defined in section 502(a) of the Higher Education Act of 1965 (20 U.S.C. 1101a(a))).

(B) A Tribal College or University (as defined in section 316(b) of the Higher Education Act of 1965 (20 U.S.C. 1059c(b))).

(C) An Alaska Native-serving institution (as defined in section 317(b) of the Higher Education Act of 1965 (20 U.S.C. 1059d(b))).

(D) A Native Hawaiian-serving institution (as defined in section 317(b) of the Higher Education Act of 1965 (20 U.S.C. 1059d(b))).

(E) A Predominantly Black Institution (as defined in section 318(b) of the Higher Education Act of 1965 (20 U.S.C. 1059e(b))).

(F) A Native American-serving nontribal institution (as defined in section 319(b) of the Higher Education Act of 1965 (20 U.S.C. 1059f(b))).

(G) An Asian American and Native American Pacific Islander-serving institution (as defined in section 320(b) of the Higher Education Act of 1965 (20 U.S.C. 1059g(b))).

(H) A historically Black college or university (having the meaning given the term ''part B institution'' in section 322 of the Higher Education Act of 1965 (20 U.S.C. 1061)).

(11) QUALIFIED YOUTH OR CONSERVATION CORPS.—The term ''qualified youth or conservation corps'' has the meaning given such term in section 203(11) of the Public Lands Corps Act of 1993 (16 U.S.C. 1722(11)).

(12) SECRETARIES.—The term ''Secretaries'' means the Secretary of Labor and the Secretary of Energy.

(13) STATE OR LOCAL WORKFORCE DEVELOPMENT BOARD.—The term ''State or workforce development board'' or ''local workforce development board'' have the meanings given the terms ''State board'' and ''local board'', respectively, in section 3 of the Workforce Innovation and Opportunity Act (29 U.S.C. 3102).

(14) STATE WORKFORCE AGENCY.—The term ''State workforce agency'' means the State agency with responsibility for workforce investment activities under chapters 2 and 3 of subtitle B of title I of the Workforce Innovation and Opportunity Act (29 U.S.C. 3121 et seq., 3131 et seq.).

(15) STEM.—The term ''STEM'' means science, technology, engineering, and mathematics.

(16) UNDERREPRESENTED POPULATIONS.—The term ''underrepresented populations'' means a

group of individuals (such as a group of individuals from the same gender or race), the members of which comprise fewer than 25 percent of the individuals employed in occupations in energy-related industries.

SEC. 12114. RENEWABLE ENERGY TRANSITION GRANT PROGRAM.

(a) IN GENERAL.—The Secretary of Energy, in coordination with the Secretary of Labor, shall establish a grant program for local governments for the purpose of developing a plan to transition workers from employment in fossil fuel industries to employment in sustainable industries.

(b) ELIGIBILITY.—The Secretary of Energy may award grants under subsection (a) to local governments—

(1) that establish industry or sector partnerships (as defined in section 3 of the Workforce Innovation and Opportunity Act (29 U.S.C. 3102));

(2) that are in localities that the Secretary of Energy determines to have a percentage of traditional energy sector jobs that is average or above average relative to the United States.

(c) DETERMINATION OF PERCENTAGE OF TRADITIONAL ENERGY SECTOR JOBS.—In making the determination under subsection (b)(2), the Secretary of Energy

shall take into consideration information from the report entitled ''U.S. Energy and Employment Report'' issued by the Secretary in January, 2017.

(d) USE OF FUNDS.—Funds under subsection (a) may be used for the following purposes:

(1) To develop a transition plan described in subsection (a).

(2) To develop an apprenticeship program to train individuals employed in fossil fuel industries and individuals who are new to the workforce for jobs in sustainable industries.

(e) TRANSITION PLAN REQUIREMENTS.—A transition plan funded under subsection (a) shall include a plan for unemployment insurance, job transition training, and community services for the communities affected by the transition.

(f) AUTHORIZATION.—There are authorized to be appropriated such sums as necessary to carry out this section.

SEC. 12115. ENERGY JOBS COUNCIL AND ANNUAL ENERGY EMPLOYMENT REPORT.

(a) ENERGY JOBS COUNCIL.—

(1) ESTABLISHMENT.—Not later than 90 days after the date of enactment of this Act, the Secretary of Energy (referred to in this section as the

''Secretary'') shall establish a council, to be known as the ''Energy Jobs Council'' (referred to in this section as the ''Council'').

(2) MEMBERSHIP.—The Council shall be comprised of—

(A) to be appointed by the Secretary—

(i) one or more representatives of the Energy Information Administration; and

(ii) one or more representatives of a State energy office that are serving as members of the State Energy Advisory Board established by section 365(g) of the Energy Policy and Conservation Act (42 U.S.C. 6325(g));

(B) to be appointed by the Secretary of Commerce—

(i) one or more representatives of the Department of Commerce; and

(ii) one or more representatives of the Bureau of the Census;

(C) one or more representatives of the Bureau of Labor Statistics, to be appointed by the Secretary of Labor; and

(D) one or more representatives of any other Federal agency the assistance of which is

required to carry out this Act, as determined by the Secretary, to be appointed by the head of the applicable agency.

(b) SURVEY AND ANALYSIS.—

(1) IN GENERAL.—The Council shall—

(A) conduct a survey of employers in the energy, energy efficiency, renewable energy, and motor vehicle sectors of the economy of the United States; and

(B) perform an analysis of the employment figures and demographics in those sectors, including the number of personnel in each sector who devote a substantial portion of working hours, as determined by the Secretary, to compliance matters.

(2) METHODOLOGY.—In conducting the survey and analysis under paragraph (1), the Council shall employ a methodology that—

(A) was approved in 2016 by the Office of Management and Budget for use in the document entitled ''OMB Control Number 1910–5179'';

(B) uses a representative, stratified sampling of businesses in the United States; and

(C) is designed to elicit a comparable number of responses from businesses in each State and with the same North American Industry Classification System codes as were received for the 2016 and 2017 reports entitled ''U.S. Energy and Employment Report''.

(3) CONSULTATION.—In conducting the survey and analysis under paragraph (1), the Council shall consult with key stakeholders, including—

(A) as the Council determines to be appropriate, the heads of relevant Federal agencies and offices, including—

(i) the Secretary of Commerce;

(ii) the Secretary of Transportation;

(iii) the Director of the Bureau of the Census;

(iv) the Commissioner of the Bureau of Labor Statistics; and

(v) the Administrator of the Environmental Protection Agency;

(B) States;

(C) the State Energy Advisory Board established by section 365(g) of the Energy Policy and Conservation Act (42 U.S.C. 6325(g)); and

(D) energy industry trade associations.

(c) REPORT.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, and annually thereafter, the Secretary shall—

(A) make publicly available on the website of the Department of Energy a report, to be entitled the ''U.S. Energy and Employment Report'', describing the employment figures and demographics in the energy, energy efficiency, and motor vehicle sectors of the United States based on the survey and analysis conducted under subsection (b); and

(B) subject to the requirements of the Confidential Information Protection and Statistical Efficiency Act of 2002 (44 U.S.C. 3501 note; Public Law 107–347), make the data collected by the Council publicly available on the website of the Department of Energy.

(2) CONTENTS.—

(A) IN GENERAL.—The report under paragraph (1) shall include employment figures and demographic data for—

(i) the energy sector of the economy of the United States, including—

(I) the electric power generation and fuels sector; and

(II) the transmission, storage, and distribution sector;

(ii) the energy efficiency sector of the economy of the United States; and

(iii) the motor vehicle sector of the economy of the United States.

(B) INCLUSION.—With respect to each sector described in subparagraph (A), the report under paragraph (1) shall include employment figures and demographic data sorted by—

(i) each technology, subtechnology, and fuel type of those sectors; and

(ii) subject to the requirements of the Confidential Information Protection and Statistical Efficiency Act of 2002 (44 U.S.C. 3501 note; Public Law 107–347)—

(I) each State;

(II) each territory of the United States;

(III) the District of Columbia; and

(IV) each county (or equivalent jurisdiction) in the United States.

PART 3—MEASURING GREEN COLLAR JOB DEVELOPMENT

SEC. 12121. MEASURING GREEN JOBS.

(a) IN GENERAL.—The Secretary of Labor, in consultation with the Secretary of Energy, and acting through the Bureau of Labor Statistics, where appropriate, shall collect and analyze labor market data to track workforce trends resulting from renewable energy and energy efficiency technology initiatives carried out under this section. Activities carried out under this section shall include the following:

(1) Tracking and documentation of academic and occupational competencies as well as future skill needs with respect to renewable energy and energy efficiency technology.

(2) Tracking and documentation of occupational information and workforce training data with respect to renewable energy and energy efficiency technology.

(3) Collaborating with State agencies, workforce investments boards, industry, organized labor, and community and nonprofit organizations to disseminate information on successful innovations for labor market services and worker training with respect to renewable energy and energy efficiency technology.

(4) Serving as a clearinghouse for best practices in workforce development, job placement and collaborative training partnerships.

(5) Encouraging the establishment of workforce training initiatives with respect to renewable energy and energy efficiency technologies.

(6) Linking research and development in renewable energy and energy efficiency technology with the development of standards and curricula for current and future jobs.

(7) Assessing new employment and work practices including career ladder and upgrade training as well as high performance work systems.

(8) Providing technical assistance and capacity building to national and State energy partnerships, including industry and labor representatives.

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section $10,000,000 for each fiscal years 2021 through 2025.

PART 4—CLEAN ENERGY ECONOMY WORKFORCE

SEC. 12131. CLEAN ENERGY ECONOMY WORKFORCE PROGRAM.

(a) DEFINITIONS.—In this section:

(1) COAL-RELATED FACILITY.—The term ''coal-related facility'' includes a coal mine or coal-fueled electric generating facility.

(2) COAL-RELATED GENERATING FACILITY.—The term ''coal-related industrial facility'' includes a facility in the manufacturing and transportation supply chains of a coal-related facility.

(3) ELIGIBLE ENTITY.—The term ''eligible entity'' means a National Laboratory, business, or labor organization that demonstrates success in placing graduates of pre-apprenticeship or apprenticeship programs in jobs relevant to such programs and—

(A) is directly involved with zero-emission electricity technology, energy efficiency, or other activity that results in a reduction in greenhouse gas emissions, as determined by the Secretary;

(B) works on behalf of a business or labor organization that is directly involved with zero emission electricity technology, energy efficiency, or other activity that results in a reduction in greenhouse gas emissions, as determined by the Secretary;

(C) provides services related to—

(i) zero emission electricity technology deployment and maintenance and energy efficiency;

(ii) grid modernization; or

(iii) reduction in greenhouse gas emissions through the use of zero-emission energy technologies;

(D) has knowledge of technician workforce needs of a National Laboratory or covered facility of the National Nuclear security Administration and the associated security requirements of such laboratory or facility;

(E) demonstrates experience in implementing and operating apprenticeship programs or pre-apprenticeship programs that provide a direct pathway to an energy-related career; or

(F) demonstrates success in placing graduates of pre-apprenticeship or apprenticeship programs in jobs relevant to such programs.

(4) ENERGY TRANSITION WORKER.—The term ''Energy Transition Worker'' means a worker, including workers employed by contractors or subcontractors, terminated, laid off from employment, or whose work hours have been reduced, on or after the date of enactment of this Act, from a coal-re-

lated facility, coal-related industrial facility or other energy related entity.

(5) NATIONAL LABORATORY.—The term ''National Laboratory'' means any of the following laboratories owned by the Department of Energy:

(A) Ames Laboratory.

(B) Argonne National Laboratory.

(C) Brookhaven National Laboratory.

(D) Fermi National Accelerator Laboratory.

(E) Idaho National Laboratory.

(F) Lawrence Berkeley National Laboratory.

(G) Lawrence Livermore National Laboratory.

(H) Los Alamos National Laboratory.

(I) National Energy Technology Laboratory.

(J) National Renewable Energy Laboratory.

(K) Oak Ridge National Laboratory.

(L) Pacific Northwest National Laboratory.

(M) Princeton Plasma Physics Laboratory.

(N) Sandia National Laboratories.

(O) Savannah River National Laboratory.

(P) Stanford Linear Accelerator Center.

(Q) Thomas Jefferson National Accelerator Facility.

(6) PROGRAM.—The term ''program'' means the program established under subsection (b).

(b) ESTABLISHMENT.—The Secretary of Energy, in consultation with the Secretary of Labor, shall establish a program to provide competitively awarded cost shared grants to eligible entities to pay for pre-apprenticeship training for individuals or on-the-job training of a new or existing employee—

(1) to work in zero emission electricity generation, energy efficiency, or grid modernization;

(2) to work otherwise on the reduction of greenhouse gas emissions; or

(3) to participate in a pre-apprenticeship program that provides a direct pathway to an energy-related career in construction through one or more apprenticeship programs.

(c) GRANTS.—

(1) IN GENERAL.—An eligible entity desiring a grant under the program shall submit to the Secretary of Energy an application at such time, in

such manner, and containing such information a the Secretary of Energy may require.

(2) PRIORITY FOR TARGETED COMMUNITIES.—In providing grants under the program, the Secretary of Energy shall give priority to an eligible entity that—

(A) recruits employees—

(i) from the 1 or more communities that are served by the eligible entity; and

(ii) that are minorities, women, veterans, individuals from Indian Tribes or Tribal organizations, or energy transition workers;

(B) provides trainees with the opportunity to obtain real-world experience; or

(C) has fewer than 100 employees; and

(D) in the case of a pre-apprenticeship program, demonstrates—

(i) a multi-year record of successfully recruiting energy transition workers, minorities, women, and veterans for training and supporting such individuals to a successful completion of a pre-apprenticeship program; and

(ii) a successful multi-year record of placing the majority of pre-apprenticeship program graduates into apprenticeship programs in the construction industry.

(3) USE OF GRANT FOR FEDERAL SHARE.—

(A) IN GENERAL.—An eligible entity shall use a grant received under the program to—

(i) pay the Federal share of the cost of providing pre-apprenticeship training or on-the-job training for an individual, in accordance with subparagraph(B); or

(ii) in the case of a pre-apprenticeship program—

(I) recruiting minorities, women, and veterans for training;

(II) supporting those individuals in the successful completion of the pre-apprenticeship program; and

(III) carrying out any other activity of the pre-apprenticeship program, as determined to be appropriate by the Secretary of Labor, in consultation with the Secretary.

(B) FEDERAL SHARE AMOUNT.—The Federal share described in subparagraph (A)(i) shall not exceed—

(i) in the case of an eligible entity with 20 or fewer employees, 45 percent of the cost of on-the-job-training for an employee;

(ii) in the case of an eligible entity with not fewer than 21 employees and not more than 99 employees, 37.5 percent of the cost of on-the-job-training for an employee;

(iii) in the case of an eligible entity with not fewer than 100 employees, 20 percent of the cost of on-the-job-training for an employee; and

(iv) in the case of an eligible entity that administers a pre-apprenticeship program, 75 percent of the cost of the pre-apprenticeship program.

(4) EMPLOYER PAYMENT OF NON-FEDERAL SHARE.—

(A) IN GENERAL.—The non-Federal share of the cost of providing on-the-job training for an employee under a grant received under the

program shall be paid in cash or in kind by the employer of the employee receiving the training or by a nonprofit organization.

(B) INCLUSIONS.—The non-Federal share described in subparagraph (A) may include the amount of wages paid by the employer to the employee during the time that the employee is receiving on-the-job training, as fairly evaluated by the Secretary of Labor.

(5) CONSTRUCTION.—In providing grants under the program for training, recruitment, and support relating to construction, eligible entities shall only include pre-apprenticeship programs that have an articulation agreement with one or more apprenticeship programs.

(6) GRANT AMOUNT.—An eligible entity may not receive more than $1,000,000 per fiscal year in grant funds under the program.

(d) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated $25,000,000 to the Secretary of Energy to carry out the program for each of the fiscal years 2021 through 2030.

Subtitle B—Buy American and Wage Rate Requirements

SEC. 12201. USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS.

(a) None of the funds made available pursuant to this Act, or provisions of law added or amended by this Act, may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States.

(b) Subsection (a) shall not apply in any case or category of cases in which the head of the Federal department or agency involved finds that—

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron, steel, and the relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron, steel, and manufactured goods produced in the United States will increase the cost of the overall project by more than 25 percent.

(c) If the head of a Federal department or agency determines that it is necessary to waive the application

of subsection (a) based on a finding under subsection (b), the head of the department or agency shall publish in the Federal Register a detailed written justification as to why the provision is being waived.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

SEC. 12202. WAGE RATE REQUIREMENTS.

Notwithstanding any other provision of law and in a manner consistent with other provisions in this Act, all laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government pursuant to this Act, or provisions of law added or amended by this Act, shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code. With respect to the labor standards specified in this section, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40, United States Code.

SEC. 12203. APPRENTICESHIPS.

(a) IN GENERAL.—Any funds made available under this Act to fund an apprenticeship or pre-apprenticeship program shall only be used for, or provided to, apprenticeship and pre-apprenticeship programs as defined this section, including any funds awarded for the purposes of grants, contracts, or cooperative agreements, or the development, implementation, or administration of a program funded in whole or part by federal funds under this Act.

(b) APPRENTICESHIP DEFINED.—In this Act, the term ''apprenticeship'' means an apprenticeship—

(1) registered under the Act of August 16, 1937 (commonly known as the ''National Apprenticeship Act''; 50 Stat. 664, chapter 663; 29 U.S.C. 50 et seq.); and

(2) that complies with the requirements of subpart A of part 29 of title 29, Code of Federal Regulations, and part 30 of such title (as in effect on September 18, 2020).

