

[DISCUSSION DRAFT]

116TH CONGRESS
2D SESSION

H. R. __

To Advance Clean Power Technology Development and Use
through Innovation and Clean Energy Standards, and for other
purposes.

IN THE HOUSE OF REPRESENTATIVES

Mr. MCKINLEY introduced the following bill; which was referred to the
Committee on _____

A BILL

To Advance Clean Power Technology Development and Use through
Innovation and Clean Energy Standards, and for other purposes.

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

SEC 101. PURPOSES

The purpose of this Act are—

(1) to further develop, demonstrate, and deploy a broad range of
advanced low- and zero-carbon power technologies, including
technologies related to the generation, storage, transmission, security,
resilience, and efficient use of electric power;

(2) to build a competitive market for advanced low- and zero-carbon
technologies and a robust workforce, supply chain, and related legal,
commercial, and physical infrastructure; and

SEC. 102. SHORT TITLE; TABLE OF CONTENTS

(a) **SHORT TITLE.**—This Act may be cited as the “[_____]”.

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

Sec. 101. Purposes.

Sec. 102. Short title; Table of contents.

Sec. 103. Definitions.

TITLE I—CARBON CAPTURE, UTILIZATION, AND STORAGE

Subtitle A—Research, Development, and Demonstration for CCUS Technologies

Sec. 111. Fossil energy objectives.

Sec. 112. Carbon capture technologies for power systems.

Sec. 113. Carbon storage validation and testing.

Sec. 114. Carbon utilization.

Sec. 115. Advanced energy systems.

Subtitle B—Initial Deployment of commercial-scale CCUS Capacity

Sec. 121. Initial deployment of commercial-scale/ CCUS Capacity.

Subtitle C—Federal Support for Commercial Deployment of CCUS

Sec. 131. Enhancement of carbon dioxide sequestration credit.

Sec. 132. Reform of loan guarantee program.

Sec. 133. Private activity bonds for carbon dioxide capture facilities.

Sec. 134. Extension of publicly traded partnership ownership structure.

Sec. 135. Production tax credit for certain electricity generation using carbon capture utilization and storage.

Subtitle D—Support for Carbon Dioxide Transportation and Sequestration Infrastructure

Sec. 141. Securing geologic reservoirs for carbon dioxide .

Sec. 142. Financial assistance for carbon dioxide sequestration infrastructure development.

Sec. 143. Geologic sequestration utilities.

Sec. 144. Coordinated permitting for carbon dioxide pipeline and sequestration facilities.

Sec. 145. Class II–B permit for carbon dioxide storage.

Sec. 146. Interagency task force on carbon dioxide pipelines.

TITLE II—INNOVATION IN RENEWABLE ENERGY, ENERGY EFFICIENCY, AND STORAGE

- Sec. 201. Establishment of technology performance and cost targets
- Sec. 202. Advanced innovation and commercialization program.
- Sec. 203. Updating mobile homes
- Sec. 204. Other authorizations of appropriations.
- Sec. 205. Tax credits.

TITLE III—NUCLEAR: EXISTING AND ADVANCED PLANTS

- Sec. 301. National Zero Emission Credit program.
- Sec. 302. Investment tax credit for nuclear energy property.
- Sec. 303. Expanding Federal clean electricity purchasing requirements.
- Sec. 304. Funding for innovation in nuclear power.
- Sec. 305. Modernizing the Nuclear Regulatory Commission.
- Sec. 306. [Reserved].
- Sec. 307. Demonstration and early deployment of advanced nuclear reactors.
- Sec. 308. Advanced nuclear fuel security program.
- Sec. 309. Loan guarantees under section 1703 of the Energy Policy Act of 2005.
- Sec. 310. Expanding the production tax credit for nuclear power.

TITLE IV—CLEAN ELECTRICITY STANDARD

- Sec. 401. Certification of cost-effective market penetration of clean electricity technologies.
- Sec. 402. Federal clean electricity standard.
- Sec. 403. Regional clean electricity planning models.
- Sec. 404. Stand-by emission performance standards.

PLACEHOLDER: TITLE V—OTHER

- Subtitle A—Reestablishment of the Office of Technology Assessment
- Subtitle B—Electrification
- Subtitle C—DOE Reform

SEC. 103. DEFINITIONS

For the purposes of this Act:

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

(2) SECRETARY.—The term “Secretary” means the Secretary of Energy.

TITLE I—CARBON CAPTURE, UTILIZATION, AND STORAGE

The purpose of this Title is to support the deployment of carbon capture, utilization, and storage technology on as much as 15 gigawatts of electricity generation facilities by 2030.

subtitle A—Research, Development, and Demonstration for CCUS Technologies

SEC. 111. FOSSIL ENERGY OBJECTIVES.

Section 961 of the Energy Policy Act of 2005 (42 U.S.C. 16291) is amended—

(1) in subsection (a), by adding at the end the following:

“(8) Improving the conversion, use, and storage of carbon dioxide produced from fossil fuels.

“(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 leakage of carbon dioxide or other fossil fuel-related emissions into the atmosphere.

“(11) Developing carbon utilization technologies, products, and methods, including carbon use and reuse for commercial applications.”;

(2) in subsection (b), by striking paragraphs (1) through (3) and inserting the following:

“(1) \$2,200,000,000 for fiscal year 2021;

“(2) \$2,200,000,000 for fiscal year 2022;

“(3) \$2,200,000,000 for fiscal year 2022;

“(4) \$2,200,000,000 for fiscal year 2024; and

“(5) \$2,200,000,000 for fiscal year 2025; and

(3) by striking subsections (c) through (e) and inserting the following:

“(c) LIMITATION.—None of the funds authorized under this section may be used for Fossil Energy Environmental Restoration or Import/Export Authorization.”.

SEC. 112. CARBON CAPTURE TECHNOLOGIES FOR POWER SYSTEMS.

(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 FOR POWER SYSTEMS.

“(a) IN GENERAL.—The Secretary shall conduct a program of research, development, demonstration, and commercial application of carbon capture technologies, including to facilitate the development and use of—

“(1) carbon capture technologies for coal and natural gas;

“(2) innovations to improve the efficiency of, and decrease emissions at, existing power plants; and

“(3) advanced separation technologies.

“(b) PRIORITIZATION.—The Secretary shall maintain robust investments in carbon capture technologies for coal applications.

“(c) LARGE-SCALE PILOTS.—

“(1) SUPPORT FOR LARGE-SCALE PILOT PROJECTS.—In supporting technology development activities under this section, the Secretary is encouraged to support large-scale pilot projects that test carbon capture technologies on powers systems, consistent with section 988(b).

“(2) DEFINITION.—For purposes of this section, the term ‘large-scale pilot project’ means a pilot project that—

“(A) represents the scale of technology development beyond laboratory development and bench scale testing, but not yet advanced to the point of being tested under operational conditions at commercial scale;

“(B) represents 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 that technology at commercial scale or in commercial-scale demonstration; and

“(C) is large enough—

“(i) to validate scaling factors; and

“(ii) to demonstrate the interaction between major components so that control philosophies for a new process can be developed and enable the technology to advance from large-scale pilot plant application to commercial-scale demonstration or application.

“(d) COST AND PERFORMANCE GOALS.—In carrying out the development, demonstration, and commercial application activities under subsection (a), the Secretary shall consider cost and performance goals to assist in the transfer of carbon capture research to commercially viable technologies.

“(e) CARBON CAPTURE PILOT TEST CENTERS.—

“(1) IN GENERAL.—Not later than 1 year after the date of the enactment of this Act, the Secretary shall award grants to one or more eligible entities for the operation of not less than three Carbon Capture Test Centers (in this subsection, referred to as the ‘Centers’) to provide unique testing capabilities for innovative power system technologies to capture carbon dioxide or otherwise produce a carbon dioxide stream suitable for utilization or storage.

“(2) PURPOSE.—The Centers shall—

“(A) advance research, development, demonstration, and commercial application of carbon capture technologies for power 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) CRITERIA.—In selecting applications to operate the Centers under this subsection, the Secretary shall prioritize applicants that meet one or more of the following criteria:

“(A) Applicants with access to existing or planned research facilities with modular technology capabilities.

“(B) Institutions of higher education with established expertise in engineering and design for carbon capture technologies, or partnerships with such institutions.

“(C) Applicants with access to existing research and test facilities for pre-combustion, post-combustion, or oxy-combustion technologies.

“(D) Applicants with test capabilities to address scaling challenges of integrating carbon capture technologies with utility scale power plants.

“(E) Involvement of commercial market participants, including equipment and technology suppliers and power generators.

“(5) CONSIDERATIONS.—In awarding funds 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 established using such funds 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) COST SHARING.—The Secretary shall require cost sharing under this subsection in accordance with section 988.

“(8) 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) DEMONSTRATION PROJECTS.—

“(1) IN GENERAL.—The Secretary may fund commercial-scale demonstration projects for power systems that test the scale of technology necessary for commercial operation, 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 system.

“(6) COST SHARING.—The Secretary shall require cost sharing under this subsection in accordance with section 988.

“(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.—For activities under this section, there are authorized to be appropriated to the Secretary—

“(1) \$600,000,000 for fiscal year 2021;

“(2) \$600,000,000 for fiscal year 2022;

“(3) \$600,000,000 for fiscal year 2023;

“(4) \$600,000,000 for fiscal year 2024; and

“(5) \$600,000,000 for fiscal year 2025.