(c) PRE-APPRENTICESHIP DEFINED.—In this Act, the term ''pre-apprenticeship'' or ''pre-apprenticeship program'' means a training model or program that—

(1) is designed to prepare participants to enter an apprenticeship program;

(2) is carried out by a sponsor that has a written agreement with 1 or more sponsors of apprenticeship programs; and

(3) includes each of the following:

(A) Training (including a curriculum for the training) aligned with industry standards related to an apprenticeship program and reviewed and approved annually by sponsors of the apprenticeship program that are parties to the written agreement, and that will prepare participants by teaching the skills and competencies needed to enter 1 or more apprenticeship programs.

(B) Hands-on training and theoretical education for participants that does not displace a paid employee.

(C) A formal agreement with a sponsor of an apprenticeship program that would enable participants who successfully complete the preapprenticeship program—

(i) to enter into the apprenticeship program if a place in the program is available and if the participant meets the qualifications of the apprenticeship program; and

(ii) to earn credits towards the apprenticeship program.

Subtitle C—Natural Resources

SEC. 12301. OFFSHORE WIND CAREER TRAINING GRANT PROGRAM.

(a) GRANTS AUTHORIZED.—Beginning 180 days after the date of the enactment of this section, the Secretary may award offshore wind career training grants to eligible entities for the purpose of establishing or expanding educational or career training programs that provide individuals in such programs skills and competencies necessary for employment in the offshore wind industry.

(b) ALLOCATION OF GRANTS.—

(1) LIMITATION ON GRANT QUANTITY AND SIZE.—An eligible entity may not be awarded—

(A) more than one grant under this section for which the eligible entity is the lead applicant; or

(B) a grant under this section in excess of $2,500,000.

(2) ALLOCATION TO COMMUNITY COLLEGES.—Not less than 25 percent of the total amount awarded under this section for a fiscal year shall be awarded to eligible entities that are community colleges.

(c) PARTNERSHIPS.—An eligible entity seeking to receive a grant under this section shall establish or partner with one or more of the following:

(1) Another eligible entity (including an eligible entity that is a community college).

(2) A State or local government agency responsible for education, workforce development or offshore wind energy activities.

(3) A qualified intermediary.

(d) USE OF GRANT.—An eligible entity may use a grant awarded under this section for the following activities:

(1) Occupational skills training, including curriculum development and class-room instruction.

(2) Safety and health training.

(3) The provision of English language acquisition and employability skills.

(4) Individual referral and tuition assistance for a community college training program.

(5) Career pathway development or expansion for offshore wind industry occupations.

(6) The development or expansion of work-based learning or incumbent worker training programs aligned with career pathways in a field related to the offshore wind industry, such as paid in-

ternships, registered apprenticeships and programs articulating to an apprenticeship program, customized training, or transitional jobs.

(7) Curriculum development at the under-graduate and postgraduate levels.

(8) Development and support of offshore wind energy major, minor, or certificate programs.

(9) Such other activities, as determined by the Secretary, to meet the purposes of this section.

(e) GRANT PROPOSALS.—

(1) SUBMISSION PROCEDURE FOR GRANT PROPOSALS.—An eligible entity seeking to receive a grant under this section shall submit a grant proposal to the Secretary at such time, in such manner, and containing such information as the Secretary may require.

(2) CONTENT OF GRANT PROPOSALS.—A grant proposal submitted to the Secretary under this section shall include a detailed description of—

(A) the specific project for which the grant proposal is submitted, including the manner in which the grant will be used to develop, offer, or improve an educational or career training program that will provide individuals in such

program the skills and competencies necessary for employment in the offshore wind industry;

(B) any previous experience of the eligible entity in providing such educational or career training programs;

(C) the extent to which such project will meet the educational or career training needs;

(D) the quantitative data that demonstrates the demand for employment for such program in the geographic area served by the eligible entity, including wages and benefits for such employment;

(E) a description of the entities involved in the industry or sector partnership; and

(F) a description of the activities the eligible entity will carry out.

(f) CRITERIA FOR AWARD OF GRANTS.—

(1) IN GENERAL.—Subject to appropriations, the Secretary shall award grants under this section based on an evaluation of—

(A) the merits of the grant proposal;

(B) the available or projected employment opportunities, including the projected wages and benefits, available to individuals who complete the educational or career training program

that the eligible entity proposes to develop, offer, or improve; and

(C) the availability and capacity of existing educational or career training programs in the community to meet future demand for such programs.

(2) PRIORITY.—Priority in awarding grants under this section shall be given to an eligible entity that—

(A) is—

(i) an institution of higher education that has formed a partnership with a labor organization or joint-labor management organization; or

(ii) a labor organization or joint-labor management organization that has formed a partnership with an institute of higher education;

(B) has entered into a memorandum of understanding with one or more employers in the offshore wind industry to partner on the establishment or expansion of programs funded under this Act;

(C) is located in an economically distressed area;

(D) serves a high number or high percentage of individuals who are—

(i) dislocated workers (particularly workers dislocated from the offshore oil and gas, onshore fossil fuel, nuclear energy, or fishing industries);

(ii) veterans, members of the reserve components of the Armed Forces, or former members of such reserve components;

(iii) unemployed, underemployed, or disconnected;

(iv) individuals with barriers to employment;

(v) in-school and out-of-school youth; or

(vi) formerly incarcerated, adjudicated, nonviolent offenders;

(E) an eligible entity that proposes to serve a high percentage or number of low-income or minority students; or

(F) demonstration of or established plans for the eligible entity to be included on the list of eligible providers of training services described in section 122(d) of the Workforce In-

novation and Opportunity Act (29 U.S.C. 3152(d)).

(3) GEOGRAPHIC DISTRIBUTION.—The Secretary shall, to the extent practicable, award grants under this section in a manner that provides for a reasonable geographic distribution, except that the Secretary shall not be required to award grants equally among different regions of the United States.

(g) MATCHING REQUIREMENTS.—A grant awarded under this section may not be used to satisfy any non-Federal funds matching requirement under any other provision of law.

(h) GRANTEE DATA COLLECTION.—

(1) IN GENERAL.—A grantee, with respect to the educational or career training program for which the grantee received a grant under this section, shall collect and report to the Secretary on an annual basis the following:

(A) The number of participants enrolled in the educational or career training program.

(B) The number of participants that have completed the educational or career training programing the last 12 months.

(C) The services received by such participants, including a description of training, education, and supportive services.

(D) The amount spent by the grantee per participant.

(E) The percentage of job placement of participants in the offshore wind industry or related fields.

(F) The percentage of employment retention—

(i) if the eligible entity is not an institution of higher education, 1 year after completion of the educational or career training program; or

(ii) if the eligible entity is an institution of higher education, 1 year after completion of the educational or career training program or 1 year after the participant is no longer enrolled in such institution of higher education, whichever is later.

(G) The percentage of program participants who obtain a recognized postsecondary credential, or a secondary school diploma or its recognized equivalent during participation in or within 1 year after exit from the program.

(2) DISAGGREGATION OF DATA.—The data collected and reported under this subsection shall be disaggregated by each population specified in section 3(24) of the Workforce Innovation and Opportunity Act (29 U.S.C. 3102(24)) and by race, ethnicity, sex, and age.

(3) ASSISTANCE FROM SECRETARY.—The Secretary shall assist grantees in the collection of data under this subsection by making available, where practicable, low-cost means of tracking the labor market outcomes of participants (including through coordination with the Secretary of Labor) and by providing standardized reporting forms, where appropriate. The Secretary shall provide technical assistance and oversight to assist the eligible entities in applying for and administering grants.

(j) GUIDELINES.—Not later than 90 days after the date of the enactment of this section, the Secretary shall—

(1) promulgate guidelines for the submission of grant proposals; and

(2) publish and maintain such guidelines on a public website of the Secretary.

(k) REPORTING REQUIREMENT.—Not later than 18 months after the date of the enactment of this section, and every 2 years thereafter, the Secretary shall submit

a report to the Committee on Natural Resources of the House of Representatives, the Committee on Energy and Natural Resources of the Senate, the Committee on Education and Labor of the House of Representatives, and the Committee on Health, Education, Labor, and Pensions of the Senate on the grant program established by this section. The report shall include a description of the grantees and the activities for which grantees used a grant awarded under this section.

(l) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated for purposes of this section $25,000,000 for each of fiscal years 2021 through 2025. The Secretary may use not more than 2 percent of the amount appropriated for each fiscal year for administrative expenses, including the expenses of providing the technical assistance and oversight activities.

(m) DEFINITIONS.—In this section:

(1) COMMUNITY COLLEGE.—The term ''community college'' has the meaning given the term ''junior or community college'' in section 312(f) of the Higher Education Act of 1965 (20 U.S.C. 1058(f)).

(2) ELIGIBLE ENTITY.—The term ''eligible entity'' means an entity that is—

(A) an institution of higher education, as such term is defined in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001)); or

(B) a labor organization or a joint labor management organization.

(3) GRANTEE.—The term ''grantee'' means an eligible entity that has received a grant under this section.

(4) LEAD APPLICANT.—The term ''lead applicant'' means the eligible entity that is primarily responsible for the preparation, conduct, and administration of the project for which the grant was awarded.

(5) SECRETARY.—The term ''Secretary'' means the Secretary of the Interior, in consultation with the Secretary of Energy, the Secretary of Education, and the Secretary of Labor.

(6) CARL D. PERKINS CAREER AND TECHNICAL EDUCATION ACT TERMS.—The terms ''area career and technical education school'', ''qualified intermediary'', ''Tribal educational agency'', and ''work-based learning'' have the meanings given the terms in section 3 of the Carl D. Perkins Career and Technical Education Act of 2006 (20 U.S.C. 2302).

(7) WORKFORCE INNOVATION AND OPPORTUNITY ACT TERMS.—The terms ''career pathway'', ''dislocated worker'', ''English language acquisition'', ''in-school youth'', ''individuals with barriers to employment'', ''industry or sector partnership'', ''on-the-job training'', ''out-of-school youth'', ''recognized postsecondary credential'', ''supportive services'', have the meanings given the terms in section 3 of the Workforce Innovation and Opportunity Act (29 U.S.C. 3102).

SEC. 12302. DATA PRESERVATION.

Subsection (k) of the National Geological and Geophysical Data Preservation Program Act of 2005 (42 U.S.C. 15908(k)) is amended by striking ''2006 through 2010'' and inserting ''2021 through 2025''.

SEC. 12303. EXTENSION OF AUTHORITY FOR NON-OIL AND GAS OPERATIONS ON THE OUTER CONTINENTAL SHELF.

Section 4(a)(1) of the Outer Continental Shelf Lands Act (43 U.S.C. 1333(a)(1)) is amended to read as follows:

''(1) JURISDICTION OF THE UNITED STATES ON THE OUTER CONTINENTAL SHELF.—

''(A) IN GENERAL.—The Constitution and laws and civil and political jurisdiction of the United States are extended, to the same extent

as if the outer Continental Shelf were an area of exclusive Federal jurisdiction located within a State, to—

''(i) the subsoil and seabed of the outer Continental Shelf;

''(ii) all artificial islands on the outer Continental Shelf;

''(iii) all installations and other devices permanently or temporarily attached to the seabed, which may be erected thereon for the purpose of exploring for, developing, or producing resources therefrom or producing or supporting the production of energy from sources other than oil and gas; and

''(iv) any such installation or other device (other than a ship or vessel) for the purpose of transporting such resources or transmitting energy.

''(B) LEASES ISSUED EXCLUSIVELY UNDER THIS ACT.—Mineral or energy leases on the outer Continental Shelf shall be maintained or issued only under the provisions of this Act.''.

Subtitle D—Clean Energy and Sustainability Accelerator

SEC. 12401. CLEAN ENERGY AND SUSTAINABILITY ACCELERATOR.

Title XVI of the Energy Policy Act of 2005 (Public Law 109–58, as amended) is amended by adding at the end the following new subtitle:

"Subtitle C—Clean Energy and Sustainability Accelerator

"SEC. 1621. DEFINITIONS.

''In this subtitle:

''(1) ACCELERATOR.—The term 'Accelerator' means the Clean Energy and Sustainability Accelerator established under section 1622.

''(2) BOARD.—The term 'Board' means the Board of Directors of the Accelerator.

''(3) CHIEF EXECUTIVE OFFICER.—The term 'chief executive officer' means the chief executive officer of the Accelerator.

''(4) CLIMATE-IMPACTED COMMUNITIES.—The term 'climate-impacted communities' includes—

''(A) communities of color, which include any geographically distinct area the population of color of which is higher than the average

population of color of the State in which the community is located;

"(B) communities that are already or are likely to be the first communities to feel the direct negative effects of climate change;

"(C) distressed neighborhoods, demonstrated by indicators of need, including poverty, childhood obesity rates, academic failure, and rates of juvenile delinquency, adjudication, or incarceration;

"(D) low-income communities, defined as any census block group in which 30 percent or more of the population are individuals with low income;

"(E) low-income households, defined as a household with annual income equal to, or less than, the greater of—

"(i) an amount equal to 80 percent of the median income of the area in which the household is located, as reported by the Department of Housing and Urban Development; and

"(ii) 200 percent of the Federal poverty line; and

''(F) rural areas, which include any area other than—

''(i) a city or town that has a population of greater than 50,000 inhabitants; and

''(ii) any urbanized area contiguous and adjacent to a city or town described in clause (i).

''(5) CLIMATE RESILIENT INFRASTRUCTURE.—The term 'climate resilient infrastructure' means any project that builds or enhances infrastructure so that such infrastructure—

''(A) is planned, designed, and operated in a way that anticipates, prepares for, and adapts to changing climate conditions; and

''(B) can withstand, respond to, and recover rapidly from disruptions caused by these climate conditions.

''(6) ELECTRIFICATION.—The term 'electrification' means the installation, construction, or use of end-use electric technology that replaces existing fossil-fuel-based technology.

''(7) ENERGY EFFICIENCY.—The term 'energy efficiency' means any project, technology, function, or measure that results in the reduction of energy

use required to achieve the same level of service or output prior to the application of such project, technology, function, or measure, or substantially reduces greenhouse gas emissions relative to emissions that would have occurred prior to the application of such project, technology, function, or measure.

''(8) FUEL SWITCHING.—The term 'fuel switching' means any project that replaces a fossil-fuel-based heating system with an electric-powered system or one powered by biomass-generated heat.

''(9) GREEN BANK.—The term 'green bank' means a dedicated public or nonprofit specialized finance entity that—

''(A) is designed to drive private capital into market gaps for low- and zero-emission goods and services;

''(B) uses finance tools to mitigate climate change;

''(C) does not take deposits;

''(D) is funded by government, public, private, or charitable contributions; and

''(E) invests or finances projects—

''(i) alone; or

''(ii) in conjunction with other investors.

''(10) QUALIFIED PROJECTS.—The term 'qualified projects' means the following kinds of technologies and activities that are eligible for financing and investment from the Clean Energy and Sustainability Accelerator, either directly or through State and local green banks funded by the Clean Energy and Sustainability Accelerator:

''(A) Renewable energy generation, including the following:

''(i) Solar.

''(ii) Wind.

''(iii) Geothermal.

''(iv) Hydropower.

''(v) Ocean and hydrokinetic.

''(vi) Fuel cell.

''(B) Building energy efficiency, fuel switching, and electrification.

''(C) Industrial decarbonization.

''(D) Grid technology such as transmission, distribution, and storage to support clean energy distribution, including smart-grid applications.

''(E) Agriculture and forestry projects that reduce net greenhouse gas emissions.

''(F) Clean transportation, including the following:

''(i) Battery electric vehicles.

''(ii) Plug-in hybrid electric vehicles.

''(iii) Hydrogen vehicles.

''(iv) Other zero-emissions fueled vehicles.

''(v) Related vehicle charging and fueling infrastructure.

''(G) Climate resilient infrastructure.

''(H) Any other key areas identified by the Board as consistent with the mandate of the Accelerator as described in section 1623.

''(11) RENEWABLE ENERGY GENERATION.—The term 'renewable energy generation' means electricity created by sources that are continually replenished by nature, such as the sun, wind, and water.

''SEC. 1622. ESTABLISHMENT.

''(a) IN GENERAL.—Not later than 1 year after the date of enactment of this subtitle, there shall be established a nonprofit corporation to be known as the 'Clean Energy and Sustainability Accelerator'.

''(b) LIMITATION.—The Accelerator shall not be an agency or instrumentality of the Federal Government.

''(c) FULL FAITH AND CREDIT.—The full faith and credit of the United States shall not extend to the Accelerator.

''(d) NONPROFIT STATUS.—The Accelerator shall maintain its status as an organization exempt from taxation under the Internal Revenue Code of 1986 (26 U.S.C. 1 et seq.).

''SEC. 1623. MANDATE.

''The Accelerator shall make the United States a world leader in combating the causes and effects of climate change through the rapid deployment of mature technologies and scaling of new technologies by maximizing the reduction of emissions in the United States for every dollar deployed by the Accelerator, including by—

''(1) providing financing support for investments in the United States in low- and zero-emissions technologies and processes in order to rapidly accelerate market penetration;

''(2) catalyzing and mobilizing private capital through Federal investment and supporting a more robust marketplace for clean technologies, while avoiding competition with private investment;

''(3) enabling climate-impacted communities to benefit from and afford projects and investments that reduce emissions;

''(4) providing support for workers and communities impacted by the transition to a low-carbon economy;

''(5) supporting the creation of green banks within the United States where green banks do not exist; and

''(6) causing the rapid transition to a clean energy economy without raising energy costs to end users and seeking to lower costs where possible.

''SEC. 1624. FINANCE AND INVESTMENT DIVISION.

''(a) IN GENERAL.—There shall be within the Accelerator a finance and investment division, which shall be responsible for—

''(1) the Accelerator's greenhouse gas emissions mitigation efforts by directly financing qualifying projects or doing so indirectly by providing capital to State and local green banks;

''(2) originating, evaluating, underwriting, and closing the Accelerator's financing and investment transactions in qualified projects;

''(3) partnering with private capital providers and capital markets to attract coinvestment from private banks, investors, and others in order to drive new investment into underpenetrated markets, to increase the efficiency of private capital markets with

respect to investing in greenhouse gas reduction projects, and to increase total investment caused by the Accelerator;

''(4) managing the Accelerator's portfolio of assets to ensure performance and monitor risk;

''(5) ensuring appropriate debt and risk mitigation products are offered; and

''(6) overseeing prudent, noncontrolling equity investments.

''(b) PRODUCTS AND INVESTMENT TYPES.—The finance and investment division of the Accelerator may provide capital to qualified projects in the form of—

''(1) senior, mezzanine, and subordinated debt;

''(2) credit enhancements including loan loss reserves and loan guarantees;

''(3) aggregation and warehousing;

''(4) equity capital; and

''(5) any other financial product approved by the Board.

''(c) STATE AND LOCAL GREEN BANK CAPITALIZATION.—The finance and investment division of the Accelerator shall make capital available to State and local green banks to enable such banks to finance qualifying projects in their markets that are better served by a locally based

entity, rather than through direct investment by the Accelerator.

''(d) INVESTMENT COMMITTEE.—The debt, risk mitigation, and equity investments made by the Accelerator shall be—

''(1) approved by the investment committee of the Board; and

''(2) consistent with an investment policy that has been established by the investment committee of the Board in consultation with the risk management committee of the Board.

''SEC. 1625. START-UP DIVISION.

''There shall be within the Accelerator a Start-up Division, which shall be responsible for providing technical assistance and start-up funding to States and other political subdivisions that do not have green banks to establish green banks in those States and political subdivisions, including by working with relevant stakeholders in those States and political subdivisions.

''SEC. 1626. ZERO-EMISSIONS FLEET AND RELATED INFRASTRUCTURE FINANCING PROGRAM.

''Not later than 1 year after the date of establishment of the Accelerator, the Accelerator shall explore the establishment of a program to provide low- and zero-interest loans, up to 30 years in length, to any school, metropolitan

planning organization, or nonprofit organization seeking financing for the acquisition of zero-emissions vehicle fleets or associated infrastructure to support zero-emissions vehicle fleets.

"SEC. 1627. PROJECT PRIORITIZATION AND REQUIREMENTS.

"(a) EMISSIONS REDUCTION MANDATE.—In investing in projects that mitigate greenhouse gas emissions, the Accelerator shall maximize the reduction of emissions in the United States for every dollar deployed by the Accelerator.

"(b) ENVIRONMENTAL JUSTICE PRIORITIZATION.—

"(1) IN GENERAL.—In order to address environmental justice needs, the Accelerator shall, as applicable, prioritize the provision of program benefits and investment activity that are expected to directly or indirectly result in the deployment of projects to serve, as a matter of official policy, climate-impacted communities.

"(2) MINIMUM PERCENTAGE.—The Accelerator shall ensure that over the 30-year period of its charter 20 percent of its investment activity is directed to serve climate-impacted communities.

"(c) CONSUMER PROTECTION.—

''(1) PRIORITIZATION.—Consistent with mandate under section 1623 to maximize the reduction of emissions in the United States for every dollar deployed by the Accelerator, the Accelerator shall prioritize qualified projects according to benefits conferred on consumers and affected communities.

''(2) CONSUMER CREDIT PROTECTION.—The Accelerator shall ensure that any residential energy efficiency or distributed clean energy project in which the Accelerator invests directly or indirectly complies with the requirements of the Consumer Credit Protection Act (15 U.S.C. 1601 et seq.), including, in the case of a financial product that is a residential mortgage loan, any requirements of title I of that Act relating to residential mortgage loans (including any regulations promulgated by the Bureau of Consumer Financial Protection under section 129C(b)(3)(C) of that Act (15 U.S.C. 1639c(b)(3)(C))).

''(d) LABOR.—

''(1) IN GENERAL.—The Accelerator shall ensure that laborers and mechanics employed by contractors and subcontractors in construction work financed directly by the Accelerator will be paid wages not less than those prevailing on similar construction

in the locality, as determined by the Secretary of Labor under sections 3141 through 3144, 3146, and 3147 of title 40, United States Code.

''(2) PROJECT LABOR AGREEMENT.—The Accelerator shall ensure that projects financed directly by the Accelerator with total capital costs of $100,000,000 or greater utilize a project labor agreement.

''SEC. 1628. BOARD OF DIRECTORS.

''(a) IN GENERAL.—The Accelerator shall operate under the direction of a Board of Directors, which shall be composed of seven members.

''(b) INITIAL COMPOSITION AND TERMS.—

''(1) SELECTION.—The initial members of the Board shall be selected as follows:

''(A) APPOINTED MEMBERS.—Three members shall be appointed by the President, with the advice and consent of the Senate, of whom no more than two shall belong to the same political party.

''(B) ELECTED MEMBERS.—Four members shall be elected unanimously by the three members appointed and confirmed pursuant to subparagraph (A).

''(2) TERMS.—The terms of the initial members of the Board shall be as follows:

''(A) The three members appointed and confirmed under paragraph (1)(A) shall have initial 5-year terms.

''(B) Of the four members elected under paragraph (1)(B), two shall have initial 3-year terms, and two shall have initial 4-year terms.

''(c) SUBSEQUENT COMPOSITION AND TERMS.—

''(1) SELECTION.—Except for the selection of the initial members of the Board for their initial terms under subsection (b), the members of the Board shall be elected by the members of the Board.

''(2) DISQUALIFICATION.—A member of the Board shall be disqualified from voting for any position on the Board for which such member is a candidate.

''(3) TERMS.—All members elected pursuant to paragraph (1) shall have a term of 5 years.

''(d) QUALIFICATIONS.—The members of the Board shall collectively have expertise in—

''(1) the fields of clean energy, electric utilities, industrial decarbonization, clean transportation, resiliency, and agriculture and forestry practices;

''(2) climate change science;

''(3) finance and investments; and

''(4) environmental justice and matters related to the energy and environmental needs of climate-impacted communities.

''(e) RESTRICTION ON MEMBERSHIP.—No officer or employee of the Federal or any other level of government may be appointed or elected as a member of the Board.

''(f) QUORUM.—Five members of the Board shall constitute a quorum.

''(g) BYLAWS.—

''(1) IN GENERAL.—The Board shall adopt, and may amend, such bylaws as are necessary for the proper management and functioning of the Accelerator.

''(2) OFFICERS.—In the bylaws described in paragraph (1), the Board shall—

''(A) designate the officers of the Accelerator; and

''(B) prescribe the duties of those officers.

''(h) VACANCIES.—Any vacancy on the Board shall be filled through election by the Board.

''(i) INTERIM APPOINTMENTS.—A member elected to fill a vacancy occurring before the expiration of the term for which the predecessor of that member was appointed or elected shall serve for the remainder of the term for

which the predecessor of that member was appointed or elected.

''(j) REAPPOINTMENT.—A member of the Board may be elected for not more than one additional term of service as a member of the Board.

''(k) CONTINUATION OF SERVICE.—A member of the Board whose term has expired may continue to serve on the Board until the date on which a successor member is elected.

''(l) CHIEF EXECUTIVE OFFICER.—The Board shall appoint a chief executive officer who shall be responsible for—

''(1) hiring employees of the Accelerator;

''(2) establishing the two divisions of the Accelerator described in sections 1624 and 1625; and

''(3) performing any other tasks necessary for the day-to-day operations of the Accelerator.

''(m) ADVISORY COMMITTEE.—

''(1) ESTABLISHMENT.—The Accelerator shall establish an advisory committee (in this subsection referred to as the 'advisory committee'), which shall be composed of not more than 13 members appointed by the Board on the recommendation of the president of the Accelerator.

''(2) MEMBERS.—Members of the advisory committee shall be broadly representative of interests concerned with the environment, production, commerce, finance, agriculture, forestry, labor, services, and State Government. Of such members—

''(A) not fewer than three shall be representatives of the small business community;

''(B) not fewer than two shall be representatives of the labor community, except that no two members may be from the same labor union;

''(C) not fewer than two shall be representatives of the environmental nongovernmental organization community, except that no two members may be from the same environmental organization;

''(D) not fewer than two shall be representatives of the environmental justice nongovernmental organization community, except that no two members may be from the same environmental organization;

''(E) not fewer than two shall be representatives of the consumer protection and fair lending community, except that no two mem-

bers may be from the same consumer protection or fair lending organization; and

''(F) not fewer than two shall be representatives of the financial services industry with knowledge of and experience in financing transactions for clean energy and other sustainable infrastructure assets.

''(3) MEETINGS.—The advisory committee shall meet not less frequently than once each quarter.

''(4) DUTIES.—The advisory committee shall—

''(A) advise the Accelerator on the programs undertaken by the Accelerator; and

''(B) submit to the Congress an annual report with comments from the advisory committee on the extent to which the Accelerator is meeting the mandate described in section 1623, including any suggestions for improvement.

''(n) CHIEF RISK OFFICER.—

''(1) APPOINTMENT.—Subject to the approval of the Board, the chief executive officer shall appoint a chief risk officer from among individuals with experience at a senior level in financial risk management, who—

''(A) shall report directly to the Board; and

''(B) shall be removable only by a majority vote of the Board.

''(2) DUTIES.—The chief risk officer, in coordination with the risk management and audit committees established under section 1631, shall develop, implement, and manage a comprehensive process for identifying, assessing, monitoring, and limiting risks to the Accelerator, including the overall portfolio diversification of the Accelerator.

''SEC. 1629. ADMINISTRATION.

''(a) CAPITALIZATION.—

''(1) IN GENERAL.—To the extent and in the amounts provided in advance in appropriations Acts, the Secretary of Energy shall transfer to the Accelerator—

''(A) $10,000,000,000 on the date on which the Accelerator is established under section 1622; and

''(B) $2,000,000,000 on October 1 of each of the 5 fiscal years following that date.

''(2) AUTHORIZATION OF APPROPRIATIONS.—For purposes of the transfers under paragraph (1), there are authorized to be appropriated—

"(A) $10,000,000,000 for the fiscal year in which the Accelerator is established under section 1622; and

"(B) $2,000,000,000 for each of the 5 succeeding fiscal years.

"(b) CHARTER.—The Accelerator shall establish a charter, the term of which shall be 30 years.

"(c) OPERATIONAL FUNDS.—To sustain operations, the Accelerator shall manage revenue from financing fees, interest, repaid loans, and other types of funding.

"(d) REPORT.—The Accelerator shall submit on a quarterly basis to the relevant committees of Congress a report that describes the financial activities, emissions reductions, and private capital mobilization metrics of the Accelerator for the previous quarter.

"(e) RESTRICTION.—The Accelerator shall not accept deposits.

"(f) COMMITTEES.—The Board shall establish committees and subcommittees, including—

"(1) an investment committee; and

"(2) in accordance with section 1630—

"(A) a risk management committee; and

"(B) an audit committee.

"SEC. 1630. ESTABLISHMENT OF RISK MANAGEMENT COMMITTEE AND AUDIT COMMITTEE.

''(a) IN GENERAL.—To assist the Board in fulfilling the duties and responsibilities of the Board under this subtitle, the Board shall establish a risk management committee and an audit committee.

''(b) DUTIES AND RESPONSIBILITIES OF RISK MANAGEMENT COMMITTEE.—Subject to the direction of the Board, the risk management committee established under subsection (a) shall establish policies for and have oversight responsibility for—

''(1) formulating the risk management policies of the operations of the Accelerator;

''(2) reviewing and providing guidance on operation of the global risk management framework of the Accelerator;

''(3) developing policies for—

''(A) investment;

''(B) enterprise risk management;

''(C) monitoring; and

''(D) management of strategic, reputational, regulatory, operational, developmental, environmental, social, and financial risks; and

''(4) developing the risk profile of the Accelerator, including—

''(A) a risk management and compliance framework; and

''(B) a governance structure to support that framework.

''(c) DUTIES AND RESPONSIBILITIES OF AUDIT COMMITTEE.—Subject to the direction of the Board, the audit committee established under subsection (a) shall have oversight responsibility for—

''(1) the integrity of—

''(A) the financial reporting of the Accelerator; and

''(B) the systems of internal controls regarding finance and accounting;

''(2) the integrity of the financial statements of the Accelerator;

''(3) the performance of the internal audit function of the Accelerator; and

''(4) compliance with the legal and regulatory requirements related to the finances of the Accelerator.

''SEC. 1631. OVERSIGHT.

''(a) EXTERNAL OVERSIGHT.—The inspector general of the Department of Energy shall have oversight responsibilities over the Accelerator.

''(b) REPORTS AND AUDIT.—

''(1) ANNUAL REPORT.—The Accelerator shall publish an annual report which shall be transmitted by the Accelerator to the President and the Congress.

''(2) ANNUAL AUDIT OF ACCOUNTS.—The accounts of the Accelerator shall be audited annually. Such audits shall be conducted in accordance with generally accepted auditing standards by independent certified public accountants who are certified by a regulatory authority of the jurisdiction in which the audit is undertaken.

''(3) ADDITIONAL AUDITS.—In addition to the annual audits under paragraph (2), the financial transactions of the Accelerator for any fiscal year during which Federal funds are available to finance any portion of its operations may be audited by the Government Accountability Office in accordance with such rules and regulations as may be prescribed by the Comptroller General of the United States.

''SEC. 1632. MAXIMUM CONTINGENT LIABILITY.

''The maximum contingent liability of the Accelerator that may be outstanding at any time shall be not more than $70,000,000,000 in the aggregate.''.

Subtitle E—Scientific Integrity

SEC. 12501. SENSE OF CONGRESS.

It is the sense of Congress that—

(1) science and the scientific process should help inform and guide public policy decisions on a wide range of issues, including improvement of public health, protection of the environment, and protection of national security;

(2) the public must be able to trust the science and scientific process informing public policy decisions;

(3) science, the scientific process, and the communication of science should be free from politics, ideology, and financial conflicts of interest;

(4) policies and procedures that ensure the integrity of the conduct and communication of publicly funded science are critical to ensuring public trust;

(5) a Federal agency that funds, conducts, or oversees research should not suppress, alter, interfere with, or otherwise impede the timely communication and open exchange of data and findings to other agencies, policymakers, and the public of research conducted by a scientist or engineer employed or contracted by a Federal agency that funds, conducts, or oversees scientific research;

(6) Federal agencies that fund, conduct, or oversee research should work to prevent the suppression or distortion of the data and findings;

(7) under the First Amendment to the Constitution, citizens of the United States have the right to ''petition the government for a redress of grievances''; and

(8) Congress has further protected those rights under section 7211 of title 5, United States Code, which states, ''the right of employees, individually or collectively, to petition Congress or a member of Congress . . . may not be interfered with or denied''.

SEC. 12502. AMENDMENT TO AMERICA COMPETES ACT.

Section 1009 of the America COMPETES Act (42 U.S.C. 6620) is amended by striking subsections (a) and (b) and inserting the following:

''(a) SCIENTIFIC INTEGRITY POLICIES.—

''(1) IN GENERAL.—Not later than 90 days after the date of enactment of the Scientific Integrity Act, the head of each covered agency shall—

''(A) adopt and enforce a scientific integrity policy in accordance with subsections (b) and (c); and

''(B) submit such policy to the Director of the Office of Science and Technology Policy for approval.

''(2) PUBLICATION.—Not later than 30 days after the Director of the Office of Science and Technology Policy approves the scientific integrity policy under paragraph (1), the head of each covered agency shall—

''(A) make such policy available to the public on the website of the agency; and

''(B) submit such policy to the relevant Committees of Congress.

''(b) REQUIREMENTS.—A scientific integrity policy under subsection (a)—

''(1) shall prohibit any covered individual from—

''(A) engaging in dishonesty, fraud, deceit, misrepresentation, coercive manipulation, or other scientific or research misconduct;

''(B) suppressing, altering, interfering with, delaying without scientific merit, or otherwise impeding the release and communication of, scientific or technical findings;

''(C) intimidating or coercing an individual to alter or censor, attempting to intimidate or

coerce an individual to alter or censor, or retaliating against an individual for failure to alter or censor, scientific or technical findings; or

''(D) implementing an institutional barrier to cooperation with scientists outside the covered agency and the timely communication of scientific or technical findings;

''(2) shall allow a covered individual to—

''(A) disseminate scientific or technical findings, subject to existing law, by—

''(i) participating in scientific conferences; and

''(ii) seeking publication in online and print publications through peer-reviewed, professional, or scholarly journals;

''(B) sit on scientific advisory or governing boards;

''(C) join or hold leadership positions on scientific councils, societies, unions, and other professional organizations;

''(D) contribute to the academic peer-review process as reviewers or editors; and

''(E) participate and engage with the scientific community;

"(3) may require a covered individual to, before disseminating scientific or technical findings as described in paragraph (2)(A), submit such findings to the agency for the purpose of review by the agency of the data and findings for technical accuracy if the scientific integrity policy outlines a clear and consistent process for such review; and

"(4) shall require that—

"(A) scientific conclusions are not made based on political considerations;

"(B) the selection and retention of candidates for science and technology positions in the covered agency are based primarily on the candidate's expertise, scientific credentials, experience, and integrity;

"(C) personnel actions regarding covered individuals, except for political appointees, are not taken on the basis of political consideration or ideology;

"(D) covered individuals adhere to the highest ethical and professional standards in conducting their research and disseminating their findings;

"(E) the appropriate rules, procedures, and safeguards are in place to ensure the integ-

rity of the scientific process within the covered agency;

''(F) scientific or technological information considered in policy decisions is subject to well-established scientific processes, including peer review where appropriate;

''(G) procedures, including procedures with respect to applicable whistleblower protections, are in place as are necessary to ensure the integrity of scientific and technological information and processes on which the covered agency relies in its decision making or otherwise uses; and

''(H) enforcement of such policy is consistent with the processes for an administrative hearing and an administrative appeal.