(b) GAO STUDY.—

(1) IN GENERAL.—The Comptroller General of the United States shall conduct a study of the Department’s successes, failures, practices, and improvements in carrying out demonstration projects for carbon capture technologies for power systems. In conducting the study, the Comptroller General shall consider, at a minimum—

(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) REPORT.—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 the study required under paragraph (1).

(3) CONSIDERATION.—The Secretary shall consider any relevant recommendations, as determined by the Secretary, provided in the study required under paragraph (1), and shall adopt such recommendations as the Secretary considers appropriate.

(4) 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. 113. 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 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; and

“(7) 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, 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) deep saline formations;

“(7) deep 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) deep 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 Act, 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 to integrate geologic sequestration sites and carbon utilization with large sources of carbon dioxide in the United States economy.

“(5) LARGE-SCALE CARBON SEQUESTRATION.—For purposes of this subsection, ‘large-scale carbon sequestration’ means the injection of more than 1,000,000 tons of carbon dioxide annually or 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 purposes of transitioning the large-scale storage demonstrations 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 deems 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) FEDERAL DATA COLLECTION.—The Secretary, in coordination with other Federal agencies including the United States Geological Survey, shall continue and expand ongoing Federal data collection and analysis activities related to carbon dioxide storage, economics, and spatial relationships on a local and regional scale, in coordination with State and regional entities.

“(g) AUTHORIZATION OF APPROPRIATIONS.—For activities under this section, there are authorized to be appropriated to the Secretary—

“(1) \$250,000,000 for fiscal year 2021;

“(2) \$250,000,000 for fiscal year 2022;

“(3) \$250,000,000 for fiscal year 2023;

“(4) \$250,000,000 for fiscal year 2024; and

“(5) \$250,000,000 for fiscal year 2025.

SEC. 114. CARBON UTILIZATION.

(a) PROGRAM.—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. 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 emissions, and other environmental safety indicators of new technologies, practices, processes, or methods, used in enhanced hydrocarbon recovery;

“(2) identify and evaluate novel uses for carbon, including the conversion of carbon dioxide for commercial and industrial products, such as—

“(A) chemicals;

“(B) plastics;

“(C) building materials;

“(D) fuels;

“(E) cement; or

“(F) products of coal utilization in power systems (as such term is defined in section 962(e)), or other applications; and

“(3) identify and develop alternative uses for coal, including products derived from carbon engineering, carbon fiber, and coal conversion methods.

“(b) AUTHORIZATION OF APPROPRIATIONS.—For activities under this section, there are authorized to be appropriated to the Secretary—

“(1) \$75,000,000 for fiscal year 2021;

“(2) \$75,000,000 for fiscal year 2022;

“(3) \$75,000,000 for fiscal year 2023;

“(4) \$75,000,000 for fiscal year 2024; and

“(5) \$75,000,000 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 commercializing carbon dioxide in the United States. Such study shall—

(1) analyze the technical feasibility and related challenges to commercializing carbon dioxide, including—

(A) creating a national system of carbon dioxide pipelines;

(B) mitigating environmental 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 impact of a well-integrated national carbon dioxide pipeline 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;

(6) identify emerging technologies and approaches for carbon utilization that show promise for scale-up, demonstration, deployment, and commercialization;

(7) analyze the factors associated with making carbon utilization technologies 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 basic, applied, 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.

SEC. 115. ADVANCED ENERGY SYSTEMS.

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. 969A. ADVANCED ENERGY SYSTEMS.

“(a) IN GENERAL.—The Secretary shall conduct a program of research, development, demonstration, and commercial application of technologies that represent a significant change in the methods used to generate electricity from fuels and that will enable a step change in performance, efficiency, and cost of electricity, and that reduce emissions, from fossil fuel power generation in the following areas:

“(1) High-efficiency turbines for any advanced power system that will lead to natural gas turbine combined cycle efficiency of 67 percent or combustion turbine efficiency of 50 percent.

“(2) Supercritical 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) Gasification systems to enable carbon capture, improve efficiency, and reduce capital and operating costs.

“(5) Thermal cycling with ramping or rapid black start capabilities that do not compromise efficiency or environmental performance.

“(6) Small-scale and modular technologies with reduced carbon outputs or carbon capture that can support incremental power generation capacity needs.

“(b) PRIORITY.—In carrying out the program under subsection (a), the Secretary is encouraged to prioritize transformational technologies that enable a step change in performance, efficiency, or cost of electricity as compared to the technology in existence on the date of enactment of this section.

“(c) AUTHORIZATION OF APPROPRIATIONS.—For activities under this section, there are authorized to be appropriated to the Secretary—

“(1) \$1,275,000,000 for fiscal year 2021;

“(2) \$1,275,000,000 for fiscal year 2022;

“(3) \$1,275,000,000 for fiscal year 2023;

“(4) \$1,275,000,000 for fiscal year 2024; and

“(5) \$1,275,000,000 for fiscal year 2025.

subtitle B—Initial Deployment of Commercial-scale CCUS Capacity

SEC. 121. INITIAL DEPLOYMENT OF COMMERCIAL-SCALE CCUS
CAPACITY.

(a) IN GENERAL.—Subtitle B of title IV of the Energy Policy Act of 2005 (42 U.S.C. 15971 et seq.) is amended by adding at the end the following:

“SEC. 418. FEDERAL DEPLOYMENT SUPPORT FOR CCUS

“(a) GENERAL.—The Secretary shall support initial commercial-scale deployment of eligible power facilities as defined in subsection (f), by—

“(1) executing power purchase agreements with a term of not more than 30 years for the purchase of electricity output from an eligible power facility;

“(2) executing contracts for differences with a term of not more than 30 years to provide price certainty for the sale of the electricity output, or carbon dioxide output, of an eligible power facility to third parties; or

“(3) taking partial or full Federal ownership of an eligible power facility.

“(b) LIMITATIONS.—

“(1) IN GENERAL.—The Secretary may not—

“(A) support more than a total of three gigawatts of eligible power facilities, or

“(B) provide more than \$10,000,000,000 in total support for such power facility deployment under this section, except as provided in paragraph (2).

“(2) FURTHER SUPPORT.—Based on the information provided by the study conducted under subsection (c), if the Secretary determines that additional support for commercial-scale deployment of eligible power facilities is needed to achieve the goals of this legislation, the Secretary may provide support under subsection (a) for up to an additional eight gigawatts of eligible power facilities equipped with carbon capture technology.

“(c) STUDY.—After the Secretary has provided support for up to three gigawatts of eligible power facilities equipped with carbon capture technology under subsection (a), but in no case later than 7 years from enactment, the Secretary shall conduct a study to evaluate whether the support provided under this section, coupled with other Federal programs and policies and commercial technology deployments, provide an adequate basis to stimulate and support robust commercial-scale deployment of eligible power systems.

“(d) APPLICATION.—

“(1) IN GENERAL.—An entity seeking a power purchase agreement or a contract for differences under subsection (a) shall submit to the Secretary an application at such time and in such manner as the Secretary may require.

“(2) CRITERIA.—In evaluating such an application, the Secretary shall evaluate such technical, financial, and other factors the Secretary may determine appropriate.

“(e) CONSIDERATIONS.—In implementing this section, the Secretary shall seek to support carbon capture, utilization, and storage capacity that covers diverse fuels and technologies, including first-of-its-kind carbon capture, utilization, and storage capacity.

“(f) DEFINITIONS.—In this section—

“(1) POWER FACILITY.—The term ‘power system’ means an electricity generating unit that utilizes fossil fuels to generate electricity that is provided to the electric grid or directly to a consumer.

“(2) ELIGIBLE POWER FACILITY.—The term ‘eligible power system’ means a power system that—

“(A) is equipped with carbon capture technology, or that otherwise produces a separate carbon dioxide stream suitable for utilization or storage;

“(B) is designed to separate or capture carbon dioxide that would otherwise be emitted by the power system; and

“(C) will utilize or store the carbon dioxide stream, or has contracted with another entity, to utilize or store the captured carbon dioxide.

“(g) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated such sums as are necessary to carry out this section.

(b) TABLE OF CONTENTS AMENDMENT.—The table of contents for the Energy Policy Act of 2005 is amended by adding after the item relating to section 417 the following:

“Sec. 418. Federal support for CCUS.”.

subtitle C—Federal Support for Commercial Deployment of CCUS

SEC. 131. ENHANCEMENT OF CARBON DIOXIDE SEQUESTRATION CREDIT.

Section 45Q of the Internal Revenue Code of 1986, as amended, is amended as follows:

(a) In subsection (a)(3)(A), strike “12-year” and substitute “20-year”.

(b) In subsection (a)(4)(A), strike “12-year” and substitute “20-year”.

(c) In subsection (d)(1), strike “2024” and substitute “2033”.

SEC. 132. REFORM OF LOAN GUARANTEE PROGRAM.

Section 1703 of the Energy Policy Act of 2005, as amended (42 U.S.C. 16513) by section 16513 of title 42, United States Code, is amended as follows:

(1) Subsection (e) is amended as follows: by striking subsection (e) and inserting the following:

“(e) QUALIFICATION OF FACILITIES RECEIVING TAX CREDITS OR FINANCIAL ASSISTANCE.—Notwithstanding any other provision of law, a project

that receives tax credits or other financial assistance for clean coal technology shall not be disqualified from receiving a guarantee under this subchapter.

and

(2) by inserting the following new subsection after subsection (e)

“(f) IMPLEMENTATION.—In implementing the authority under this subchapter, the Secretary shall—

“(1) adjust fees and application requirements to the scale of an applicant’s project to ensure that the costs of preparing and submitting an application are not an undue barrier to participation by smaller, lower risk projects; and

“(2) ensure that program credit rating requirements do not, as applied, act as an obstacle to participation in the loan guarantee program by first-of-a-kind projects, consistent with the purpose of the loan guarantee program to enable debt financing for first-of-a-kind projects that would not otherwise have access to commercial debt markets.”.

SEC. 133. PRIVATE ACTIVITY BONDS FOR CARBON DIOXIDE CAPTURE FACILITIES.

(a) IN GENERAL.—Section 142 of the Internal Revenue Code of 1986 is amended—

(1) in subsection (a)—

(A) in paragraph (14), by striking “or” at the end;

(B) in paragraph (15), by striking the period at the end and inserting “, or”; and

(C) by adding at the end the following new paragraph:

“(16) qualified carbon dioxide capture facilities.”; and

(2) by adding at the end the following new subsection:

“(n) QUALIFIED CARBON DIOXIDE CAPTURE FACILITY.—

“(1) IN GENERAL.—For purposes of subsection (a)(16), the term ‘qualified carbon dioxide capture facility’ means the eligible components of an industrial carbon dioxide facility.

“(2) DEFINITIONS.—In this subsection:

“(A) ELIGIBLE COMPONENT.—The term ‘eligible component’ means any equipment installed in an industrial carbon dioxide facility that satisfies the requirements under paragraph (3) and is—

“(i) used for the purpose of capture, treatment and purification, compression, transportation, or on-site storage of carbon dioxide produced by the industrial carbon dioxide facility, or

“(ii) integral or functionally related and subordinate to a process described in section 48B(c)(2), determined by substituting ‘carbon dioxide’ for ‘carbon monoxide’ in such section.

“(B) INDUSTRIAL CARBON DIOXIDE FACILITY.—

“(i) IN GENERAL.—Except as provided in clause (ii), the term ‘industrial carbon dioxide facility’ means a facility that emits carbon dioxide (including from any fugitive emissions source) that is created as a result of any of the following processes:

“(I) Fuel combustion for electricity generation or other purposes.

“(II) Gasification for electricity generation or other purposes.

“(III) Bioindustrial.

“(IV) Fermentation.

“(V) Any manufacturing industry described in section 48B(c)(7).

“(ii) EXCEPTIONS.—For purposes of clause (i), an industrial carbon dioxide facility shall not include—

“(I) any geological gas facility (as defined in clause (iii)), or

“(II) any air separation unit that—

“(aa) does not qualify as gasification equipment, or

“(bb) is not a necessary component of an oxy-fuel combustion process, a supercritical carbon dioxide process, or other advanced power system.

“(iii) GEOLOGICAL GAS FACILITY.—The term ‘geological gas facility’ means a facility that—

“(I) produces a raw product consisting of gas or mixed gas and liquid from a geological formation,

“(II) transports or removes impurities from such product, or

“(III) separates such product into its constituent parts.

“(3) CAPTURE AND STORAGE REQUIREMENT.—

“(A) IN GENERAL.—Subject to subparagraph (B), the eligible components of an industrial carbon dioxide facility shall have a capture and storage percentage (as determined under subparagraph (C)) that is equal to or greater than 65 percent.

“(B) EXCEPTION.—In the case of an industrial carbon dioxide facility with a capture and storage percentage that is less than 65 percent, the percentage of the cost of the eligible components installed in such facility that may be financed with tax-exempt bonds may not be greater than the capture and storage percentage.

“(C) CAPTURE AND STORAGE PERCENTAGE.—

“(i) IN GENERAL.—Subject to clause (ii), the capture and storage percentage shall be an amount, expressed as a percentage, equal to the quotient of—

“(I) the total metric tons of carbon dioxide annually captured, transported, and injected into—

“(aa) a facility for geologic storage, or

“(bb) an enhanced oil or gas recovery well followed by geologic storage, divided by

“(II) the total metric tons of carbon dioxide which would otherwise be released into the atmosphere each year as industrial emission of greenhouse gas if the eligible components were not installed in the industrial carbon dioxide facility.

“(ii) LIMITED APPLICATION OF ELIGIBLE COMPONENTS.—In the case of eligible components that are designed to capture carbon dioxide solely from specific sources of emissions or portions thereof within an industrial carbon dioxide facility, the capture and storage percentage under this subparagraph shall be determined based only on such specific sources of emissions or portions thereof.”.

(b) VOLUME CAP.—Section 146(g)(4) of such Code is amended by striking “paragraph (11) of section 142(a) (relating to high-speed intercity rail facilities)” and inserting “paragraph (11) or (16) of section 142(a)”.

(c) CLARIFICATION OF PRIVATE BUSINESS USE.—Section 141(b)(6) of such Code is amended by adding at the end the following new subparagraph:

“(C) CLARIFICATION RELATING TO QUALIFIED CARBON DIOXIDE CAPTURE FACILITIES.—For purposes of this subsection, the sale of carbon dioxide produced by a qualified carbon dioxide capture facility (as defined in section 142(n)) which is owned by a governmental unit shall not constitute private business use.”.

(d) EFFECTIVE DATE.—The amendments made by this section shall apply to obligations issued after [REDACTED].

SEC. 134. EXTENSION OF PUBLICLY TRADED PARTNERSHIP OWNERSHIP STRUCTURE.

(a) IN GENERAL.—Subparagraph (E) of section 7704(d)(1) of the Internal Revenue Code of 1986 is amended—

(1) by striking “income and gains derived from the exploration” and inserting “income and gains derived from the following:

“(i) MINERALS, NATURAL RESOURCES, ETC.—The exploration”;

(2) by inserting “or” before “industrial source”;

(3) by inserting a period after “carbon dioxide”; and

(4) by striking “, or the transportation or storage” and all that follows and inserting the following:

“(ii) FUEL DERIVED FROM CAPTURED CARBON DIOXIDE.—The production, storage, or transportation of any fuel which—

“(I) uses carbon dioxide captured from an anthropogenic source or the atmosphere as its primary feedstock, and

“(II) is determined by the Secretary, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency, to achieve a reduction of not less than a 60 percent in lifecycle greenhouse gas emissions (as defined in section 211(o)(1)(H) of the Clean Air Act) compared to baseline lifecycle greenhouse gas emissions (as defined in section 211(o)(1)(C) of such Act).

This clause shall not apply to any fuel which uses as its primary feedstock carbon dioxide which is deliberately released from naturally-occurring subsurface springs.

“(iii) GASIFICATION WITH SEQUESTRATION.—The production of any product or the generation of electric power from a project—

“(I) which meets the requirements of subparagraphs (A) and (B) of section 48B(c)(1), and

“(II) not less than 75 percent of the total carbon dioxide emissions of which is qualified carbon dioxide (as defined in section 45Q(c)) which is disposed of or utilized as provided in paragraph (7).

“(iv) CARBON CAPTURE AND SEQUESTRATION.—

“(I) POWER GENERATION FACILITIES.—The generation or storage of electric power (including associated income from the sale or marketing of energy, capacity, resource adequacy, and ancillary services) produced from any power generation facility which is, or from any power generation unit within, a qualified facility which is described in section 45Q(d) and not less than 50 percent (30 percent in the case of a facility or unit placed in service before January 1, 2017) of the total carbon dioxide emissions of which is qualified carbon dioxide which is disposed of or utilized as provided in paragraph (7).

“(II) OTHER FACILITIES.—The sale of any good or service from any facility (other than a power generation facility) which is a qualified facility described in section 45Q(c) and the captured qualified carbon dioxide (as so defined) of which is disposed of as provided in paragraph (7).”.

(b) DISPOSAL AND UTILIZATION OF CAPTURED CARBON DIOXIDE.—
Section 7704(d) of such Code, as amended by subsection (b), is further amended by adding at the end the following new paragraph:

“(7) DISPOSAL AND UTILIZATION OF CAPTURED CARBON DIOXIDE.—For purposes of clauses (xii)(III) and (xiii)(I) of paragraph (1)(E), carbon dioxide is disposed of or utilized as provided in this paragraph if such carbon dioxide is—

“(A) placed into secure geological storage (as determined under section 45Q(f)(2)),

“(B) used as a tertiary injectant (as defined in section 45Q(e)(3)) in a qualified enhanced oil or natural gas recovery project (as defined in section 45Q(e)(2)) and placed into secure geological storage (as so determined),

“(C) fixated through photosynthesis or chemosynthesis (such as through the growing of algae or bacteria),

“(D) chemically converted to a material or chemical compound in which it is securely stored, or

“(E) used for any other purpose which the Secretary determines has the potential to strengthen or significantly develop a competitive market for carbon dioxide captured from man-made sources.”.

(c) EFFECTIVE DATE.—The amendments made by this section shall take effect on the date of the enactment of this Act, in taxable years ending after such date.

SEC. 135. PRODUCTION TAX CREDIT FOR CERTAIN ELECTRICITY GENERATION USING CARBON CAPTURE UTILIZATION AND STORAGE.