''(c) IMPLEMENTATION.—In carrying out subsection (a), the head of each covered agency shall—

''(1) design the scientific integrity policy to apply with respect to the covered agency;

''(2) ensure that such policy is clear with respect to what activities are permitted and what activities are not permitted;

''(3) ensure that there is a process for individuals not employed or contracted by the agency, in-

cluding grantees, collaborators, partners, and volunteers, to report violations of the scientific integrity policy;

''(4) enforce such policy uniformly throughout the covered agency; and

''(5) make such policy available to the public, employees, private contractors, and grantees of the covered agency.

''(d) SCIENTIFIC INTEGRITY OFFICER.—Not later than 90 days after the date of enactment of this Act, each covered agency shall appoint a Scientific Integrity Officer, who shall—

''(1) be a career employee at the covered agency in a professional position;

''(2) have technical knowledge and expertise in conducting and overseeing scientific research;

''(3) direct the activities and duties described in subsections (e), (f), and (g); and

''(4) work closely with the inspector general of the covered agency, as appropriate.

''(e) ADMINISTRATIVE PROCESS AND TRAINING.—Not later than 180 days after the date of enactment of this Act, the head of each covered agency shall establish—

''(1) an administrative process and administrative appeal process for dispute resolution consistent

with the scientific integrity policy of the covered agency adopted under subsection (a); and

''(2) a training program to provide—

''(A) regular scientific integrity and ethics training to employees and contractors of the covered agency;

''(B) new covered employees with training within one month of commencing employment;

''(C) information to ensure that covered individuals are fully aware of their rights and responsibilities regarding the conduct of scientific research, publication of scientific research, and communication with the media and the public regarding scientific research; and

''(D) information to ensure that covered individuals are fully aware of their rights and responsibilities for administrative hearings and appeals established in the covered agency's scientific integrity policy.

''(f) REPORTING.—

''(1) ANNUAL REPORT.—Each year, each Scientific Integrity Officer appointed by a covered agency under subsection (d) shall post an annual report on the public website of the covered agency that includes, for the year covered by the report—

"(A) the number of complaints of misconduct with respect to the scientific integrity policy adopted under subsection (a)—

"(i) filed for administrative redress;

"(ii) petitioned for administrative appeal; and

"(iii) still pending from years prior to the year covered by the report, if any;

"(B) an anonymized summary of each such complaint and the results of each such complaint; and

"(C) any changes made to the scientific integrity policy.

"(2) INCIDENT REPORT.—

"(A) IN GENERAL.—Not later than 30 days after the date on which an incident described in subparagraph (B) occurs, the head of a covered agency shall submit a report describing the incident to the Office of Science and Technology Policy and the relevant Committees of Congress.

"(B) INCIDENT.—An incident described under this paragraph is an incident in which an individual, acting outside the channels established under subsection (e), overrules the deci-

sion of the Scientific Integrity Officer with respect to a dispute regarding a violation of the scientific integrity policy.

''(g) OFFICE OF SCIENCE AND TECHNOLOGY POLICY.—The Director of the Office of Science and Technology Policy shall—

''(1) collate, organize, and publicly share all information it receives under subsection (f) in one place on its own website; and

''(2) on an annual basis, convene the Scientific Integrity Officer of each covered agency appointed under subsection (d) to discuss best practices for implementing the requirements of this section.

''(h) PERIODIC REVIEW AND APPROVAL.—

''(1) INTERNAL REVIEW.—The head of each covered agency shall periodically conduct a review of the scientific integrity policy and change such policy as appropriate.

''(2) REVIEW BY THE OFFICE OF SCIENCE AND TECHNOLOGY POLICY.—

''(A) REVIEW OF SUBSTANTIAL UPDATES.—The head of each covered agency shall submit to the Office of Science and Technology Policy for approval any substantial changes to the scientific integrity policy.

''(B) QUINQUENNIAL REVIEW.—Not later than 5 years after the date of the enactment of the Clean Economy Jobs and Innovation Act, and quinquennially thereafter, the head of each covered agency shall submit the scientific integrity policy to the Office of Science and Technology Policy for review and approval.

''(i) COMPTROLLER GENERAL REVIEW.—Not later than 2 years after the date of the enactment of the Clean Economy Jobs and Innovation Act, the Comptroller General shall conduct a review of the implementation of the scientific integrity policy by each covered agency.

''(j) DEFINITIONS.—In this section:

''(1) AGENCY.—The term 'agency' has the meaning given the term in section 551 of title 5, United States Code.

''(2) COVERED AGENCY.—The term 'covered agency' means an agency that funds, conducts, or oversees scientific research.

''(3) COVERED INDIVIDUAL.—The term 'covered individual' means a Federal employee or contractor who—

''(A) is engaged in, supervises, or manages scientific activities;

''(B) analyzes or publicly communicates information resulting from scientific activities; or

''(C) uses scientific information or analyses in making bureau, office, or agency policy, management, or regulatory decisions.

''(4) RELEVANT COMMITTEES OF CONGRESS.—The term 'relevant Committees of Congress' means—

''(A) the Committee on Commerce, Science, and Transportation of the Senate; and

''(B) the Committee on Science, Space, and Technology of the House of Representatives.''.

SEC. 12503. EXISTING POLICIES; CLARIFICATION.

(a) EXISTING SCIENTIFIC INTEGRITY POLICIES.—Notwithstanding the amendments made by this subtitle, a covered agency's scientific integrity policy that was in effect on the day before the date of enactment of this Act may satisfy the requirements under the amendments made by this subtitle if the head of the covered agency—

(1) makes a written determination that the policy satisfies such requirements; and

(2) submits the written determination and the policy to the Director of the Office of Science and Technology Policy for review and approval.

(b) CLARIFICATION.—Nothing in this subtitle shall affect the application of United States copyright law.

(c) COVERED AGENCY DEFINED.—The term ''covered agency'' has the meaning given the term in section 1009 of the America COMPETES Act (42 U.S.C. 6620).

Subtitle F—Other Matters

SEC. 12601. AUTHORIZATION.

Section 112(a)(1)(B) of the Uranium Mill Tailings Radiation Control Act of 1978 (42 U.S.C. 7922(a)(1)(B)) is amended by striking ''September 30, 2023'' and inserting ''September 30, 2031''.

SEC. 12602. ADDRESSING INSUFFICIENT COMPENSATION OF EMPLOYEES AND OTHER PERSONNEL OF THE FEDERAL ENERGY REGULATORY COMMISSION.

(a) IN GENERAL.—Section 401 of the Department of Energy Organization Act (42 U.S.C. 7171) is amended by adding at the end the following:

''(k) ADDRESSING INSUFFICIENT COMPENSATION OF EMPLOYEES AND OTHER PERSONNEL OF THE COMMISSION.—

''(1) IN GENERAL.—Notwithstanding any other provision of law, if the Chairman publicly certifies that compensation for a category of employees or other personnel of the Commission is insufficient to

retain or attract employees and other personnel to allow the Commission to carry out the functions of the Commission in a timely, efficient, and effective manner, the Chairman may fix the compensation for the category of employees or other personnel without regard to chapter 51 and subchapter III of chapter 53 of title 5, United States Code, or any other civil service law.

''(2) CERTIFICATION REQUIREMENTS.—A certification issued under paragraph (1) shall—

''(A) apply with respect to a category of employees or other personnel responsible for conducting work of a scientific, technological, engineering, or mathematical nature;

''(B) specify a maximum amount of reasonable compensation for the category of employees or other personnel;

''(C) be valid for a 5-year period beginning on the date on which the certification is issued;

''(D) be no broader than necessary to achieve the objective of retaining or attracting employees and other personnel to allow the Commission to carry out the functions of the Commission in a timely, efficient, and effective manner; and

''(E) include an explanation for why the other approaches available to the Chairman for retaining and attracting employees and other personnel are inadequate.

''(3) RENEWAL.—

''(A) IN GENERAL.—Not later than 90 days before the date of expiration of a certification issued under paragraph (1), the Chairman shall determine whether the certification should be renewed for a subsequent 5-year period.

''(B) REQUIREMENT.—If the Chairman determines that a certification should be renewed under subparagraph (A), the Chairman may renew the certification, subject to the certification requirements under paragraph (2) that were applicable to the initial certification.

''(4) NEW HIRES.—

''(A) IN GENERAL.—An employee or other personnel that is a member of a category of employees or other personnel that would have been covered by a certification issued under paragraph (1), but was hired during a period in which the certification has expired and has not been renewed under paragraph (3) shall not be

eligible for compensation at the level that would have applied to the employee or other personnel if the certification had been in effect on the date on which the employee or other personnel was hired.

''(B) COMPENSATION OF NEW HIRES ON RENEWAL.—On renewal of a certification under paragraph (3), the Chairman may fix the compensation of the employees or other personnel described in subparagraph (A) at the level established for the category of employees or other personnel in the certification.

''(5) RETENTION OF LEVEL OF FIXED COMPENSATION.—A category of employees or other personnel, the compensation of which was fixed by the Chairman in accordance with paragraph (1), may, at the discretion of the Chairman, have the level of fixed compensation for the category of employees or other personnel retained, regardless of whether a certification described under that paragraph is in effect with respect to the compensation of the category of employees or other personnel.

''(6) CONSULTATION REQUIRED.—The Chairman shall consult with the Director of the Office of Personnel Management in implementing this sub-

section, including in the determination of the amount of compensation with respect to each category of employees or other personnel.

''(7) EXPERTS AND CONSULTANTS.—

''(A) IN GENERAL.—Subject to subparagraph (B), the Chairman may—

''(i) obtain the services of experts and consultants in accordance with section 3109 of title 5, United States Code;

''(ii) compensate those experts and consultants for each day (including travel time) at rates not in excess of the rate of pay for level IV of the Executive Schedule under section 5315 of that title; and

''(iii) pay to the experts and consultants serving away from the homes or regular places of business of the experts and consultants travel expenses and per diem in lieu of subsistence at rates authorized by sections 5702 and 5703 of that title for persons in Government service employed intermittently.

''(B) LIMITATIONS.—The Chairman shall—

"(i) to the maximum extent practicable, limit the use of experts and consultants pursuant to subparagraph (A); and

"(ii) ensure that the employment contract of each expert and consultant employed pursuant to subparagraph (A) is subject to renewal not less frequently than annually.".

(b) REPORTS.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, and every 2 years thereafter for 10 years, the Chairman of the Federal Energy Regulatory Commission shall submit to the Committee on Energy and Commerce of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report on information relating to hiring, vacancies, and compensation at the Federal Energy Regulatory Commission.

(2) INCLUSIONS.—Each report under paragraph (1) shall include—

(A) an analysis of any trends with respect to hiring, vacancies, and compensation at the Federal Energy Regulatory Commission; and

(B) a description of the efforts to retain and attract employees or other personnel responsible for conducting work of a scientific, technological, engineering, or mathematical nature at the Federal Energy Regulatory Commission.

(c) APPLICABILITY.—The amendment made by subsection (a) shall apply beginning on the date that is 30 days after the date of enactment of this Act.

SEC. 12603. OFFICE OF PUBLIC PARTICIPATION.

Section 319 of the Federal Power Act (16 U.S.C. 825q–1) is amended—

(1) in subsection (a)(1), by inserting ", to facilitate communication with the public relating to, and participation by the public in, matters under the jurisdiction of the Commission, including under this Act and the Natural Gas Act" before the period at the end;

(2) in subsection (b), by striking paragraph (4) and inserting the following:

"(4) The Office shall promote, through outreach, publications, and, as appropriate, direct communication with entities regulated by the Commission—

"(A) improved compliance with rules and orders of the Commission; and

''(B) public participation in matters before the Commission.

''(5) The Director may assign staff to intervene, appear, and participate in administrative, regulatory, or judicial proceedings on behalf of individuals or entities intervening or participating, or proposing to intervene or participate, in proceedings before the Commission by representing the interests of such individuals or entities on any matter before the Commission.

''(6) The Office shall advocate for, and act as a liaison with, environmental justice communities on matters under the jurisdiction of the Commission.''; and

(3) by adding at the end the following:

''(c) FUNDING.—Funding for the Office shall be derived from fees and charges collected under section 3401 of the Omnibus Budget Reconciliation Act of 1986.

''(d) DEFINITIONS.—In this section:

''(1) COMMUNITY OF COLOR.—The term 'community of color' means any geographically distinct area the population of color of which is higher than the average population of color of the State in which the community is located.

''(2) ENVIRONMENTAL JUSTICE COMMUNITY.—The term 'environmental justice community' means a community with significant representation of com-

munities of color, low-income communities, or indigenous communities, that experiences, or is at risk of experiencing, higher or more adverse human health or environmental effects.

''(3) INDIGENOUS COMMUNITY.—The term 'indigenous community' means—

''(A) a federally recognized Indian Tribe;

''(B) a State-recognized Indian Tribe;

''(C) an Alaska Native or Native Hawaiian community or organization; and

''(D) any other community of indigenous people.

''(4) LOW-INCOME COMMUNITY.—The term 'low-income community' means any census block group in which 30 percent or more of the population are individuals with low income.

''(5) POPULATION OF COLOR.—The term 'population of color' means a population of individuals who identify as—

''(A) Black;

''(B) African American;

''(C) Asian;

''(D) Pacific Islander;

''(E) another non-White race;

''(F) Hispanic;

''(G) Latino; or

''(H) linguistically isolated.''.

SEC. 12604. BACKGROUND OZONE RESEARCH.

(a) STUDY ON BACKGROUND OZONE RESEARCH NEEDS.—

(1) IN GENERAL.—Not later than 60 days after the date of enactment of this Act, the Administrator of the Environmental Protection Agency shall seek to enter an agreement with the National Academies of Sciences, Engineering, and Medicine (referred to in this section as the ''National Academies'') under which the National Academies shall conduct a study on the current and future research needs regarding background ozone. The study shall—

(A) propose a framework of standard terms and definitions for types of non-local ground level ozone, including types of background ozone, to standardize research on ground-level ozone;

(B) examine the current understanding of background sources of ozone and the contribution of such sources to ground-level ozone in the United States to identify gaps in knowledge that need to be addressed with additional research;

(C) examine challenges in quantifying the sources of background ozone and the contributions of each such source to ground-level ozone on a regional scale in the United States and identifies specific research needs to address these challenges;

(D) include an outline of a plan for a research and development program, including specifications for costs, timeframes, and responsible agencies, to support analysis and demonstration of background ozone trends, including by—

(i) improving collection and observational infrastructure;

(ii) improving confidence in model outputs;

(iii) reducing uncertainties in estimates of background ozone; and

(iv) making background ozone research outputs more useful and accessible to decision-makers; and

(E) identify opportunities for international engagement that may facilitate increased research collaborations that improve understanding of ozone trends.

(2) REPORT.—As a condition of any agreement under subsection (a), the Administrator shall require that the National Academies transmit to Congress a report on the results of the study under subsection (a) not later than 24 months after the date on which such agreement is finalized.

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section $1,200,000.

SEC. 12605. SMOKE PLANNING AND RESEARCH.

(a) RESEARCH ON WILDFIRE SMOKE.—

(1) CENTERS OF EXCELLENCE.—

(A) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Administrator of the Environmental Protection Agency (referred to in this subsection as the ''Administrator'') shall establish at institutions of higher education (as defined in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a))) 4 centers, each of which shall be known as a ''Center of Excellence for Wildfire Smoke'', to carry out research, outreach, and community engagement, relating to—

(i) the effects on public health, including the health of outdoor workers, of smoke emissions from wildland fires; and

(ii) means by which communities can better respond to the impacts of emissions from wildland fires.

(B) PRIORITY.—In selecting institutions of higher education at which to establish a center under subparagraph (A), the Administrator shall give priority to institutions that—

(i) have established expertise or dedicated centers for air quality research;

(ii) have experience with relevant outreach and extension work;

(iii) have established relationships with relevant Federal, State, and local agencies, community organizations, and Indian Tribes; and

(iv) are located in an area that is economically or environmentally impacted by wildfire smoke.

(C) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Administrator to carry out this para-

graph $10,000,000 for each of fiscal years 2021 through 2025.

(2) RESEARCH.—

(A) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Administrator shall carry out research—

(i) to study the health effects of smoke emissions from wildland fires;

(ii) to develop and disseminate personal and community-based interventions to reduce exposure to and adverse health effects of smoke emissions from wildland fires;

(iii) to increase the quality of smoke monitoring and prediction tools and techniques; and

(iv) to develop implementation and communication strategies.

(B) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Administrator to carry out this paragraph $20,000,000 for each of fiscal years 2021 through 2025.

(b) COMMUNITY SMOKE PLANNING.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Administrator shall establish a competitive grant program to assist eligible entities described in paragraph (2) in developing and implementing collaborative community plans for mitigating the impacts of smoke emissions from wildland fires.