(a) After section 45T of the Internal Revenue Code of 1986, as amended, insert the following—

“45U. ELECTRICITY PRODUCED USING CARBON CAPTURE UTILIZATION AND STORAGE TECHNOLOGY

“(a) GENERAL RULE.--For purposes of section 38, the carbon capture production credit for any taxable year is an amount equal to—

“(1) for qualified facilities using fossil fuels, the product of

“(A) the megawatt hours of electricity —

“(i) produced by the taxpayer at a qualified facility during the 20-year period beginning on the date the facility was originally placed in service, and

“(ii) sold by the taxpayer to an unrelated person during the taxable year, multiplied by

“(B) for a qualified facility storing carbon –

“(i) in saline storage, \$30 per megawatt hour, or

“(ii) in enhanced oil recovery storage, \$24 per megawatt hour, multiplied by

“(C) the discount factor.

“(2) for electricity generation facilities using exclusively qualified hydrogen, qualified ammonia, or qualified blends, the product of

“(A) the megawatt hours of electricity —

“(i) produced by the taxpayer at a qualified facility during the 20-year period beginning on the date the facility was originally placed in service, and

“(ii) sold by the taxpayer to an unrelated person during the taxable year, multiplied by

“(B) \$50 per megawatt hour.

“(b) DEFINITIONS.--For purposes of this section-

“(1) “discount factor” means 90 divided by the annual carbon dioxide emissions rate expressed in pounds per megawatt-hour for a qualified facility, except that –

“(A) If the annual carbon dioxide emissions rate for a qualified facility is less than 90 pounds per megawatt-hour, the discount factor is equal to 1, and

“(B) if the annual carbon dioxide emissions rate for a qualified facility is greater 180 pounds per megawatt-hour, the discount factor is equal to 0.

“(2) “qualified ammonia” means ammonia fuel produced with less than 17.5 pounds of carbon dioxide emissions per million Btu of gross fuel heating value.

“(3) “qualified blend” means a blend of qualified hydrogen or qualified ammonia with fossil fuel in which the fossil fuel provides no more than 30 percent of the heating value input.

“(4) “qualified facility” means an electricity generation plant that-

“(A) is equipped with carbon capture equipment, the construction of which commenced before January 1, 2033,

“(B) captures carbon oxide using carbon capture equipment,

“(C) stores captured carbon oxide in secure geological storage or uses captured carbon oxide as a tertiary injectant in a qualified enhanced oil or natural gas recovery project, and

“(D) has not been the basis for a credit received under section 45Q of the Internal Revenue Code.

“(5) “qualified hydrogen” means hydrogen fuel produced with less than 17.5 pounds of carbon dioxide emissions per million Btu of gross fuel heating value.

(b) Section 38 of the Internal Revenue Code is amended as follows:

(1) In paragraph (b)(32), strike “plus”;

(2) In paragraph (b)(33), replace the period with “, plus”; and

(3) Insert after paragraph (b)(33) the following: “(34) the carbon capture production credit under section 45U(a).”

(c) Subchapter B of chapter 65 of the Internal Revenue Code is amended by adding at the end the following new section:

**“SEC. 6431. ELECTIVE PAYMENT FOR ELECTRICITY
PRODUCED WITH CARBON OXIDE SEQUESTRATION.**

“(a) ELECTION.—In the case of a taxpayer making an election (at such time and in such manner as the Secretary may provide) under this section with respect to any portion of an applicable credit, such taxpayer shall be treated as making a payment against the tax imposed by subtitle A for the taxable year equal to—

“(1) in the case of an Indian tribal government, the amount of such portion, and

“(2) in the case of any other taxpayer, 85 percent of such amount.

“(b) DEFINITIONS AND SPECIAL RULES.—For purposes of this section—

**“(1) GOVERNMENTAL ENTITIES TREATED AS
TAXPAYERS.**—In the case of an election under this section—

“(A) any State or local government, or a political subdivision thereof, or

“(B) an Indian tribal government

shall be treated as a taxpayer for purposes of this section and determining any applicable credit.

“(2) APPLICABLE CREDIT.—The term ‘applicable credit’ means the carbon capture production credit under section 45U that would (without regard to this section) be determined with respect to the taxpayer.

“(3) INDIAN TRIBAL GOVERNMENT.—The term ‘Indian tribal government’ shall have the meaning given such term by section 139E.

“(4) TIMING.—The payment described in subsection (a) shall be treated as made on—

“(A) in the case of any government, or political subdivision, to which paragraph (1) applies and for which no return is required under section 6011 or

6033(a), the later of the date that a return would be due under section 6033(a) if such government or subdivision were described in that section or the date on which such government or subdivision submits a claim for credit or refund (at such time and in such manner as the Secretary shall provide), and

“(B) in any other case, the later of the due date of the return of tax for the taxable year or the date on which such return is filed.

“(5) WAIVER OF SPECIAL RULES.—In the case of an election under this section, the determination of any applicable credit shall be without regard to paragraphs (3) and (4)(A)(i) of section 50(b).

“(c) EXCLUSION FROM GROSS INCOME.—Gross income of the taxpayer shall be determined without regard to this section.

“(d) DENIAL OF DOUBLE BENEFIT.—Solely for purposes of section 38, in the case of a taxpayer making an election under this section, the carbon capture production credit determined under section 45U shall be reduced by the amount of the portion of such credit with respect to which the taxpayer makes such election.”.

(d) CLERICAL AMENDMENT.—The table of sections for subchapter B of chapter 65 is amended by adding at the end the following new item:

“Sec. 6431. Elective payment for electricity produced from carbon oxide sequestration”.

subtitle D—Support for Carbon Dioxide Transportation and Sequestration Infrastructure

SEC. 141. SECURING GEOLOGIC RESERVOIRS FOR CARBON DIOXIDE.

(a) IN GENERAL.—Subtitle B of title IV of the Energy Policy Act of 2005 (42 U.S.C. 15971 et seq.) is further amended by inserting after section 419 the following new section:

“SEC. [420]. SECURING GEOLOGIC RESERVOIRS FOR STORAGE OF CARBON DIOXIDE.

“(a) IN GENERAL.—The Secretary shall establish a program to—

“(1) identify geological resources for carbon dioxide sequestration that are capable of securely storing, cumulatively, at least 100,000,000 tons of carbon dioxide at a cost of less than \$10 per ton; and

“(2) support the development of storage facilities in such geological resources by providing grants, or other appropriate financial assistance, to an entity to—

“(A) secure property rights that are necessary to enable carbon dioxide storage in such geologic formations; and

“(B) obtain necessary permits and approval to enable carbon dioxide storage in such geologic formations.

“(b) GEOGRAPHIC DIVERSITY.—The Secretary shall conduct the program established under subsection (a) with the goal of identifying and supporting the development of a carbon dioxide sequestration facility that is capable of securely storing at least 100,000,000 tons of carbon dioxide at a cost of less than \$10 per ton in each of the regions in the Regional Carbon Sequestration Partnership Program.

“(c) APPLICATION.—An entity seeking a grant or other appropriate financial assistance under this section shall submit to the Secretary an application at such time and in such manner as the Secretary may require.

“(d) COST SHARING.—The Secretary shall require cost sharing under this section in accordance with section 988(b)

“(e) AUTHORIZATION OF APPROPRIATIONS.—For activities under this section, there are authorized to be appropriated to the Secretary such sums as are necessary for activities under this section.

(b) TABLE OF CONTENTS AMENDMENT.—The table of contents for the Energy Policy Act of 2005 is further amended by adding after the item relating to section [418/19] the following:

“Sec. [419/20]. Securing geologic reservoirs for carbon dioxide.”.

SEC. 142. FINANCIAL ASSISTANCE FOR CARBON DIOXIDE
SEQUESTRATION INFRASTRUCTURE DEVELOPMENT.

(a) IN GENERAL.—Subtitle B of title IV of the Energy Policy Act of 2005 (42 U.S.C. 15971 et seq.) is further amended by inserting after section [420/419] the following new section:

“SEC. [421/420]. CARBON DIOXIDE SEQUESTRATION INFRASTRUCTURE
DEVELOPMENT.

“(a) IN GENERAL.—The Secretary shall establish a program to provide grants to support—

“(1) the development of carbon dioxide pipeline infrastructure that is necessary to transport captured anthropogenic carbon dioxide to appropriate sites for long term sequestration, giving priority to projects of significant length and significant throughput capacity; and

“(2) the development of geologic sequestration facilities that are necessary to support long-term sequestration of the anticipated volumes of captured carbon dioxide

“(b) APPLICATION.—An entity seeking a grant under the program established under subsection (a) shall submit to the Secretary an application at such time and in such manner as the Secretary may require.

“(c) COST SHARING.—The Secretary shall require cost sharing under this section in accordance with section 988(b).

“(d) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary to carry out this section \$10,000,000,000 cumulative over the life of the program.

(b) TABLE OF CONTENTS AMENDMENT.—The table of contents for the Energy Policy Act of 2005 is further amended by adding at after the item relating to section [419/20] the following:

“Sec. [420/21]. Securing geologic reservoirs for carbon dioxide.”.

SEC. 143. GEOLOGIC SEQUESTRATION UTILITIES.