(2) ELIGIBLE ENTITIES.—An entity that is eligible to submit an application for a grant under paragraph (1) is—

(A) a State;

(B) a unit of local government (including any special district, such as an air quality management district or a school district); or

(C) an Indian Tribe.

(3) APPLICATIONS.—To be eligible to receive a grant under paragraph (1), an eligible entity described in paragraph (2) shall submit to the Administrator an application at such time, in such manner, and containing such information as the Administrator may require, which shall include plans to collaborate with a public institution of higher education or other research institution that—

(A) has established expertise or dedicated centers for air quality research;

(B) has experience with relevant outreach and extension work;

(C) has established relationships with relevant Federal, State, and local agencies, community organizations, and Indian Tribes; and

(D) is located in an area that is economically or environmentally impacted by wildfire smoke.

(4) TECHNICAL ASSISTANCE.—The Administrator may use amounts made available to carry out this subsection to provide to eligible entities described in paragraph (2) technical assistance in—

(A) submitting grant applications under paragraph (3); or

(B) carrying out projects using a grant under this subsection.

(5) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Administrator to carry out this subsection $50,000,000 for each of fiscal years 2021 through 2025.

SEC. 12606. REPORT ON EFFECTS OF EMISSIONS FROM FOSSIL FUEL FACILITIES.

(a) STUDY.—

(1) IN GENERAL.—The Administrator shall conduct a study to evaluate the effect of emissions from

fossil fuel facilities on the health of environmental justice communities, including such effects on the environment or that result in adverse human health for such communities.

(2) INCLUSION.—In evaluating effects under paragraph (1), the Administrator of the Environmental Protection Agency shall consider the distance between fossil fuel facilities and environmental justice communities.

(b) REPORT.—Not later than 180 days after the date of enactment of this Act, the Administrator shall submit to Congress a report that summarizes the study conducted under subsection (a).

(c) DEFINITIONS.—In this section:

(1) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of the Environmental Protection Agency.

(2) ENVIRONMENTAL JUSTICE COMMUNITY.—The term ''environmental justice community'' has the meaning given such term in section 11001.

(3) FOSSIL FUEL FACILITY.—The term ''fossil fuel facility'' has the meaning given such term by the Administrator for purposes of the National Emissions Inventory.

SEC. 12607. WILDFIRE HAZARD SEVERITY MAPPING FOR ELECTRIC TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE.

(a) MAP REQUIRED.—Not later than 2 years after the date of the enactment of this section, the Secretary of Energy shall—

(1) use the most recent LANDFIRE data to generate a geospatial map for the conterminous United States that depicts wildfire risk to electric utilities that—

(A) manage electric transmission infrastructure or rights-of-ways on public lands; and

(B) maintain equipment that is at risk of igniting or being impacted by wildland fire; and

(2) disseminate the information generated under paragraph (1) in an appropriate format for use by electric utilities in order to—

(A) improve understanding of wildfire risk;

(B) identify areas and assets at the highest risk;

(C) prioritize infrastructure maintenance and vegetation management;

(D) identify opportunities for energy storage and microgrid projects; and

(E) develop plans for regular and emergency access to manage and mitigate wildfire risk.

(b) CONSULTATION.—In carrying out subsection (a), the Secretary of Energy shall consult with—

(1) the Secretary of Agriculture, acting through the Chief of the Forest Service;

(2) the Secretary of the Interior;

(3) the Administrator of the Federal Emergency Management Agency;

(4) other appropriate Federal agencies;

(5) States;

(6) relevant colleges, universities, and institutions of higher education with relevant expertise; and

(7) other entities, as appropriate.

(c) ELECTRIC UTILITY DEFINED.—In this section, the term ''electric utility'' means—

(1) a rural electric cooperative;

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

(3) an investor-owned utility.

SEC. 12608. WILDFIRE SMOKE EMISSIONS MODELING AND FORECASTING IMPROVEMENT PROGRAM.

(a) IN GENERAL.—The Administrator of the National Oceanic and Atmospheric Administration, in collaboration with other Federal agencies and such academic entities as the Administrator considers appropriate, shall maintain a program to improve wildfire smoke emissions modeling and develop smoke forecasts.

(b) GOAL.—The goal of the program under subsection (a) shall be to develop and extend accurate wildfire smoke forecasts and impact-based decision support services in order to reduce loss of life, injury, and damage to the economy with a focus on—

(1) improving modeling of wildfire smoke emissions, transport, mixing, and chemical transformations through advanced modeling approaches;

(2) developing and disseminating smoke forecasts; and

(3) incorporating risk communication research in developing smoke forecasts and fire weather warning products.

(c) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Administrator of the National Oceanic and Atmospheric Administration to carry out this section $20,000,000 for each of fiscal years 2021 through 2025.

SEC. 12609. EXPOSURE TO WILDFIRE SMOKE AND AIR POLLUTION.

(a) IMPACTS OF ACUTE EXPOSURE TO WILDIFRE SMOKE AND COVID–19.—The Administrator of the Environmental Protection Agency, in coordination with the Director of the Centers for Disease Control and Prevention, and other Federal agencies as appropriate, shall coordinate data collection and epidemiological analysis of the impacts of acute air pollution exposure from wildfires in the context of the COVID–19 pandemic.

(b) CHRONIC AIR POLLUTION EXPOSURE.—The Administrator of the Environmental Protection Agency, acting through the Assistant Administrator for Research and Development, shall coordinate with academic institutions and other research organizations to conduct research to estimate the impacts of chronic exposure to air pollutants, and other pertinent variables, in the context of responding to the COVID–19 pandemic.

SEC. 12610. BUDGETARY EFFECTS.

The budgetary effects of this Act, for the purpose of complying with the Statutory Pay-As-You-Go Act of 2010, shall be determined by reference to the latest statement titled ''Budgetary Effects of PAYGO Legislation'' for this Act, submitted for printing in the Congressional Record by the Chairman of the House Budget Committee, pro-

vided that such statement has been submitted prior to the vote on passage.

SEC. 12611. EFFECTIVE DATE.

This Act, and the amendments made by this Act, shall not take effect until the date on which the Secretary of Energy submits to Congress a certification that implementation of this Act, and the amendments made by this Act, will not reduce the energy security or energy independence of the United States.

SEC. 12612. EFFECTIVE DATE.

This Act, and the amendments made by this Act, shall not take effect until the date on which the Secretary of Energy submits to Congress a certification that implementation of this Act, and the amendments made by this Act, will not increase electric rates or gasoline prices outside of normal market factors.

SEC. 12613. REPORT ON MINING OF CRITICAL MINERALS USING FORCED LABOR IN FOREIGN COUNTRIES.

Not later than 180 days after the date of the enactment of this Act, the Secretary of the Interior, in consultation with the Commissioner of U.S. Customs and Border Protection and the Secretary of State, shall submit to the Congress a report evaluating the use of child labor, slavery, or human trafficking to mine or otherwise obtain one

or more of the minerals listed in the Notice of the Department of the Interior entitled ''Final List of Critical Minerals 2018'' (83 Fed. Reg. 23295), or in any successor notice updating such Final List, for export to the United States.

SEC. 12614. TREE PLANTING GRANT PROGRAM.

(a) DEFINITIONS.—In this section:

(1) ELIGIBLE COST.—The term ''eligible cost'' means, with respect to a project—

(A) the cost of implementing the project, including—

(i) planning and designing the planting activity;

(ii) purchasing trees; and

(iii) preparing the site and conducting planting, including the labor and cost associated with the use of machinery;

(B) the cost of maintaining and monitoring planted trees for a period of up to 3 years to ensure successful establishment of the trees;

(C) the cost of training activities associated with the project; and

(D) any other relevant cost, as determined by the Secretary.

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

(A) a State agency;

(B) a local governmental entity;

(C) an Indian Tribe;

(D) a nonprofit organization; and

(E) a retail power provider.

(3) ENERGY BURDEN.—The term ''energy burden'' means the percentage of household income spent on home energy bills.

(4) INDIAN TRIBE.—The term ''Indian Tribe'' has the meaning given the term ''Indian tribe'' in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304).

(5) LOCAL GOVERNMENTAL ENTITY.—The term ''local governmental entity'' means any municipal government or county government with jurisdiction over local land use decisions.

(6) NONPROFIT ORGANIZATION.—The term ''nonprofit organization'' means an organization that—

(A) is described in section 170(h)(3) of the Internal Revenue Code of 1986; and

(B) operates in accordance with 1 or more of the purposes described in section 170(h)(4)(A) of that Code.

(7) PROGRAM.—The term ''Program'' means the grant program established under subsection (b)(1).

(8) PROJECT.—The term ''project'' means a tree planting project carried out by an eligible entity using grant funds awarded under the Program.

(9) RETAIL POWER PROVIDER.—The term ''retail power provider'' means any entity authorized under applicable State or Federal law to generate, distribute, or provide retail electricity, natural gas, or fuel oil service.

(10) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(b) ESTABLISHMENT.—

(1) IN GENERAL.—The Secretary, in coordination with the Secretary of Agriculture, acting through the Chief of the Forest Service, shall establish a program under which the Secretary shall award grants to eligible entities to conduct tree planting projects in accordance with this section.

(2) TREE PLANTING.—Subject to the availability of appropriations, in carrying out the Pro-

gram, the Secretary shall, to the maximum extent practicable, award sufficient grants each year to plant not less than 300,000 trees each year.

(c) APPLICATIONS.—

(1) IN GENERAL.—An eligible entity that seeks to receive a grant under the Program shall submit an application to the Secretary at such time, in such form, and containing such information as the Secretary may require, including the information described in paragraph (2).

(2) CONTENTS.—An application submitted under paragraph (1) shall include—

(A) a description of how the project will reduce residential energy consumption;

(B) an estimate of the expected reduction in residential energy consumption;

(C) a description of the total eligible costs of the project and sources of funding for the project;

(D) a description of the anticipated community and stakeholder engagement in the project;

(E) a description of the tree species to be planted and how that species is suitable for the local environmental conditions and climate; and

(F) any other relevant information required by the Secretary.

(d) PRIORITY.—In awarding grants under the Program, the Secretary shall give priority to projects that—

(1) provide the largest potential reduction in residential energy consumption for households with a high energy burden;

(2) are located in a neighborhood with lower tree canopy cover and higher maximum daytime summer temperatures;

(3) are located in a neighborhood with high amounts of senior citizens or children;

(4) will collaboratively engage neighbors and community members that will be closely affected by the tree planting; and

(5) will employ a substantial percentage of the workforce locally, with a focus on engaging unemployed and underemployed persons.

(e) COSTS.—

(1) FEDERAL SHARE.—The Secretary shall award a grant to an eligible entity under the Program in an amount equal to not more than 75 percent of the eligible costs of the project, as determined by the Secretary.

(2) MATCHING REQUIREMENT.—As a condition of receiving a grant under the Program, an eligible entity shall provide, in cash or through in-kind contributions from non-Federal sources, matching funds in an amount equal to not less than 25 percent of the eligible costs of the project, as determined by the Secretary.

(f) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out the Program $50,000,000 for each of fiscal years 2021 through 2025.

SEC. 12615 LABOR STANDARDS.

(a) IN GENERAL.—Notwithstanding any other provision of law, for fiscal year 2021 and each fiscal year thereafter, any construction or maintenance projects, including installation or removal of applicable infrastructure, assisted in whole or in part by funds appropriated under sections 1203, 1221, 1802, 1803, 1804, 1805, 2122, 2401, 2502, 2503, 2504, 2505, 2522, 2523, 2524, 2525, 2542, 2543, 2544, 2545, 2547, 2552, 2553, 2561, 3102, 3103, 3104, 3105, 3106, 3107, 3109, 3110, 3111, 3112, 3201, 4101, 4202, 5101, 5301, 5302, 5321, 5322, 5323, 5324, 5341, 5342, 6201, 6301, 6502, 6512, 7001, 8101, 8102, 8206, 8304, 9105, 9302, 9304, 10121, and 12401 of this Act and including 42 U.S.C. 17011 and 42 U.S.C.

16061, without regard to the form or type of Federal assistance provided under such section or part, shall comply with labor standards under this section. Compliance with labor standards under this section shall also apply to entities that are awarded permits, leases or enter into agreements with the Federal Government under subtitle F of Title II of this Act.

(b) CERTIFICATION OF QUALIFIED ENTITIES.—

(1) IN GENERAL.—The Secretary of Labor shall establish a process for certifying entities that submit an application under paragraph (2) as qualified entities with respect to construction and maintenance projects funded in part or whole under sections 1203, 1221, 1802, 1803, 1804, 1805, 2122, 2401, 2502, 2503, 2504, 2505, 2522, 2523, 2524, 2525, 2542, 2543, 2544, 2545, 2547, 2552, 2553, 2561, 3102, 3103, 3104, 3105, 3106, 3107, 3109, 3110, 3111, 3112, 3201, 4101, 4202, 5101, 5301, 5302, 5321, 5322, 5323, 5324, 5341, 5342, 6201, 6301, 6502, 6512, 7001, 8101, 8102, 8206, 8304, 9105, 9302, 9304, 10121, and 12401 of this Act and including 42 U.S.C. 17011 and 42 U.S.C. 16061.

(2) APPLICATION PROCESS.—An entity seeking certification as a qualified entity under this section shall submit an application to the Secretary of

Labor at such time, in such manner, and containing such information as the Secretary may reasonably require, including information to demonstrate compliance with the requirements under subsection (c).

(3) REQUESTS FOR ADDITIONAL INFORMATION.—Not later than 1 year after receiving an application from an entity under paragraph (2)—

(A) the Secretary of Labor may request additional information from the entity in order to determine whether the entity is in compliance with the requirements under subsection (c); and

(B) the entity shall provide such additional information within 30 days of the Secretary of Labor's request under subparagraph (A).

(4) DETERMINATION DEADLINE.—The Secretary of Labor shall make a determination on whether to certify an entity under this section not later than—

(A) in a case in which the Secretary requests additional information described in paragraph (3), 1 year after the Secretary receives such additional information from the entity; or

(B) in a case that is not described in paragraph (3)(A), 1 year after the date on which

the entity submits the application under paragraph (2).

(5) PRECERTIFICATION REMEDIES.—The Secretary shall consider any corrective actions taken by an entity seeking certification under this subsection to remedy an administrative merits determination, arbitral award or decision, or civil judgment identified under subsection (c)(3) and shall impose as a condition of certification any additional remedies necessary to avoid further or repeated violations.

(c) LABOR STANDARDS REQUIREMENTS.—The Secretary of Labor shall require an entity, as a condition of certification under this section, to satisfy each of the following requirements:

(1) The entity shall ensure that all laborers and mechanics employed by contractors and subcontractors in the performance of any construction or maintenance project shall be paid wages at rates not less than those prevailing on projects of a similar character in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code (commonly known as the ''Davis-Bacon Act'').

(2) In the case of any construction or maintenance project, the cost of which exceeds

$25,000,000, the entity shall be a party to, or require contractors and subcontractors in the performance of such construction or maintenance project to consent to, a covered project labor agreement.

(3) The entity, and all contractors and subcontractors in performance of any construction or maintenance project, shall represent in the application submitted under subsection (b)(2) (and periodically thereafter during the performance of the construction or maintenance project as the Secretary of Labor may require) whether there has been any administrative merits determination, arbitral award or decision, or civil judgment, as defined in guidance issued by the Secretary of Labor, rendered against the entity in the preceding 3 years (or, in the case of disclosures after the initial disclosure, during such period as the Secretary of Labor may provide) for violations of—

(A) the Fair Labor Standards Act of 1938 (29 U.S.C. 201 et seq.);

(B) the Occupational Safety and Health Act of 1970 (29 U.S.C. 651 et seq.);

(C) the Migrant and Seasonal Agricultural Worker Protection Act (29 U.S.C. 1801 et seq.);

(D) the National Labor Relations Act (29 U.S.C. 151 et seq.);

(E) subchapter IV of chapter 31 of title 40, United States Code (commonly known as the ''Davis-Bacon Act'');

(F) chapter 67 of title 41, United States Code (commonly known as the ''Service Contract Act'');

(G) Executive Order No. 11246, as amended (relating to equal employment opportunity);

(H) section 503 of the Rehabilitation Act of 1973 (29 U.S.C. 793);

(I) section 4212 of title 38, United States Code;

(J) the Family and Medical Leave Act of 1993 (29 U.S.C. 2601 et seq.);

(K) title VII of the Civil Rights Act of 1964 (42 U.S.C. 2000e et seq.);

(L) the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.);

(M) the Age Discrimination in Employment Act of 1967 (29 U.S.C. 621 et seq.);

(N) Executive Order No. 13658, dated February 2014, (entitled ''Establishing a Minimum Wage for Contractors''); or

(O) equivalent State laws, as defined in guidance issued by the Secretary of Labor.

(4) The entity, and all contractors and subcontractors in the performance of construction or maintenance project, shall not require arbitration for any dispute involving an employee described in paragraph (5) engaged in a service for the entity or any contractor and subcontractor, or enter into any agreement with such employee requiring arbitration of any such dispute, unless such employee is covered by a collective bargaining agreement that provides otherwise.

(5) For purposes of compliance with the National Labor Relations Act (29 U.S.C. 151 et seq.), the Fair Labor Standards Act of 1938 (29 U.S.C. 201 et seq.), and the requirements under this section, the entity, and all contractors and subcontractors in the performance of any construction or maintenance project, shall consider an individual performing any service in such performance as an employee (and not an independent contractor) of the entity, contractor, or subcontractor, respectively, unless—

(A) the individual is free from control and direction in connection with the performance of

the service, both under the contract for the performance of the service and in fact;

(B) the service is performed outside the usual course of the business of the entity, contractor, or subcontractor, respectively; and

(C) the individual is customarily engaged in an independently established trade, occupation, profession, or business of the same nature as that involved in such service.

(6) The entity shall prohibit all contractors and subcontractors in the performance of any construction or maintenance project from hiring employees through a temporary staffing agency unless the relevant State workforce agency certifies that temporary employees are necessary to address an acute, short-term labor demand.

(7) The entity shall require all contractors, subcontractors, successors in interest of the entity, and other entities that may acquire the entity, in the performance or acquisition of any construction or maintenance project, to have and abide by an explicit neutrality policy on any issue involving the exercise by employees of the entity as described in paragraph (5), and of all contractors and subcontractors in the performance of any construction

or maintenance project, of the right to organize and bargain collectively through representatives of their own choosing.

(8) The entity shall require all contractors and subcontractors to participate in a registered apprenticeship program for each skilled craft employed on any construction or maintenance project.

(9) The entity, and all contractors and subcontractors in the performance of any construction or maintenance project, shall not request or otherwise consider the criminal history of an applicant for employment before extending a conditional offer to the applicant, unless—

(A) a background check is otherwise required by law;

(B) the position is for a Federal law enforcement officer (as defined in section 115(c)(1) of title 18, United States Code) position; or

(C) the Secretary of Labor, after consultation with the Secretary of Energy, certifies that precluding criminal history prior to the conditional offer would pose a threat to national security.

(d) DAVIS-BACON ACT.—The Secretary of Labor shall have, with respect to the labor standards described in subsection (d)(1), the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40, United States Code.

(e) PERIOD OF VALIDITY FOR CERTIFICATIONS.—A certification made under this section shall be in effect for a period of 5 years. An entity may reapply to the Secretary of Labor for an additional certification under this section in accordance with the application process under subsection (b)(2).

(f) REVOCATION OF QUALIFIED ENTITY STATUS.—The Secretary of Labor may revoke the certification of an entity under this section as a qualified entity at any time in which the Secretary reasonably determines the entity is no longer in compliance with the requirements of subsection (c).

(g) CERTIFICATION MAY COVER MORE THAN 1 SUBSTANTIALLY SIMILAR PROJECT.—The Secretary of Labor may make certifications under this section which apply with respect to more than 1 project if the projects to which such certification apply are substantially similar projects which meet the requirements of this section. Such projects

shall be treated as a specific construction or maintenance project for purposes of subsection (h)(2).

(h) DEFINITIONS.—In this section:

(1) COVERED PROJECT LABOR AGREEMENT.—The term ''covered project labor agreement'' means a project labor agreement that—

(A) binds all contractors and subcontractors on the construction project through the inclusion of appropriate specifications in all relevant solicitation provisions and contract documents;

(B) allows all contractors and subcontractors to compete for contracts and subcontracts without regard to whether they are otherwise a party to a collective bargaining agreement;

(C) contains guarantees against strikes, lockouts, and other similar job disruptions;

(D) sets forth effective, prompt, and mutually binding procedures for resolving labor disputes arising during the covered project labor agreement; and

(E) provides other mechanisms for labor-management cooperation on matters of mutual interest and concern, including productivity, quality of work, safety, and health.

(2) PROJECT LABOR AGREEMENT.—The term ''project labor agreement'' means a pre-hire collective bargaining agreement with one or more labor organizations that establishes the terms and conditions of employment for a specific construction project and is described in section 8(f) of the National Labor Relations Act (29 U.S.C. 158(f)).

(3) QUALIFIED ENTITY.—The term ''qualified entity'' means an applicant for certification under subsection (b) that the Secretary of Labor certifies as a qualified entity in accordance with subsection (b).

(i) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this such sums as necessary for fiscal year 2020 and each fiscal year thereafter.

SEC. 12616. AFFIRMING PROTECTIONS FOR CHILDREN AND WORKERS.

Nothing in this Act shall be construed to affect the safety and wellbeing of children in the carrying out of projects, programs, and other applicable items in this Act nor to undermine or affect the enforcement of laws relating to protections against child labor and forced labor, including—

(1) the Fair Labor Standards Act of 1938 (29 U.S.C. 201 et seq.);

(2) title 29, subtitle B, chapter V, Subchapter A, Part 570, the Child Labor Regulations, Orders, and Statements of Interpretation;

(3) article 3 of the International Labor Organization Convention concerning the prohibition and immediate action for the elimination of the worst forms of child labor (December 2, 2000), or in violation of human rights;

(4) number 182 of the International Labor Organization Convention, entitled ''Worst Forms of Child Labour Convention'' (1999);

(5) number 105 of the International Labor Organization Convention, entitled ''Abolition of Forced Labour Convention'' (1957);

(6) applicable trade laws, including trade preference programs, trade agreements and Section 307 of the Tariff Act of 1930; and

(7) Executive Order No. 13126, dated June 12, 1999, (entitled ''Prohibition of Acquisition of Products Produced by Forced or Indentured Child Labor'').

SEC. 12617. RURAL AND REMOTE COMMUNITIES ELECTRIFICATION GRANTS.

(a) IN GENERAL.—Section 609 of the Public Utility Regulatory Policies Act (7 U.S.C. 918c) is amended—

(1) in subsection (a)—

(A) in paragraph (1), by striking ''or municipality'' and inserting '', municipality, or Indian Tribe'';

(B) in paragraph (5), by striking ''10,000'' and inserting ''20,000''; and

(C) by adding at the end the following:

''(6) The term 'economically distressed community' means a unit of local government, an Indian Tribe, or a political subdivision thereof, that is significantly impacted by the closure occurring on or after January 1, 2010, of an electric generating station that primarily consumes coal as a fuel source, including by the loss of—

''(A) employment directly from or associated with the electric generating station, including an associated mine;

''(B) tax revenue, lease payments, or royalties directly from or associated with the electric generating station; or

''(C) access to affordable energy.'';

(2) in subsection (b), by inserting ''or economically distressed communities'' after ''rural areas'' each place it appears; and

(3) in subsection (d)—

(A) by striking ''$20,000,000'' and inserting ''$50,000,000''; and

(B) by striking ''2006 through 2012'' and inserting ''2021 through 2025''.

SEC. 12618. COAL COMMUNITY RESOURCE CLEARINGHOUSE.

(a) ESTABLISHMENT.—Not later than 180 days after the date of enactment of this Act, the Secretary of Energy shall publish, maintain, and make publicly available a clearinghouse, to be known as the ''Coal Community Resource Clearinghouse'', on the website of the Department of Energy for the purpose of increasing awareness of Federal and State programs, grants, loans, loan guarantees, and other assistance resources the Secretary determines will assist economic development activities in economically distressed communities.

(b) PERIODIC UPDATES.—In carrying out subsection (a), the Secretary shall, not less frequently than once per calendar year, update the Coal Community Resource Clearinghouse to address changes to the needs of economically distressed communities.

(c) ECONOMICALLY DISTRESSED COMMUNITY DEFINED.—The term ''economically distressed community'' means a unit of local government, an Indian Tribe, or a political subdivision thereof, that is significantly impacted by the closure occurring on or after January 1, 2010, of an electric generating station that primarily consumes coal as a fuel source, including by the loss of—

(1) employment directly from or associated with the electric generating station, including an associated mine;

(2) tax revenue, lease payments, or royalties directly from or associated with the electric generating station; or

(3) access to affordable energy.

SEC. 12619. REPORT ON FOSSIL FUEL SUBSIDIES.

The Secretary of the Treasury, in consultation with other relevant departments and agencies, shall submit to Congress a report that contains—

(1) an identification of any existing fossil fuel production subsidies not eliminated by this Act, or the amendments made by this Act; and

(2) a quantification of the economic costs of such subsidies.

SEC. 12620. PUBLICATION OF INTERCONNECTIONS SEAMS STUDY.

Not later than 30 days after the date of the enactment of this Act, the Secretary of Energy shall submit to Congress and make publicly available on the website of the Department a report on the results of the Interconnections Seam Study conducted by the Department.

SEC. 12621. DEPARTMENT OF ENERGY RESEARCH MISSION ON CLIMATE CHANGE AND EMISSIONS REDUCTION.

(a) GOALS.—Section 902 of the Energy Policy Act of 2005 (42 U.S.C. 16181) is amended—

(1) in paragraph (4), by striking ''and'' at the end; and

(2) by striking paragraph (5) and inserting the following:

''(5) decreasing the environmental impact of energy-related activities, including by deeply reducing emissions; and

''(6) improving energy-sector resilience to climate change.''.

(b) EMISSIONS DEFINED FOR GOALS.—Section 902 of the Energy Policy Act of 2005 (42 U.S.C. 16181) is amended by adding at the end the following:

''(e) EMISSIONS DEFINED.—In this section, the term 'emissions' means greenhouse gas emissions or other pollutants.''.

(c) EMISSIONS REDUCTION.—Section 911 of the Energy Policy Act of 2005 (42 U.S.C. 16191) is amended—

(1) in the heading by inserting ''**AND EMISSIONS REDUCTIONS**'' after ''**ENERGY EFFICIENCY**'';

(2) in subsection (a)—

(A) in paragraph (1)—

(i) by inserting ''and emissions reductions'' after ''energy efficiency''; and

(ii) in subparagraph (A), by inserting '', and reducing emissions from,'' after ''efficiency of''; and

(B) in paragraph (2)—

(i) by amending the matter preceding subparagraph (A)(i) to read as follows:

''(A) advanced, cost-effective technologies to improve the energy efficiency and environmental performance of, and reduce emissions from, vehicles, including—'';

(ii) by amending subparagraph (B) to read as follows:

''(B) cost-effective technologies for new construction and retrofit, to improve the energy efficiency and environmental performance of, and reduce emissions from buildings, using a whole-buildings approach, including onsite clean energy generation and beneficial electrification;''; and

(iii) by amending subparagraph (C) to read as follows:

''(C) advanced technologies to improve the energy efficiency, environmental performance, and process efficiency of, and reduce emissions from industry, especially energy-intensive and waste-intensive industries;''; and

(3) by adding at the end the following:

''(f) EMISSIONS DEFINED.—In this section, the term 'emissions' means greenhouse gas emissions or other pollutants.''.

SEC. 12622. STUDY ON EQUITABLE DISTRIBUTION OF BENEFITS OF CLEAN ENERGY.

(a) FRONTLINE COMMUNITY.—In this section, the term ''frontline community'' means a community with significant representation of communities of color, low-income communities, or Tribal and indigenous communities,

that experiences, or is at risk of experiencing, higher or more adverse human health or environmental effects.

(b) STUDY.—Not later than 1 year after the date of the enactment of this Act, the Secretary of Energy shall enter into an agreement with the National Academies of Science, Engineering, and Medicine to undertake a study on technical and non-technical barriers to and solutions for ensuring equitable distribution of the benefits associated with clean energy in frontline communities across all sectors of the economy, and in particular the role of the Department of Energy in assessing and mitigating such barriers. The study shall—

(1) assess the state of research on the equitable distribution of the benefits of clean energy including workforce development and job creation;

(2) assess the progress in implementing programs and policies that result in increased adoption of clean energy technologies in frontline communities;

(3) identify barriers as well as potential incentives and mechanisms to achieving the equitable distribution of the benefits associated with clean energy in frontline communities, including through the consideration of social, behavioral, regulatory, policy, market, and technology aspects, and considerations

of the characteristics of individual communities, such as geographical location, average income, and racial-ethnic composition; and

(4) recommend research areas for the Department of Energy to make progress towards ensuring equitable distribution of the benefits associated with clean energy in frontline communities.

SEC. 12623. STUDY ON CERTAIN CLIMATE CHANGE MITIGATION EFFORTS.

(a) IN GENERAL.—Not later than 90 days after the date of enactment of this Act, the Secretary of Transportation shall seek to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine (referred to in this section as the ''National Academies'') to conduct a study on climate change mitigation efforts with respect to the civil aviation and aerospace industries.

(b) STUDY CONTENTS.—In conducting the study under subsection (a), the National Academies shall—

(1) identify climate change mitigation efforts, including efforts relating to emerging technologies, in the civil aviation and aerospace industries;

(2) develop and apply an appropriate indicator for assessing the effectiveness of such efforts;

(3) identify gaps in such efforts;

(4) identify barriers preventing expansion of such efforts; and

(5) develop recommendations with respect to such efforts.

(c) REPORTS.—

(1) FINDINGS OF STUDY.—Not later than 1 year after the date on which the Secretary enters into an agreement for a study pursuant to subsection (a), the Secretary shall submit to the appropriate congressional committees the findings of the study.

(2) ASSESSMENT.—Not later than 180 days after the date on which the Secretary submits the findings pursuant to paragraph (1), the Secretary, acting through the Administrator of the Federal Aviation Administration, shall submit to the appropriate congressional committees a report that contains an assessment of the findings.

(d) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary to carry out this section $1,500,000.

(e) DEFINITIONS.—In this section:

(1) APPROPRIATE CONGRESSIONAL COMMITTEES.—The term ''appropriate congressional committees'' means the Committee on Transportation

and Infrastructure of the House of Representatives, the Committee on Commerce, Science, and Transportation of the Senate, and other congressional committees determined appropriate by the Secretary.

(2) CLIMATE CHANGE MITIGATION EFFORTS.—The term ''climate change mitigation efforts'' means efforts, including the use of technologies, materials, processes, or practices, that contribute to the reduction of greenhouse gas emissions.

SEC. 12624. LOW-DOSE-RADIATION RESEARCH.

Section 306(c) of the Department of Energy Research and Innovation Act (42 U.S.C. 18644(c)) is amended to read as follows:

''(c) LOW-DOSE-RADIATION RESEARCH PROGRAM.—

''(1) IN GENERAL.—The Secretary shall carry out a research program on low-dose and low dose-rate radiation to—

''(A) enhance the scientific understanding of, and reduce uncertainties associated with, the effects of exposure to low-dose and low dose-rate radiation; and

''(B) inform improved risk-assessment and risk-management methods with respect to such radiation.

''(2) PROGRAM COMPONENTS.—In carrying out the program required under paragraph (1), the Secretary shall—

''(A) support and carry out the directives under section 106 of the American Innovation and Competitiveness Act (42 U.S.C. 6601 note), with respect to low dose and low-dose rate radiation research, in coordination with the Physical Science Subcommittee of the National Science and Technology Council;

''(B) identify and, to the extent possible, quantify, potential monetary and health-related impacts to Federal agencies, the general public, industry, research communities, and other users of information produced by such research program;

''(C) leverage the collective body of knowledge from prior and existing low-dose and low dose-rate radiation research;

''(D) engage with other Federal agencies, research communities, and potential users of information produced under this section, including institutions performing or utilizing radiation research, medical physics, radiology, health physics, and emergency response measures; and

"(E) support education and outreach activities to disseminate information and promote public understanding of low-dose radiation, with a focus on non-emergency situations such as medical physics, space exploration, and naturally occurring radiation.

"(3) RESEARCH PLAN.—

"(A) NATIONAL ACADEMY OF SCIENCES.—Not later than 90 days after the date of enactment of this Act, the Secretary shall enter into an agreement with the National Academy of Sciences to develop a long-term strategic and prioritized research agenda for the program described in paragraph (2);

"(B) CONGRESS.—Not later than 18 months after the date of enactment of this Act, the Secretary shall submit the research plan developed under subparagraph (A) to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

"(4) PROGRAM EVALUATION.—

"(A) INDEPENDENT EXTERNAL ENTITY.—Not later than 3 years after the date of enact-

ment of this Act, and every 2 years thereafter, the Secretary shall enter into agreements with an independent external entity to perform a program evaluation.

''(B) CONGRESS.—The Secretary shall submit the program evaluations performed under subparagraph (A) to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

''(5) DEFINITIONS.—In this subsection:

''(A) LOW-DOSE RADIATION.—The term 'low-dose radiation' means a radiation dose of less than 100 millisieverts.

''(B) LOW DOSE-RATE RADIATION.—The term 'low dose-rate radiation' means a radiation dose rate of less than 5 millisieverts per hour.

''(6) RULE OF CONSTRUCTION.—Nothing in this subsection shall be construed to subject any research carried out by the Secretary for the program under this subsection to any limitations described in section 977(e) of the Energy Policy Act of 2005 (42 U.S.C. 16317(e)).

''(7) FUNDING.—There are authorized to be appropriated to the Secretary to carry out the program under this subsection—

''(A) $20,000,000 for fiscal year 2021;

''(B) $30,000,000 for fiscal year 2022;

''(C) $40,000,000 for fiscal year 2023; and

''(D) $50,000,000 for fiscal year 2024.''.

SEC. 12625. ONLINE PUBLICATION OF GREENHOUSE GAS EMISSIONS.

(a) IN GENERAL.—The Secretary of the Interior shall make freely available on a public website, with respect to the previous year—

(1) information that describes for each fossil fuel operation that is subject to the mineral leasing laws or title III or V of the Federal Land Policy and Management Act of 1976 (30 U.S.C. 1761 et seq.), regardless of size, including production, storage, gathering, processing, transportation, and handling operations—

(A) the aggregate amount of each fossil fuel, by type and by State, produced on Federal leases; and

(B) for gas reported, the portion and source of such amount that was released or dis-

posed of by each of venting, flaring, and fugitive release; and

(2) information that describes the amount and sources of energy, in delivered megawatt hours, produced from operating solar, wind, and geothermal projects on public lands under lease for the production of renewable energy.