(a) IN GENERAL.—The Secretary shall provide technical assistance to States that are establishing carbon dioxide sequestration utilities that are either publicly owned or privately owned and publicly regulated—

(1) to establish or foster the formation of such utilities; and

(2) to establish appropriate State regulatory oversight of such utilities

(b) TECHNICAL ASSISTANCE.—Technical assistance provided under subsection (a) may include—

(1) conducting engineering studies to support facility development by a developer or regulatory oversight by a state or federal regulator

(2) identifying carbon dioxide pipeline routes;

(3) facilitating interim measures for the transportation of carbon dioxide; and

(4) coordinating carbon dioxide sequestration facility planning and permitting activities.

(c) REPORT.—Not later than 1 year of the date of enactment of this section, the Secretary shall submit to Congress a report that—

(1) characterizes Federal, State, and local regulations that apply to carbon dioxide pipeline and sequestration facility development and operation;

(2) identifies any gaps in applicable regulations or standards that need to be addressed to ensure that carbon dioxide pipeline and sequestration facilities are operated in a safe and effective manner;

(3) evaluates whether regulation of the rates or terms of service for carbon dioxide transportation services or geologic sequestration services are necessary to ensure fair access to such services;

(4) evaluates whether eminent domain authorities are necessary to enable development of carbon dioxide infrastructure in the public interest; and

(5) provides recommendations on changes to laws, regulation or practices that would support the development and use of carbon dioxide pipeline and geologic sequestration facilities in the public interest.

(d) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary such sums as are necessary to carry out this section.

SEC. 144. COORDINATED PERMITTING FOR CARBON DIOXIDE PIPELINE AND SEQUESTRATION FACILITIES.

Section 41001(6)(A) of the FAST Act (42 U.S.C. 4370m note(6)(A)) is amended by striking “pipelines” and inserting “pipelines (including pipelines for the transportation of carbon dioxide), facilities for the geologic sequestration of carbon dioxide,”.

SEC. 145. CLASS II–B PERMIT FOR CARBON DIOXIDE STORAGE.

(a) RULEMAKING.—The Administrator of the Environmental Protection Agency shall by regulation establish a Class II–B carbon dioxide storage permitting program under the Safe Drinking Water Act (42 U.S.C. 300f et seq.) to enable an entity holding a Class II permit for incidental storage of carbon dioxide during enhanced oil recovery to convert that permit so as to allow injection of carbon dioxide in oil fields primarily as a means of carbon dioxide sequestration. Any such Class II–B permit program shall employ a performance-based approach.

(b) DEADLINES.—

(1) NOTICE OF PROPOSED RULEMAKING.—With respect to the rulemaking required under subsection (a), the Administrator of the

Environmental Protection Agency shall issue a notice of proposed rulemaking not later than 12 months after the date of enactment of this Act.

(2) FINAL RULE.—With respect to the rulemaking required under subsection (a), the Administrator of the Environmental Protection Agency shall issue the final rule not later than 24 months after the date of enactment of this Act.

SEC. 146. INTERAGENCY TASK FORCE ON CARBON DIOXIDE PIPELINES.

(a) IN GENERAL.—Not later than 90 days after the date of enactment of this section, the Secretary shall convene an interagency task force to assess the potential for a national system of carbon dioxide pipelines.

(b) MEMBERSHIP.—The task force convened under subsection (a) shall include representation from each of the following

- (1) The Department of Energy.
- (2) The Department of the Interior.
- (3) The Environmental Protection Agency.
- (4) The Department of Transportation.
- (5) The Federal Energy Regulatory Commission.
- (6) Other Federal agencies identified by the Secretary.
- (7) State, local, and Tribal governments.

(c) DUTIES.—The task force convened under subsection (a) shall—

(1) conduct annual workshops with relevant Federal agencies to discuss the potential of, and progress towards, an accessible and functioning national system of carbon dioxide pipelines, open to representatives from—

(A) industries engaged in carbon capture, transportation, utilization and storage ;

(B) State, local, and Tribal governments;

(C) academia;

(D) environmental organizations; and

(E) other stakeholders as identified by the Secretary;

(2) provide public notice not less than 60 days before the date on which each workshop required under paragraph (1) is conducted;

(3) 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 annual report that summarizes the activities and progress of the task force; and

(4) for the final such annual report, lay out a roadmap for the successful establishment of a national carbon dioxide pipeline system, including aspects related to—

(A) engineering, building, siting, and maintenance of a national carbon dioxide pipeline system;

(B) permitting and insuring such? pipelines;

(C) Federal and State policy challenges;

(D) incentives or resources that could encourage the utilization of the most advanced leak detection and mitigation technologies and monitoring capabilities;

(E) regulating a national carbon dioxide pipeline system to ensure safety and minimal environmental impacts; and

(F) possible integrations into the current pipeline system.

(d) SUNSET.—This section shall cease to be effective on the date that is 5 years after the date on which the task force first convenes.

TITLE II—INNOVATION IN RENEWABLE ENERGY, ENERGY EFFICIENCY, AND ENERGY STORAGE

SEC. 201. ESTABLISHMENT OF TECHNOLOGY PERFORMANCE AND COST TARGETS.

(a) **IN GENERAL.**—Not later than one year after the date of enactment of this section, the Secretary of Energy shall identify technology gaps and establish technology performance and cost targets to address such gaps for each 5-year period, with the first such period starting on the date of enactment of this section and the last such period ending on the date that is 15 years following enactment, for each of the following technology categories:

(1) Renewable power technologies, including power generation technologies such as on-shore or off-shore wind power, thermal or photovoltaic solar power, hydropower, geothermal power, and biomass power;

(2) Electrochemical, mechanical, chemical, and thermal energy storage technologies;

(3) Electricity transmission technologies;

(4) Technologies that improve the energy efficiency of building equipment, the building envelope, building controls and that improve information sharing between the building and the grid, which technologies may include energy efficiency, demand response and electrification technologies in residential, commercial and industrial buildings; and

(5) Industrial process technologies, including such technologies relating to energy efficiency and electrification.

SEC. 202. ADVANCED INNOVATION AND COMMERCIALIZATION PROGRAM.

(a) **IN GENERAL.**—The Secretary shall, in collaboration with the National Laboratories, other Federal agencies, and private sector and university partners as the Secretary determines necessary, establish a program, to be known as the “Advanced Innovation and Commercialization Program,” to carry out research,

development, and demonstration of technology that meets the targets established under section 301 and meets the requirements of subsection (b) for:

(1) advanced renewable power technologies:

(A) research, development and demonstration of large-scale, novel renewable power plants, including off-shore wind, enhanced geothermal, and renewable hydrogen power plants; and

(B) commercial-scale demonstration of advanced renewable energy manufacturing techniques, such as roll-to-roll manufacturing for solar photovoltaics and onsite manufacturing for supersized wind turbines; and

(2) mechanical, chemical, and thermal energy storage:

(A) research, development and demonstration of advanced grid-scale energy storage technologies with storage durations in the range of 10 to 50 hours; and

(B) research, development and demonstration of grid-scale energy storage projects that can economically balance electricity supply and demand across seasons; and

(3) research, development and demonstration of underground high-voltage direct current (HVDC) electricity transmission; and

(4) efficiency:

(A) developing standard energy efficiency retrofit packages that reduce the energy used by an average single-family home by at least 50 percent at a cost of no more than \$25,000 per such home;

(B) working with the heating, ventilation, and air conditioning (HVAC) controls industry to develop smart heating, ventilation, and air conditioning controls that—

(i) can be used in commercial buildings that have between 5,000 and 30,000 square feet of floor area;

(ii) can reduce heating, ventilation, and air conditioning (HVAC) energy consumption by an average of at least 20 percent compared to average commercial buildings; and

(iii) yield energy cost savings that can provide at least a 50 percent annual return on the original investment;

(iv) may include a cloud-based information technology;

(C) advanced technologies to improve energy efficiency or reduce emissions in heavy industries, including heavy industries that produce or refine aluminum, steel, cement, oil, fertilizer or other such products the Secretary may include; and

(D) flexible load technology improvements to reduce peak demand; and

(5) electrification of building and industrial processes to serve heating needs:

(i) heat pump space heaters to serve homes with ducts in cold climates;

(ii) heat pump water heaters;

(iii) induction stoves; and

(iv) advanced industrial process heat technologies.

(b) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection the following:

(1) With respect to the advanced renewable energy technologies projects described in subparagraph (a)(1), \$10,000,000,000.

(2) With respect to the energy storage technologies projects described in subparagraph (a)(2), \$2,000,000,000.

(3) With respect to the transmission technologies and projects projects described in subparagraph (a)(3), \$3,000,000,000.

(c) EARLY DEPLOYMENT.—

(1) IN GENERAL.—The Secretary shall establish a program to provide grants for early deployment of the technologies demonstrated under the Advanced Innovation and Commercialization program under section 202.

(2) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection \$15,000,000,000.

(d) FEDERAL PROCUREMENT.—

(1) IN GENERAL.—The Secretary, in collaboration with the Secretary of Defense and the Administrator of the General Services Administration, shall establish Federal procurement goals and deadlines for the following technologies:

(A) Advanced renewable energy technologies;

(B) Mechanical, chemical and thermal energy storage technologies;

(C) Advanced electricity transmission technology; and

(D) Advanced technologies that improve energy efficiency in buildings.