(b) FORMAT.—Information made available under this section shall be presented in a format that—

(1) translates such amounts and portions into emissions of metric tons of greenhouse gases expressed in carbon dioxide equivalent using both the 20-year and 100-year Global Warming Potential-weighted emission values;

(2) for energy produced from solar, wind, and geothermal projects, includes an estimate of the net emissions that would result from production of the same amount of energy from new fossil fuel-fired facilities; and

(3) can be downloaded in a machine readable format.

(c) DATA PUBLICATION FREQUENCY.—The data made available under this section shall be updated at least annually.

SEC. 12626. SENSE OF CONGRESS.

It is the sense of Congress that in order to reduce emissions and meet 100 percent of the power demand in the United States through clean, renewable, or zero emission energy sources while maintaining United States leadership in science and technology, the Secretary of Energy must prioritize funding for critical fundamental research infrastructure and for basic research and development activities carried out through the Office of Science.

SEC. 12627. USE OF BIRD-SAFE FEATURES, PRACTICES, AND STRATEGIES IN PUBLIC BUILDINGS.

(a) IN GENERAL.—Chapter 33 of title 40, United States Code, is amended by adding at the end the following:

"§ 3319. Use of bird-safe features, practices, and strategies in public buildings

''(a) CONSTRUCTION, ALTERATION, AND ACQUISITION OF PUBLIC BUILDINGS.—The Administrator of General Services shall incorporate, to the extent practicable, features, practices, and strategies to reduce bird fatality resulting from collisions with public buildings for each public building—

''(1) constructed;

''(2) acquired; or

''(3) of which more than 50 percent of the facade is substantially altered (in the opinion of the Commissioner of Public Buildings).

''(b) DESIGN GUIDE.—The Administrator shall develop a design guide to carry out subsection (a) that includes the following:

''(1) Features for reducing bird fatality resulting from collisions with public buildings throughout all construction phases, taking into account the number of each such bird fatality that occurs at different types of public buildings.

''(2) Methods and strategies for reducing bird fatality resulting from collisions with public buildings during the operation and maintenance of such buildings, including installing interior, exterior, and site lighting.

''(3) Best practices for reducing bird fatality resulting from collisions with public buildings, including—

''(A) a description of the reasons for adopting such practices; and

''(B) an explanation for the omission of a best practice identified pursuant to subsection (c).

''(c) IDENTIFYING BEST PRACTICES.—To carry out subsection (b)(3), the Administrator may identify best practices for reducing bird fatality resulting from collisions with public buildings, including best practices recommended by—

''(1) Federal agencies with expertise in bird conservation;

''(2) nongovernmental organizations with expertise in bird conservation; and

''(3) representatives of green building certification systems.

''(d) DISSEMINATION OF DESIGN GUIDE.—The Administrator shall disseminate the design guide developed pursuant to subsection (b) to all Federal agencies, subagencies, and departments with independent leasing authority from the Administrator.

''(e) UPDATE TO DESIGN GUIDE.—The Administrator shall, on a regular basis, update the design guide developed pursuant to subsection (b) with respect to the priorities of the Administrator for reducing bird fatality resulting from collisions with public buildings.

''(f) EXEMPT BUILDINGS.—This section shall not apply to—

''(1) any building or site listed, or eligible for listing, on the National Register of Historic Places;

''(2) the White House and the grounds of the White House;

''(3) the Supreme Court building and the grounds of the Supreme Court; or

''(4) the United States Capitol and any building on the grounds of the Capitol.

''(g) CERTIFICATION.—Not later than October 1 of each fiscal year, the Administrator, acting through the Commissioner, shall certify to Congress that the Administrator uses the design guide developed pursuant to subsection (b) for each public building described in subsection (a).

''(h) REPORT.—Not later than October 1 of each fiscal year, the Administrator shall submit to Congress a report that includes—

''(1) the certification under subsection (g); and

''(2) to the extent practicable, the number of each such bird fatality that occurred as a result of a collision with the public buildings occupied by the respective head of each Federal agency.''.

(b) CLERICAL AMENDMENT.—The table of sections at the beginning of chapter 33 of title 40, United States Code, is amended by adding at the end the following new item:

''3319. Use of bird-safe features, practices, and strategies in public buildings.''.

SEC. 12628. GAS WASTE REDUCTION AND ENHANCEMENT OF GAS MEASURING AND REPORTING.

(a) IN GENERAL.—Title I of the Federal Oil and Gas Royalty Management Act of 1982 (30 U.S.C. 1711 et seq.) is amended by adding at the end the following:

"SEC. 118. GAS WASTE REDUCTION AND ENHANCEMENT OF GAS MEASURING AND REPORTING.

"(a) REGULATIONS FOR PREVENTING AND REDUCING WASTE OF GAS VIA VENTING, FLARING, AND FUGITIVE RELEASES.—

"(1) REQUIREMENT TO ISSUE REGULATIONS.—Not later than 2 years after the date of enactment of this section, the Secretary shall issue regulations pursuant to the Secretary's authority under the Mineral Leasing Act, the Federal Land Policy and Management Act of 1976, the Indian Mineral Leasing Act of 1938, and other statutes authorizing the Secretary to regulate oil and gas activities on Federal land and Indian lands, that establish requirements for reducing and preventing the waste of gas, including by venting, flaring, and fugitive releases, from covered operations.

"(2) CONTENT OF REGULATIONS.—The regulations shall, with respect to covered operations—

"(A) require that, beginning not later than 3 years after the date of enactment of this sec-

tion, each operator captures at least 85 percent of all gas produced in each year from each onshore well that is subject to a mineral leasing law;

''(B) require that, beginning not later than 5 years after the date of enactment of this section, each operator captures at least 99 percent of all gas produced in each year from each onshore well that is subject to a mineral leasing law;

''(C) require flaring of gas, rather than venting, in all instances in which gas is not captured;

''(D) require that every application for a permit to drill a production well—

''(i) demonstrate sufficient infrastructure and capacity is in place to capture the expected quantity of produced gas from the well; and

''(ii) be published with an opportunity for a public comment period of at least 30 days;

''(E) beginning not later than 2 years after the date of enactment of this section, prohibit

all new and refractured production wells from flaring;

"(F) require the operator of any covered operation that routinely flares gas before the effective date of a regulation prohibiting flaring issued pursuant to subparagraph (E) to submit a gas capture plan to the Secretary not later than 180 days before such effective date that ensures that such operator will meet the requirements described in subparagraphs (A) and (B);

"(G) set performance standards for newly installed equipment based on modern equipment that minimize gas loss from—

"(i) storage tanks;

"(ii) dehydrators;

"(iii) compressors;

"(iv) open-ended valves or lines;

"(v) pumps; and

"(vi) such other equipment as the Secretary determines appropriate to reduce and prevent gas release;

"(H) require that operators replace existing equipment within one year of the publica-

tion date of performance standards established under subsection (G);

''(I) require the replacement of all high-bleed gas-actuated pneumatic devices with low-bleed or no-bleed devices not later than 180 days after the date of issuance of the regulation enacted under subparagraph (A);

''(J) set performance standards based on modern procedures and equipment that minimize gas loss from—

''(i) downhole maintenance;

''(ii) liquids unloading;

''(iii) well completion; and

''(iv) such other procedures as the Secretary determines appropriate to reduce and prevent gas release;

''(K) require all operators to have leak detection programs with regularly scheduled inspections that assess the entire covered operation using an infrared camera or other equipment with methods that provide overall at least equivalent sensitivity and effectiveness in detecting leaks on a timely basis;

''(L) require any leaks found to be repaired promptly, and in any case not later than

4 weeks after the discovery of the leak, except where exceptional circumstances warrant an extension of not more than 8 additional weeks; and

''(M) require recordkeeping for—

''(i) equipment maintenance;

''(ii) leak detection and repair;

''(iii) venting events;

''(iv) flaring events; and

''(v) such other operations as the Secretary determines appropriate to reduce and prevent gas release.

''(b) GAS MEASURING, REPORTING, AND TRANSPARENCY REQUIREMENTS.—

''(1) IN GENERAL.—The Secretary shall, not later than one year after the date of enactment of this section, issue regulations requiring each operator to measure and report, with respect to all gas subject to the mineral leasing laws, all such gas produced, consumed on site, or lost through venting, flaring, or fugitive releases.

''(2) MEASURING AND REPORTING REQUIREMENTS.—To account for all gas referred to in paragraph (1), the Secretary shall issue regulations requiring each operator to—

"(A) measure all production and disposition of gas with such accuracy that fugitive gas releases can be calculated;

"(B) install metering devices to measure all flared gas; and

"(C) report to the Secretary the volumes of gas measured under the requirements described in subparagraph (A), including—

"(i) all new measured values for production and disposition, including vented and flared volumes; and

"(ii) values for fugitive releases based on guidelines for their calculation established by the Secretary in such regulations.

"(3) TRANSPARENCY.—The Secretary shall make all new data produced under the requirements established by the Secretary under this subsection, including calculated fugitive releases and volumes of gas lost to venting and flaring, publicly available through the internet—

"(A) without a fee or other access charge;

"(B) in a searchable, sortable, and downloadable manner, to the extent technically possible; and

"(C) as soon as technically practicable after the report by the operator is filed.

"(c) APPLICATION.—Except as otherwise specified in this section, the requirements established by the Secretary under this section shall apply to—

"(1) the construction and operation of any covered operation initiated, including the refracturing of existing wells, on or after the date of the issuance of regulations under this section; and

"(2) after the end of the 1-year period beginning on the date of the issuance of such regulations, any covered operation initiated before the date of the issuance of such regulations.

"(d) ENFORCEMENT MECHANISMS.—

"(1) IN GENERAL.—The Secretary shall include in the regulations issued under this section consistent enforcement mechanisms for covered operations that are not in compliance with the requirements established by the regulations.

"(2) REQUIREMENTS.—The Secretary shall include in the enforcement mechanisms described in paragraph (1)—

"(A) civil penalties for unauthorized venting and flaring, which shall—

"(i) apply in lieu of the penalties and related provisions under section 109; and

"(ii) include production restrictions and civil monetary penalties equivalent to 3 times the market value of the vented or flared gas; and

"(B) civil penalties that apply to noncompliance with other new or existing procedures, which shall—

"(i) apply in addition to or in lieu of the penalties and related provisions under section 109;

"(ii) include production restrictions or monetary penalties, or both; and

"(iii) in the case of monetary penalties, be proportional to market conditions.

"(e) DEFINITIONS.—In this section:

"(1) CAPTURE.—The term 'capture' means the physical containment of natural gas for transportation to market or productive use of natural gas, and includes reinjection and royalty-free on-site uses.

"(2) COVERED OPERATIONS.—The term 'covered operations' means all oil and gas operations

that are subject to mineral leasing law or title V of the Federal Land Policy and Management Act of 1976 (30 U.S.C. 1761 et seq.), regardless of size, including production, storage, gathering, processing, and handling operations.

''(3) FLARE AND FLARING.—The terms 'flare' and 'flaring' mean the intentional and controlled burning of gas that occurs in the course of oil and gas operations to limit release of gas to the atmosphere.

''(4) FUGITIVE RELEASE.—The term 'fugitive release' means the unintentional and uncontrolled release of gas into the atmosphere in the course of oil and gas operations.

''(5) GAS CAPTURE PLAN.—The term 'gas capture plan' means a plan that includes specific goals, including equipment and timelines, for capturing, gathering, and processing gas produced under an oil or gas lease.

''(6) GAS RELEASE.—The term 'gas release' includes all gas that is discharged to the atmosphere via venting or fugitive release.

''(7) VENT AND VENTING.—The terms 'vent' and 'venting' mean the intentional and controlled re-

lease of gas into the atmosphere in the course of oil and gas operations.''.

(b) CLERICAL AMENDMENT.—The table of contents in section 1 of such Act is amended by inserting after the item relating to section 117 the following:

''Sec. 118. Gas waste reduction and enhancement of gas measuring and reporting.''.

(c) UPDATES.—The Secretary of the Interior shall update the regulations required by the amendments made by this section when the Secretary determines appropriate, but no less frequently than once every ten years, to reflect new information regarding gas waste, the impacts of that waste, and the availability of technologies and performance measures to reduce gas waste.

(d) APPLICATION OF PRIOR RULE.—The final rule entitled ''Waste Prevention, Production Subject to Royalties, and Resource Conservation'', as published in the Federal Register November 18, 2016 (81 Fed. Reg. 83008), is hereby reinstated, and each of its provisions shall apply unless and until the effective date of a subsequent final rule promulgated under the amendment made by subsection (a), or promulgated under another applicable authority, that replaces or repeals such provision.

(e) ASSESSMENT OF VENTING, FLARING, AND FUGITIVE RELEASES.—Not later than 180 days after the end of the 1-year period beginning on the date the Secretary

of the Interior first receives data submitted under the requirements established under subsection (b) of section 118 of the Federal Oil and Gas Royalty Management Act of 1982, as amended by this section, the Secretary shall—

(1) submit a report to Congress describing—

(A) the volume of fugitive releases, and gas consumed or lost by venting and flaring, from covered operations (as those terms are used in such section); and

(B) additional regulations the Secretary considers would help further curtail venting, flaring, and fugitive releases, or the rational basis for not issuing such additional regulations if the Secretary considers additional regulations would not be appropriate to further curtail venting, flaring, and fugitive releases; and

(2) issue regulations described in the report required by paragraph (1)(B) not later than 1 year after the date of the submission of the report.

Subtitle G—Open Back Better

SEC. 12701. FACILITIES ENERGY RESILIENCY.

(a) DEFINITIONS.—In this section:

(1) COVERED PROJECT.—The term ''covered project'' means a building project at an eligible facility that—

(A) increases—

(i) resiliency, including—

(I) public health and safety;

(II) power outages;

(III) natural disasters;

(IV) indoor air quality; and

(V) any modifications necessitated by the COVID–19 pandemic;

(ii) energy efficiency;

(iii) renewable energy; and

(iv) grid integration; and

(B) may have combined heat and power and energy storage as project components.

(2) EARLY CHILDHOOD EDUCATION PROGRAM.—The term ''early childhood education program'' has the meaning given the term in section 103 of the Higher Education Act of 1965 (20 U.S.C. 1003).

(3) ELEMENTARY SCHOOL.—The term ''elementary school'' has the meaning given the term in section 8101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801).

(4) ELIGIBLE FACILITY.—The term ''eligible facility'' means a public facility, as determined by the Secretary, including—

(A) a public school, including an elementary school and a secondary school;

(B) a facility used to operate an early childhood education program;

(C) a local educational agency;

(D) a medical facility;

(E) a local or State government building;

(F) a community facility;

(G) a public safety facility;

(H) a day care center;

(I) an institution of higher education;

(J) a public library; and

(K) a wastewater treatment facility.

(5) ENVIRONMENTAL JUSTICE COMMUNITY.—The term ''environmental justice community'' means a community with significant representation of communities of color, low income communities, or Tribal and indigenous communities, that experiences, or is at risk of experiencing, higher or more adverse human health or environmental effects.

(6) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the meaning given the term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

(7) LOCAL EDUCATIONAL AGENCY.—The term ''local educational agency'' has the meaning given the term in section 8101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801).

(8) LOW INCOME.—The term ''low income'', with respect to a household, means an annual household income equal to, or less than, the greater of—

(A) 80 percent of the median income of the area in which the household is located, as reported by the Department of Housing and Urban Development; and

(B) 200 percent of the Federal poverty line.

(9) LOW INCOME COMMUNITY.—The term ''low income community'' means a census block group in which not less than 30 percent of households are low income.

(10) SECONDARY SCHOOL.—The term ''secondary school'' has the meaning given the term in section 8101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801).

(11) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(12) STATE.—The term ''State'' has the meaning given the term in section 3 of the Energy Policy and Conservation Act (42 U.S.C. 6202).

(13) STATE ENERGY PROGRAM.—The term ''State Energy Program'' means the State Energy Program established under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.).

(14) TRIBAL ORGANIZATION.—

(A) IN GENERAL.—The term ''tribal organization'' has the meaning given the term in section 3765 of title 38, United States Code.

(B) TECHNICAL AMENDMENT.—Section 3765(4) of title 38, United States Code, is amended by striking ''section 4(l) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b(l))'' and inserting ''section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304)''.

(b) STATE PROGRAMS.—

(1) ESTABLISHMENT.—Not later than 60 days after the date of enactment of this Act, the Secretary shall distribute grants to States under the State Energy Program, in accordance with the allo-

cation formula established under that Program, to implement covered projects.

(2) USE OF FUNDS.—

(A) IN GENERAL.—Subject to subparagraph (B), grant funds under paragraph (1) may be used for technical assistance, project facilitation, and administration.

(B) TECHNICAL ASSISTANCE.—A State may use not more than 10 percent of grant funds received under paragraph (1) to provide technical assistance for the development, facilitation, management, oversight, and measurement of results of covered projects implemented using those funds.

(C) ENVIRONMENTAL JUSTICE AND OTHER COMMUNITIES.—To support communities adversely impacted by the COVID–19 pandemic, a State shall use not less than 40 percent of grant funds received under paragraph (1) to implement covered projects in environmental justice communities or low income communities.

(D) PRIVATE FINANCING.—A State receiving a grant under paragraph (1) shall—

(i) to the extent practicable, leverage private financing for cost-effective energy

efficiency, renewable energy, resiliency, and other smart-building improvements, such as by entering into an energy service performance contract; but

(ii) maintain the use of grant funds to carry out covered projects with more project resiliency, public health, and capital-intensive efficiency and emission reduction components than are typically available through private energy service performance contracts.