(2) FEDERAL ENERGY AND ADVANCED TECHNOLOGY ENERGY PROCUREMENT.—The Secretary, in collaboration with the Secretary of Defense and the Administrator of the General Services Administration, shall—

(A) through administrative and regulatory actions, improve Federal procurement of the technologies described in paragraph (1);

(B) identify and report on barriers to improving Federal procurement of energy and technologies that require legislative changes; and

(C) take due regard of the recommendations from the 2016 report entitled “Secretary of Energy Advisory Board Report of the Task Force on Federal Energy Management”.

SEC. 203. UPDATING MOBILE HOMES

(a) UPDATING MOBILE HOMES.—Not later than one year after the date of enactment of this section, the Secretary shall establish a program to provide grants and technical assistance to individuals or businesses to facilitate the replacement of energy-inefficient mobile homes with highly efficient zero-energy modular homes.

(b) Increase the authorization for the low-income Weatherization Assistance Program by [X].

SEC. 204. OTHER AUTHORIZATIONS OF APPROPRIATIONS.

(a) ARPA-E.—Amend Section 5012(o)(2) of the America COMPETES Act (42 U.S.C. 16538(o)(2)) to achieve a linear increase in the amount of appropriations from the year of enactment to \$1 billion in the fiscal year that is four years after enactment.

(b) Regional Innovation Models: \$100 million in FY 2020, \$200 million in FY 2021; \$300 million in FY 2022, and \$500 million in FY 2023.

(c) Grid Modernization: linear increase in amount from 2019 appropriations levels to \$650 million in FY 2023.

(d) Advanced land-based and offshore wind: linear increase in amount from 2018 appropriations levels to \$400 million in FY 2023.

(e) Advanced solar power: linear increase in amount from 2019 appropriations levels to \$600 million in FY 2023.

(f) Mechanical, chemical and thermal storage technologies: linear increase to \$750M in FY 2023.

(g) Buildings: linear increase in amount from 2019 levels to \$670 million in FY 2023.

(h) Industry: linear increase in amount from 2019 levels to \$840 million in FY 2023.

SEC. 205. TAX CREDITS.

(a) INVESTMENT TAX CREDITS FOR ENERGY BATTERY STORAGE, OFFSHORE WIND, AND CERTAIN HYDROPOWER TECHNOLOGIES.—

(1) INVESTMENT TAX CREDIT.—Subclause (II) of section 48(a)(2)(A)(i) of the Internal Revenue Code of 1986 is amended by striking “paragraph (3)(A)(i)” and inserting “clause (i) or (ix) of paragraph (3)(A)”.

(2) ENERGY TECHNOLOGIES.—Subparagraph (A) of section 48(a)(3) of the Internal Revenue Code of 1986, as amended by section 121, is amended by striking “or” at the end of clause (vii), and by adding at the end the following new clauses:

“(ix) equipment which generates wind energy from an offshore facility,

“(x) energy storage equipment,

“(xi) equipment which makes a non-hydroelectric dam capable of generating hydropower, or

“(xii) equipment which generates geothermal electricity through an enhanced geothermal system.”.

(3) PHASEOUT OF CREDIT.—Paragraph (6) of section 48(a) of the Internal Revenue Code of 1986 is amended—

(A) by striking “ENERGY” in the heading and inserting “AND ENERGY STORAGE”, and

(B) by striking “paragraph (3)(A)(i)” both places it appears and inserting “clause (i) or (ix) of paragraph (3)(A)”.

(4) DEFINITIONS.—Subsection (c) of Section 48 of the Internal Revenue Code of 1986 is amended by adding at the end the following—

“(5) QUALIFIED OFFSHORE WIND PROPERTY.—

“(A) IN GENERAL.—The term ‘qualified offshore wind property’ means an offshore facility using wind to produce electricity.

“(B) OFFSHORE FACILITY.—The term ‘offshore facility’ means any facility located in the inland navigable waters of the United States, including the Great Lakes, or in the coastal waters of the United States, including the territorial seas of the United States, the exclusive economic zone of the United States, and the outer Continental Shelf of the United States.”.

“(6) ENERGY STORAGE EQUIPMENT.—The term ‘energy storage equipment’ means equipment which receives, stores, and delivers energy using batteries, compressed air, pumped hydropower, hydrogen storage (including hydrolysis), thermal energy storage, regenerative fuel cells, flywheels, capacitors, superconducting magnets, or other technologies identified by the Secretary in consultation with the Secretary of Energy, and which has a capacity of not less than 5 kilowatt hours.”.

“(7) NONHYDROELECTRIC DAM.—The term “nonhydroelectric dam” means a nonhydroelectric dam that—

“(i) is licensed by the Federal Energy Regulatory Commission and meets all other applicable environmental, licensing, and regulatory requirements,

“(ii) was placed in service before the date of the enactment of this paragraph and operated for flood control, navigation, or water supply purposes and did not produce hydroelectric power on the date of the enactment of this paragraph, and

“(iii) is operated so that the water surface elevation at any given location and time that would have occurred in the absence of the hydroelectric project is maintained, subject to any license requirements imposed under applicable law that change the water surface elevation for the purpose of improving environmental quality of the affected waterway; provided that

“(iv) the Secretary, in consultation with the Federal Energy Regulatory Commission, shall certify if a hydroelectric project licensed at a nonhydroelectric dam meets the criteria in clause (iii), and nothing in this section shall affect the standards under which

the Federal Energy Regulatory Commission issues licenses for and regulates hydropower projects under part I of the Federal Power Act.”.

“(8) ENHANCED GEOTHERMAL SYSTEM.—The term ‘enhanced geothermal system’ means a system to extract heat by creating a subsurface fracture system to which water can be added through injection wells.”.

(5) EFFECTIVE DATE.—The amendments made by this subsection to Section 48 of the Internal Revenue Code of 1986 shall apply to property placed in service after December 31, 2019.

(b) EXTENSION OF PRODUCTION TAX CREDIT FOR SOLAR AND ON-SHORE WIND.

(1) WIND.—Section 45(d)(1) of the Internal Revenue Code of 1986 is amended by striking “January 1, 2021” and inserting “January 1, 2031.”

(2) SOLAR.—Section 45(d)(4)(A) of the Internal Revenue Code of 1986 is amended by striking “January 1, 2006” and inserting “January 1, 2031.”

(3) APPLICATION OF PHASEOUT PERCENTAGE.—Section 45(b)(5)(D) of the Internal Revenue Code of 1986 is amended by striking “January 1, 2021” and inserting “January 1, 2031.”

(c) RENEWAL OF THE SECTION 48C ADVANCED ENERGY MANUFACTURING TAX CREDIT.—

(1) IN GENERAL.—Section 48C(d)(2)(A) of the Internal Revenue Code of 1986 is amended by striking “during the 2-year period beginning on the date the Secretary establishes the program under paragraph (1).”

(d) PERFORMANCE-BASED ENERGY EFFICIENCY TAX CREDITS FOR COMMERCIAL AND RESIDENTIAL BUILDINGS.

(1) In general.—The Internal Revenue Code of 1986 is amended by inserting the following after section XXX—

“SEC. XXX. PERFORMANCE-BASED ENERGY EFFICIENCY TAX CREDITS FOR COMMERCIAL AND RESIDENTIAL BUILDINGS.

“(a) Definitions.—In this section:

“(1) Btu.—The term “Btu” means British Thermal Unit.”

“(2) Building energy.—The term “building energy” means energy consumed at the building site as measured at the site boundary, which includes heating; cooling; ventilation; domestic hot water; indoor and outdoor lighting; plug loads; process energy; elevators and conveying systems; and intra-building transportation systems.

“(3) Deep energy retrofit.—The term “deep energy retrofit” means a project that uses energy efficiency measures and renewable energy resources to reduce the energy use of an existing building by at least 50 percent on an annual basis relative to the most recent 12 month period in which the building was fully occupied prior to the project; provided that energy efficiency measures must account for at least 40 percent of the reduction in energy use.

“(4) Delivered energy.—The term “delivered energy” means any type of energy that could be bought or sold as building energy, including electricity; steam; hot or chilled water; natural gas; biogas; landfill gas; coal; coke; propane; petroleum and its derivatives; residual fuel oil; alcohol-based fuels; wood; biomass; and any other material consumed as fuel.

“(5) Exported energy.—The term “exported energy” means on-site renewable supplied through the site boundary and used outside the site boundary.

“(6) High rise commercial building.—The term “high rise commercial building” means a commercial building of four or more above grade stories.

“(7) High rise residential building.—The term “high rise residential building” means a multi-family building with four or more above grade stories.

“(8) kWh—The term “kWh” means Kilowatt Hour.

“(9) Low rise residential building.—The term “low rise residential building” means a single-family home or multi-family building with no more than three above grade stories.

“(10) On-site renewable energy.—The term “on-site renewable energy” means any renewable energy collected and generated within the site boundary that is used for building energy, and the excess renewable energy exported outside the site boundary; provided that any renewable energy certificates associated with the on-site renewable energy must be retained or retired by the building owner or lessee to be claimed as on-site renewable energy.

“(11) Renewable energy.—The term “renewable energy” means energy generated by biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, or tidal action resources.

“(12) Renewable energy certificate.—The term “renewable energy certificate” means a certificate or credit that represents and conveys the environmental, social, or other non-power qualities of one megawatt hour of renewable energy, and can be sold separately from the underlying physical electricity associated with the renewable energy resource.

“(13) Site boundary.—The term “site boundary” means the limits of the building site across which delivered energy and exported are measured.

“(14) Source energy.—The term “source energy” means building energy plus the energy consumed in the extraction, processing and transport of primary fuels such as coal, oil and natural gas; energy losses in thermal combustion in electricity generation resources; and energy losses in transmission and distribution to the building site.

“(15) Zero-energy building.—The term “zero-energy building” means a building for which, on a source energy basis, the actual annual delivered energy is less than or equal to the on-site renewable exported energy; provided that energy purchased from off-site and renewable energy generated on-site and then sold off-site shall be valued at 6000 Btu/kWh.

“(16) Zero-energy-ready building.—The term “zero-energy-ready building” means a building that:

“(A) if it is a commercial building or high-rise residential building:

“(i) is in compliance with Standard 90.1-2019 published by the American Society of Heating, Refrigerating, and Air Conditioning Engineers;

“(ii) is in compliance with Appendix CA (Solar-Ready Zone) of the 2021 International Energy Conservation Code; and

“(iii) demonstrates that its energy consumption is at least 30 percent below the maximum permitted under American Society of Heating, Refrigerating, and Air Conditioning Engineers Standard 90.1-2019, as calculated using the methodology in Appendix G of such standard.

“(B) if it is a low-rise residential building:

“(i) has an Energy Rating Index of 40 or less as calculated using the procedures in Chapter 3 of the residential section of the 2012 International Energy Conservation Code but excluding any renewable energy resources in the calculation; and

“(ii) is in compliance with Appendix RA (Solar-Ready Zone) of the 2021 International Energy Conservation Code; and

“(iii) is certified under:

“(I) the Zero Energy Ready Homes program administered by the Department of Energy; or

“(II) the Passive House specifications of the Passive Institute US or the International Passive House Institute; provided that

“(III) certification of compliance with the Energy Rating Index requirement may be made by a registered architect or engineer.

“(b) Eligibility for tax credit.—To be eligible to receive a tax credit under this section, the builder or owner of a building must demonstrate that:

“(1) the building is located in the United States;

“(2) the building is at least 50 percent occupied when the tax credit is claimed;

“(3) if the building has implemented a deep energy retrofit, the project has been completed and certified as a deep energy retrofit by a registered architect or engineer; and

“(4) if the building is a zero-energy building, the building has been zero-energy for 12 continuous months with at least 50 percent occupancy as verified:

“(A) through certification by the Living Buildings Institute Zero Energy Certification Program;

“(B) through certification by the LEED Zero Energy Certification Program Verification; or

“(C) by another professional authorized by the Secretary of Energy by rule.

“(c) Tax credit amounts.—

“(1) Zero-energy-ready buildings.—The following tax credit amounts shall be awarded for certified zero-energy-ready buildings:

“(A) for a residential building with no more than four dwelling units, \$5,000 per dwelling unit;

“(B) for a residential building with five or more dwelling units, \$3,500 per dwelling unit; and

“(C) for a commercial building, \$3 per square foot of floor area.

“(2) Zero-energy buildings.—The following tax credit amounts shall be awarded for certified zero-energy buildings:

“(A) for a residential building with no more than four dwelling units, \$5,000 per dwelling unit;

“(B) for a residential building with five or more dwelling units, \$3,500 per dwelling unit; and

“(C) for a commercial building that is a zero-energy building for a period of 12 continuous months starting after the building is at least 50 percent occupied, \$3 per square foot of floor area.

“(3) Deep energy retrofits.—The following tax credit amounts shall be awarded to buildings upon completion of a deep energy retrofit:

“(A) for a residential building, \$10,000 per dwelling unit, up to a maximum of \$2,000,000 per building; and

“(B) for a commercial building, \$25 per square foot of floor area, up to a maximum of \$1,000,000 per building.

“(d) Tax credit recipient.—The person eligible to receive a tax credit under this section shall be:

“(1) for a new residential building, the builder;

“(2) for an existing residential building that has undergone a deep energy retrofit, the builder;

“(3) for a new commercial building, the building owner; and

“(4) for an existing commercial building that has undergone a deep energy retrofit, the building owner; provided that

“(5) a building owner that receives a tax credit under this section may transfer the tax credit to the architect, builder, or contractor.

“(e) Exclusions.—A building project is not eligible for tax credits under this section if the owner or builder has used another Federal tax incentive for the same project, including incentives under sections 25C, 25D, and 179D of this title.

“(f) Sunset of tax credit authority.—The tax credit authority under this section shall terminate:

“(1) for zero-energy and zero-energy-ready residential buildings, one year after the Secretary of Energy determines by rule that such buildings accounted for at least 20 percent of new residential buildings in the most recent calendar year;

“(2) for zero-energy and zero-energy-ready commercial buildings, one year after the Secretary of Energy determines by rule that such buildings accounted for at least 20 percent of new commercial building construction in the most recent calendar year;

“(3) for deep energy retrofits to residential buildings, one year after the Secretary of Energy determines by rule that at least 10 percent of units at residential buildings have undergone such retrofits; and

“(4) for deep energy retrofits to commercial buildings, one year after the Secretary of Energy determines by rule that at least 10 percent of the floor area of commercial buildings has undergone such retrofits.

“(g) Rulemaking.—Not later than one year after enactment of this section, the Secretary, in coordination with the Secretary of Energy, shall promulgate rules to implement this section.

“(h) Report to Congress.—Not later than two years after enactment of this section, and each calendar year thereafter, the Secretary shall report to Congress on the use of tax credits under this section broken down by the categories in subsection (c), which report shall include:

“(1) the dollar value of tax credits awarded to date and in the prior calendar year; and

“(2) the number of units at residential buildings and the number of square feet of floor area in commercial buildings for which tax credits were awarded to date and in the prior year calendar year.”

(2) TABLE OF CONTENTS.—The table of contents of the Internal Revenue Code of 1986 is amended by inserting after section XX the following:

“Sec. XXX. PERFORMANCE-BASED ENERGY EFFICIENCY TAX CREDITS FOR COMMERCIAL AND RESIDENTIAL BUILDINGS.

(e) PLACEHOLDER: PERFORMANCE-BASED ELECTRIFICATION TAX CREDITS FOR COMMERCIAL AND RESIDENTIAL BUILDING EQUIPMENT.

(f) EXTENSION OF PUBLICLY TRADED PARTNERSHIP OWNERSHIP STRUCTURE TO RENEWABLE ENERGY PROJECTS.—

(1) IN GENERAL.—Subparagraph (E) of section 7704(d)(1) of the Internal Revenue Code of 1986 is amended—

(A) by striking “, or the transportation or storage” and all that follows and inserting the following:

“(ii) RENEWABLE ENERGY.—The generation of electric power (including the leasing of tangible personal property used for such generation) exclusively utilizing any resource described in section 45(c)(1) or energy property described in section 48 (determined without regard to any termination date), or in the case of a facility described in paragraph (3) or (7) of section 45(d) (determined without regard to any placed in service date or date by which construction of the facility is required to begin), the accepting or processing of such resource.

“(iii) ENERGY STORAGE PROPERTY.—The sale of electric power, capacity, resource adequacy, demand response capabilities, or ancillary services that is produced or made available from any equipment or facility (operating as a single unit or as an aggregation of units) the principal function of which is to—

“(I) use mechanical, chemical, electrochemical, hydroelectric, or thermal processes to store energy that was generated at one time for conversion to electricity at a later time, or

“(II) store thermal energy for direct use for heating or cooling at a later time in a manner that avoids the need to use electricity at that later time.

“(iv) COMBINED HEAT AND POWER.—The generation, storage, or distribution of thermal energy exclusively utilizing property described

in section 48(c)(3) (determined without regard to subparagraphs (B) and (D) thereof and without regard to any placed in service date).

“(v) RENEWABLE THERMAL ENERGY.—The generation, storage, or distribution of thermal energy exclusively using any resource described in section 45(c)(1) or energy property described in clause (i) or (iii) of section 48(a)(3)(A).

“(vi) WASTE HEAT TO POWER.—The use of recoverable waste energy, as defined in section 371(5) of the Energy Policy and Conservation Act ([42 U.S.C. 6341\(5\)](#)).

(g) EFFECTIVE DATE.—The amendments made by this section shall apply to taxable years beginning after December 31, 2020.

TITLE III—NUCLEAR: EXISTING AND ADVANCED PLANTS

SEC. 301. NATIONAL ZERO EMISSIONS CREDIT PROGRAM.

(a) **ESTABLISHMENT.**—Not later than 2 years after the date of enactment of this section, the Secretary of Energy shall establish a program to be known as the “Zero-Emission Credit Program”.

(b) **ISSUANCE OF CREDITS.**—Not later than March 1 of each calendar year after establishment of the Zero-Emission Credit Program, the Secretary of Energy shall issue zero-emissions credits the owner or operator of a qualified nuclear power plant in an quantity equal to the amount of megawatt hours of electricity such plant sold to an organized power market in the prior calendar year.

(c) **PAYMENT FOR RECEIPT OF CREDITS.**—

(1) **IN GENERAL.**—Except as provided in paragraphs (2) and (3), the Secretary of Energy shall pay the owner or operator of a qualified nuclear power plant \$13.25 for each zero-emissions credit such owner or operator submits to the Secretary of Energy.