(E) GUIDANCE.—In carrying out a covered project using grant funds received under paragraph (1), a State shall, to the extent practicable, adhere to guidance developed by the Secretary pursuant to the American Recovery and Reinvestment Act of 2009 (Public Law 111–5; 123 Stat. 115) relating to distribution of funds, if that guidance will speed the distribution of funds under this subsection.

(3) NO MATCHING REQUIREMENT.—Notwithstanding any other provision of law, a State receiving a grant under paragraph (1) shall not be required to provide any amount of matching funding.

(4) REPORT.—Not later than 1 year after the date on which grants are distributed under paragraph (1), and each year thereafter until the funds appropriated under paragraph (5) are no longer available, the Secretary shall submit a report on the use of those funds (including in the communities described in paragraph (2)(C)) to—

(A) the Subcommittee on Energy and Water Development of the Committee on Appropriations of the Senate;

(B) the Subcommittee on Energy and Water Development and Related Agencies of the Committee on Appropriations of the House of Representatives;

(C) the Committee on Energy and Natural Resources of the Senate;

(D) the Committee on Energy and Commerce of the House of Representatives; and

(E) the Committee on Education and Labor of the House of Representatives.

(5) FUNDING.—In addition to any amounts made available to the Secretary to carry out the State Energy Program, there is authorized to be appropriated to the Secretary $18,000,000,000 to

carry out this subsection, to remain available until September 30, 2025.

(6) SUPPLEMENT, NOT SUPPLANT.—Funds made available under paragraph (5) shall supplement, not supplant, any other funds made available to States for the State Energy Program or the weatherization assistance program established under part A of title IV of the Energy Conservation and Production Act (42 U.S.C. 6861 et seq.).

(c) FEDERAL ENERGY MANAGEMENT PROGRAM.—

(1) IN GENERAL.—Not later than 60 days after the date of enactment of this Act, the Secretary shall use the funds appropriated under paragraph (4) to provide grants under the AFFECT program under the Federal Energy Management Program of the Department of Energy to implement covered projects.

(2) PRIVATE FINANCING.—A recipient of a grant under paragraph (1) shall—

(A) to the extent practicable, leverage private financing for cost-effective energy efficiency, renewable energy, resiliency, and other smart-building improvements, such as by entering into an energy service performance contract; but

(B) maintain the use of grant funds to carry out covered projects with more project resiliency, public health, and capital-intensive efficiency and emission reduction components than are typically available through private energy service performance contracts.

(3) REPORT.—Not later than 1 year after the date on which grants are distributed under paragraph (1), and each year thereafter until the funds appropriated under paragraph (4) are no longer available, the Secretary shall submit a report on the use of those funds to—

(A) the Subcommittee on Energy and Water Development of the Committee on Appropriations of the Senate;

(B) the Subcommittee on Energy and Water Development and Related Agencies of the Committee on Appropriations of the House of Representatives;

(C) the Committee on Energy and Natural Resources of the Senate;

(D) the Committee on Energy and Commerce of the House of Representatives; and

(E) the Committee on Education and Labor of the House of Representatives.

(4) FUNDING.—In addition to any amounts made available to the Secretary to carry out the AFFECT program described in paragraph (1), there is authorized to be appropriated to the Secretary $500,000,000 to carry out this subsection, to remain available until September 30, 2025.

(d) TRIBAL ORGANIZATIONS.—

(1) IN GENERAL.—Not later than 60 days after the date of enactment of this Act, the Secretary, acting through the head of the Office of Indian Energy, shall distribute funds made available under paragraph (3) to tribal organizations to implement covered projects.

(2) REPORT.—Not later than 1 year after the date on which funds are distributed under paragraph (1), and each year thereafter until the funds made available under paragraph (3) are no longer available, the Secretary shall submit a report on the use of those funds to—

(A) the Subcommittee on Energy and Water Development of the Committee on Appropriations of the Senate;

(B) the Subcommittee on Energy and Water Development and Related Agencies of

the Committee on Appropriations of the House of Representatives;

(C) the Committee on Energy and Natural Resources of the Senate;

(D) the Committee on Energy and Commerce of the House of Representatives; and

(E) the Committee on Education and Labor of the House of Representatives.

(3) FUNDING.—There is authorized to be appropriated to the Secretary $1,500,000,000 to carry out this subsection, to remain available until September 30, 2025.

(e) USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS.—

(1) IN GENERAL.—Except as provided in paragraph (2), none of the funds made available by or pursuant to this section may be used for a covered project unless all of the iron, steel, and manufactured goods used in the project are produced in the United States.

(2) EXCEPTIONS.—The requirement under paragraph (1) shall be waived by the head of the relevant Federal department or agency in any case or category of cases in which the head of the relevant Federal department or agency determines that—

(A) adhering to that requirement would be inconsistent with the public interest;

(B) the iron, steel, and manufactured goods needed for the project are not produced in the United States—

(i) in sufficient and reasonably available quantities; and

(ii) in a satisfactory quality; or

(C) the inclusion of iron, steel, and relevant manufactured goods produced in the United States would increase the overall cost of the project by more than 25 percent.

(3) WAIVER PUBLICATION.—If the head of a Federal department or agency makes a determination under paragraph (2) to waive the requirement under paragraph (1), the head of the Federal department or agency shall publish in the Federal Register a detailed justification for the waiver.

(4) INTERNATIONAL AGREEMENTS.—This subsection shall be applied in a manner consistent with the obligations of the United States under all applicable international agreements.

(f) WAGE RATE REQUIREMENTS.—

(1) IN GENERAL.—Notwithstanding any other provision of law, all laborers and mechanics em-

ployed by contractors and subcontractors on projects funded directly or assisted in whole or in part by the Federal Government pursuant to this section shall be paid wages at rates not less than those prevailing on projects of a similar character in the locality, as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code (commonly known as the ''Davis-Bacon Act'').

(2) AUTHORITY.—With respect to the labor standards specified in paragraph (1), the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40, United States Code.

SEC. 12702. PERSONNEL.

(a) IN GENERAL.—To carry out section 12701, the Secretary of Energy shall hire within the Department of Energy—

(1) not less than 300 full-time employees in the Office of Energy Efficiency and Renewable Energy;

(2) not less than 100 full-time employees, to be distributed among—

(A) the Office of General Counsel;

(B) the Office of Procurement Policy;

(C) the Golden Field Office;

(D) the National Energy Technology Laboratory; and

(E) the Office of the Inspector General; and

(3) not less than 20 full-time employees in the Office of Indian Energy.

(b) TIMELINE.—Not later than 60 days after the date of enactment of this Act, the Secretary shall—

(1) hire all personnel under subsection (a); or

(2) certify that the Secretary is unable to hire all personnel by the date required under this subsection.

(c) CONTRACT HIRES.—

(1) IN GENERAL.—If the Secretary makes a certification under subsection (b)(2), the Secretary may hire on a contract basis not more than 50 percent of the personnel required to be hired under subsection (a).

(2) DURATION.—An individual hired on a contract basis under paragraph (1) shall have an employment term of not more than 1 year.

(d) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary to carry

out this section $84,000,000 for each of fiscal years 2021 through 2031.

(e) REPORT.—Not later than 60 days after the date of enactment of this Act, and annually thereafter for 2 years, the Secretary shall submit a report on progress made in carrying out subsection (a) to—

(1) the Subcommittee on Energy and Water Development of the Committee on Appropriations of the Senate;

(2) the Subcommittee on Energy and Water Development and Related Agencies of the Committee on Appropriations of the House of Representatives;

(3) the Committee on Energy and Natural Resources of the Senate;

(4) the Committee on Energy and Commerce of the House of Representatives; and

(5) the Committee on Education and Labor of the House of Representatives.

Subtitle H—Zeroing Excess, Reducing Organic Waste, and Sustaining Technical Expertise

SEC. 12801. GRANT PROGRAM.

(a) IN GENERAL.—The Administrator shall establish and carry out a program to award grants, on a competitive

basis, to eligible entities for projects that are consistent with zero-waste practices.

(b) GRANT USE.—

(1) ORGANICS RECYCLING INFRASTRUCTURE.—An eligible entity receiving a grant under this subtitle may use grant funds to carry out a project relating to organics recycling infrastructure, including facilities, machinery, equipment, and other physical necessities required for organics collection or processing on a city-wide or county-wide scale, provided that—

(A) implementation of such project—

(i) results in increased capacity for residential and commercial source separated organics streams; and

(ii) generates a usable product that has demonstrable environmental benefits when compared to the input materials, such as compost with added nutritional content; and

(B) such project does not include mixed-waste composting.

(2) ELECTRONIC WASTE REUSE AND RECYCLING.—An eligible entity receiving a grant under this subtitle may use grant funds to carry out a

project relating to electronic waste reuse or recycling, including infrastructure and technology, research and development, and product refurbishment, provided that such project—

(A) does not include an electronic waste ''buy-back'' program that provides compensation for used electronics where such compensation is applied as a credit toward the purchase of additional electronics; and

(B) is carried out by an organization certified in sustainable electronic waste standards by an organization accredited by the National Accreditation Board of the American National Standards Institute & The American Society of Quality, or another accrediting body as determined appropriate by the Administrator.

(3) SOURCE REDUCTION.—An eligible entity receiving a grant under this subtitle may use grant funds to carry out a project relating to source reduction, and such project may include—

(A) educational programming and outreach activities to encourage behavioral changes in consumers that result in source reduction; and

(B) product or manufacturing redesign or redevelopment to reduce byproducts, packaging, and other outputs if—

(i) the applicable manufacturer—

(I) is domestically-owned and operated; and

(II) pays a living wage; and

(ii) the redevelopment or redesign does not result in higher toxicity of the product or byproducts, more complicated recyclability of the product or byproducts, or increased volume of byproducts compared with the original practice.

(4) MARKET DEVELOPMENT.—An eligible entity receiving a grant under this subtitle may use grant funds to carry out a project relating to market development with respect to source reduction and waste prevention, including by creating demand for sorted recyclable commodities and refurbished goods and promoting domestically-owned and operated manufacturing for projects relating to source reduction or waste prevention, provided that such project—

(A) targets easily or commonly recycled materials which are disproportionately disposed of in landfills or incinerated;

(B) addresses the reduction of the volume, weight, or toxicity of waste and waste byproducts; and

(C) does not conflict with—

(i) minimum-content laws, such as post-consumer recycled content requirements;

(ii) beverage container deposits;

(iii) programs funded through retail fees for specific products or classes of products that use such fees to collect, treat, or recycle such products; or

(iv) any applicable recycled product procurement laws and expanded sustainable government purchasing requirements, as identified by the Administrator.

SEC. 12802. GRANT AWARDS.

(a) APPLICATION.—

(1) CRITERIA FOR ALL APPLICANTS.—To be eligible to receive a grant under this subtitle, an eligible entity shall submit to the Administrator an application at such time and in such form as the Ad-

ministrator requires, demonstrating that the eligible entity—

(A) has set specific source reduction or waste prevention targets;

(B) will carry out such project in communities that are in the 80th percentile or higher for one or more pollutants as noted in the EJSCREEN tool, or any successor system, of the Environmental Protection Agency; and

(C) will carry out a project that meets the applicable project requirements under section 12701(b).

(2) ADDITIONAL APPLICATION CRITERIA FOR NONPROFIT ORGANIZATION.—In the case of an application from an eligible entity that is a nonprofit organization, the application shall include a letter of support for the proposed project—

(A) from—

(i) a local unit of government; or—

(ii) a nonprofit organization that—

(I) has a demonstrated history of undertaking work in the geographic region where the proposed project is to take place; and

(II) is not involved in the project being proposed; and

(B) containing such information as the Administrator may require.

(b) PRIORITY FACTORS.—

(1) IN GENERAL.—In awarding grants under this subtitle, the Administrator shall give priority to eligible entities that—

(A) have statutorily committed to implementing zero-waste practices;

(B) demonstrate how the project to be carried out with grant funds could lead to the creation of new jobs that pay a living wage, with preference for projects that create jobs for individuals with barriers to employment, as determined by the Administrator;

(C) will use grant funds for source reduction or waste prevention in schools;

(D) will use grant funds to employ adaptive management practices to identify, prevent, or address any negative environmental consequences of the proposed project;

(E) have a demonstrated need for additional investment in infrastructure and projects to achieve source reduction and waste preven-

tion targets set by the local unit of government that is responsible for waste and recycling projects in the geographic area;

(F) will use grant funds to develop innovative or new technologies and strategies for source reduction and waste prevention;

(G) demonstrate how receiving the grant will encourage further investment in source reduction and waste prevention projects; or

(H) will incorporate multi-stakeholder involvement, including nonprofit, commercial, and public sector partners, in carrying out a project using grant funds.

(2) ZERO-WASTE HIERARCHY.—In determining priority between multiple eligible entities who qualify for priority under paragraph (1), the Administrator shall grant first priority to an eligible entity that can demonstrate how the zero-waste hierarchy was considered with respect to the project to be carried out with grant funds.

SEC. 12803. REPORTING.

An eligible entity receiving a grant under this subtitle shall report to the Administrator, at such time and in such form as the Administrator may require, on the results of the project carried out with grant funds and any relevant

data requested by the Administrator to track the effectiveness of the program established under section 12701(a).

SEC. 12804. ANNUAL CONFERENCE.

In each of calendar years 2022 through 2027, the Administrator shall convene an annual conference for eligible entities, including eligible entities that have received a grant under this subtitle, and other stakeholders as identified by the Administrator, to provide an opportunity for such eligible entities and stakeholders to share experience and expertise in implementing zero-waste practices.

SEC. 12805. DEFINITIONS.

In this subtitle:

(1) ADAPTIVE MANAGEMENT PRACTICES.—The term ''adaptive management practices'' means, with respect to a project, the integration of project design, management, and monitoring to identify project impacts and outcomes as they arise and adjust behaviors to improve outcomes.

(2) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of the Environmental Protection Agency.

(3) DOMESTICALLY-OWNED AND OPERATED.—The term ''domestically-owned and operated'' means, with respect to a business, a business with—

(A) headquarters located within the United States; and

(B) primary operations carried out in the United States.

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

(A) a single unit of State, local, or Tribal government;

(B) a consortium of multiple units of State, local, or Tribal government;

(C) one or more units of State, local, or Tribal government in coordination with for-profit or nonprofit organizations; or

(D) one or more incorporated nonprofit organizations.

(5) EMBODIED ENERGY.—The term ''embodied energy'' means energy that was used to create a product or material.

(6) LIVING WAGE.—The term ''living wage'' means the minimum income necessary to allow a person working 40 hours per week to afford the cost of housing, food, and other material necessities.

(7) ORGANICS RECYCLING.—The term ''organics recycling'' means the biological processes

by which organics streams are converted to compost which is not harmful to humans, plants, or animals.

(8) RECYCLING.—The term ''recycling''—

(A) means the mechanical processing of material that has reached the end of its current use into material to be used in the production of new products;

(B) does not include incineration or any other energy recovery process; and

(C) does not include depolymerization or a similar process.

(9) REUSE.—The term ''reuse''—

(A) means—

(i) using a product, packaging, or resource more than once for the same or a new function with little to no processing; or

(ii) repairing a product so it can be used longer, sharing or renting it, or selling or donating it to another party; and

(B) does not include incineration.

(10) SOURCE REDUCTION.—The term ''source reduction''—

(A) includes—

(i) activities that reduce consumption of products or services that create physical outputs, such as packaging, that is secondary to the intended use of the item being consumed;

(ii) measures or techniques that reduce the amount of waste generated during production processes; and

(iii) the reduction or elimination of the use of materials which are not able to be recycled without degrading the quality of the material; and

(B) does not include incineration.

(11) SOURCE SEPARATED.—The term ''source separated''—

(A) means the separation of a stream of recyclable materials at the point of waste creation before the materials are collected and centralized; and

(B) does not include technologies that sort mixed municipal solid waste into recyclable and non-recyclable materials.

(12) WASTE PREVENTION.—The term ''waste prevention'' includes reuse, recycling, and other

methods to reduce the amount of materials disposed of in landfills or incinerated.

(13) ZERO-WASTE.—The term ''zero-waste'' means the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning or otherwise destroying embodied energy, with no discharges to land, water, or air that threaten the environment or human health.

(14) ZERO-WASTE PRACTICE.—The term ''zero-waste practice'' means a practice used to help achieve zero-waste, including source reduction and waste prevention.

SEC. 12806. AUTHORIZATION OF APPROPRIATIONS.

There is authorized to be appropriated to the Administrator to carry out this subtitle $250,000,000 for the period of fiscal years 2021 through 2028.

Subtitle I—Radon Abatement Reauthorization

SEC. 12901. TECHNICAL ASSISTANCE TO STATES FOR RADON PROGRAMS REAUTHORIZED.

Section 305(e) of the Toxic Substances Control Act (15 U.S.C. 2665(e)) is amended by striking ''1989, 1990, and 1991'' and inserting ''2021, 2022, and 2023''.

SEC. 12902. GRANT ASSISTANCE TO STATES FOR RADON PROGRAMS REAUTHORIZED.

Section 306(j) of the Toxic Substances Control Act (15 U.S.C. 2666(j)) is amended by striking ''1989, 1990, and 1991'' and inserting ''2021, 2022, and 2023''.

SEC. 12903. REGIONAL RADON TRAINING CENTERS REAUTHORIZED.

Section 308(f) of the Toxic Substances Control Act (15 U.S.C. 2668(f)) is amended by striking ''1989, 1990, and 1991'' and inserting ''2021, 2022, and 2023''.

Passed the House of Representatives September 24, 2020.

Attest: CHERYL L. JOHNSON,

Clerk.