(2) **ADJUSTMENTS FOR INFLATION.**—The Secretary of Energy shall adjust the amount of the payment for each zero-emissions credit each year based on inflation.

(3) **REDUCTION IN VALUE OF CREDIT.**—If the price for the sale of electricity increases such that payments for zero-emissions credits are no longer needed to sustain the operation of a qualifying nuclear power plant, the Secretary of Energy shall reduce the payment per zero-emissions credit for that plant in accordance with such change in price.

(d) **TERMINATION DATE.**—The Zero-Emissions Credit Program shall terminate on the date that is 8 years after the date on which the Secretary of Energy establishes the Zero-Emissions Credit Program.

(e) **DEFINITIONS.**—In this section:

(1) ORGANIZED POWER MARKET.—The term “organized power market” means a market for wholesale sales of electricity operated by a regional transmission organization or an independent system operator.

(2) QUALIFIED NUCLEAR POWER PLANT.—

(A) IN GENERAL.—The term “qualified nuclear power plant” means a nuclear power plant that the Secretary of Energy determines, based on an application submitted by such plant, will be financially unviable/retire if it does not receive payments under the Zero-emissions Credit Program.

(B) EXCLUSION.—The term “qualified nuclear power plant” does not include a nuclear power plant that receives a tax credit under section 302.

(4) ZERO-EMISSIONS CREDIT.—The term “zero-emissions credit” means a credit issued by the Secretary of Energy under the Zero-Emission Credit Program that represents 1 megawatt of nuclear electricity sold to an organized power market

SEC. 302. INVESTMENT TAX CREDIT FOR NUCLEAR ENERGY PROPERTY.

(a) IN GENERAL.—Section 48(a)(3)(A) of the Internal Revenue Code of 1986 is amended—

(1) in clause (vi), by striking “or”;

(2) in clause (vii), by inserting “or” at the end; and

(3) by adding at the end the following new clause:

“(viii) qualified nuclear energy property,”.

(b) ELIGIBLE FOR 30-PERCENT CREDIT.—Section 48(a)(2)(A)(i) of such Code is amended by striking “and” in subclause (III) and by adding at the end the following new subclause:

“(V) energy property described in paragraph (3)(A)(viii) but only with respect to property placed in service before January 1, 2024, and”.

(c) QUALIFIED NUCLEAR ENERGY PROPERTY.—Section 48(c) of such Code is amended by adding at the end the following new paragraph:

“(5) QUALIFIED NUCLEAR ENERGY PROPERTY.—

“(A) IN GENERAL.—The term ‘qualified nuclear energy property’ means any amounts paid or incurred for the refueling of, and any other expenditures described in section 263(a) with respect to, a qualifying nuclear power plant.

“(B) QUALIFYING NUCLEAR POWER PLANT.—The term ‘qualifying nuclear power plant’ means a nuclear power plant which—

“(i) submitted an application for license renewal to the Nuclear Regulatory Commission in accordance with part 54 of title 10, Code of Federal Regulations, before January 1, 2026, or

“(ii) certified to the Secretary (at such time and in such form and in such manner as the Secretary prescribes) that such plant will submit an application for license renewal to the Nuclear Regulatory Commission in accordance with part 54 of title 10, Code of Federal Regulations, before January 1, 2026.

“(C) SPECIAL RULES.—

“(i) BASIS.—For purposes of subsection (a), the cumulative amounts paid or incurred by the taxpayer during the taxable year with respect to a qualifying nuclear power plant, which are properly chargeable to capital account, shall be treated as the basis of the qualified nuclear energy property placed in service for that taxable year.

“(ii) PLACED IN SERVICE.—For purposes of subsection (a), qualified nuclear energy property shall be treated as having been placed in service on the last day of the taxable year in which the taxpayer pays or incurs such amounts described in clause (i).

“(iii) RECAPTURE.—The Secretary shall, by regulations, provide for recapturing the benefit of any credit allowable under

subsection (a) to any qualifying nuclear power plant which made a certification pursuant to subparagraph (B) but does not file an application of license renewal to the Nuclear Regulatory Commission in accordance with part 54 of title 10, Code of Federal Regulations, before January 1, 2026.”.

(d) PHASEOUT OF 30-PERCENT CREDIT RATE FOR NUCLEAR ENERGY PROPERTY.—Section 48(a) of such Code is amended by adding at the end the following new paragraph:

“(7) PHASEOUT FOR QUALIFIED NUCLEAR ENERGY PROPERTY.—In the case of qualified nuclear energy property, the energy percentage determined under paragraph (2) shall be equal to—

“(A) in the case of any property placed in service after December 31, 2023, and before January 1, 2025, 26 percent, and

“(B) in the case of any property placed in service after December 31, 2022, and before January 1, 2026, 22 percent.”.

(e) COORDINATION WITH CREDIT FOR PRODUCTION FROM ADVANCED NUCLEAR POWER FACILITIES.—The last sentence of section 48(a)(3) of such Code is amended by inserting “or 45J” after “section 45”.

(f) TRANSFER OF CREDIT BY CERTAIN PUBLIC ENTITIES.—

(1) IN GENERAL.—Section 48 of such Code is amended by adding at the end the following new subsection:

“(e) SPECIAL RULE FOR QUALIFIED NUCLEAR ENERGY PROPERTY.—

“(1) IN GENERAL.—In the case of any qualified nuclear energy property, if, with respect to a credit under subsection (a) for any taxable year—

“(A) the taxpayer would be a qualified public entity, and

“(B) such entity elects the application of this subsection for such taxable year with respect to all (or any portion specified in such election) of such credit, the eligible project partner specified in such election (and not the qualified public entity) shall be treated as the

taxpayer for purposes of this title with respect to such credit (or such portion thereof).

“(2) DEFINITIONS.—For purposes of this subsection—

“(A) QUALIFIED PUBLIC ENTITY.—The term ‘qualified public entity’ means—

“(i) a Federal, State, or local government entity, or any political subdivision, agency, or instrumentality thereof,

“(ii) a mutual or cooperative electric company described in section 501(c)(12) or section 1381(a)(2), or

“(iii) a not-for-profit electric utility which has or had received a loan or loan guarantee under the Rural Electrification Act of 1936.

“(B) ELIGIBLE PROJECT PARTNER.—The term ‘eligible project partner’ means—

“(i) any person responsible for operating, maintaining, or repairing the qualifying nuclear power plant to which the credit under subsection (a) relates,

“(ii) any person who participates in the provision of the nuclear steam supply system to the qualifying nuclear power plant to which the credit under subsection (a) relates,

“(iii) any person who participates in the provision of nuclear fuel to the qualifying nuclear power plant to which the credit under subsection (a) relates, or

“(iv) any person who has an ownership interest in such facility.

“(3) SPECIAL RULES.—

“(A) APPLICATION TO PARTNERSHIPS.—In the case of a credit under subsection (a) which is determined with respect to qualified nuclear energy property at the partnership level—

“(i) for purposes of paragraph (1)(A), a qualified public entity shall be treated as the taxpayer with respect to such entity’s distributive share of such credit, and

“(ii) the term ‘eligible project partner’ shall include any partner of the partnership.

“(B) TAXABLE YEAR IN WHICH CREDIT TAKEN INTO ACCOUNT.—In the case of any credit (or portion thereof) with respect to which an election is made under subsection (e), such credit shall be taken into account in the first taxable year of the eligible project partner ending with, or after, the qualified public entity’s taxable year with respect to which the credit was determined.

“(C) TREATMENT OF TRANSFER UNDER PRIVATE USE RULES.—For purposes of section 141(b)(1), any benefit derived by an eligible project partner in connection with an election under this subsection shall not be taken into account as a private business use.”.

(2) SPECIAL RULE FOR PROCEEDS OF TRANSFERS FOR MUTUAL OR COOPERATIVE ELECTRIC COMPANIES.—Section 501(c)(12) of such Code is amended by adding at the end the following new subparagraph:

“(I) In the case of a mutual or cooperative electric company described in this paragraph or an organization described in section 1381(a)(2), income received or accrued in connection with an election under section 48(e) shall be treated as an amount collected from members for the sole purpose of meeting losses and expenses.”.

(g) CONFORMING AMENDMENT.—Section 48(a)(2)(A) of such Code is amended by striking “paragraph (6)” and inserting “paragraphs (6) and (7)”.

(h) EFFECTIVE DATE.—The amendments made by this section shall apply to periods after December 31, 2018, in taxable years ending after such date, under rules similar to the rules of section 48(m) of the Internal Revenue Code of 1986 (as in effect on the day before the enactment of the Revenue Reconciliation Act of 1990).

SEC. 303. EXPANDING FEDERAL CLEAN ELECTRICITY PURCHASING REQUIREMENTS.

(a) AMENDMENTS TO THE FEDERAL PURCHASE REQUIREMENTS OF THE ENERGY POLICY ACT OF 2005.—Section 203 of the Energy Policy Act of 2005 (42 U.S.C. 15852) is amended as follows:

(1) In subsection (a), by striking “, the following amounts shall be renewable energy:” and inserting “, such amount shall be made up of the following:”.

(2) In subsection (a)(1), by inserting “shall be renewable energy” after “2009”.

(3) In subsection (a)(2), by inserting “shall be renewable energy” after “2012”.

(4) In subsection (a)(3), by striking “7.5 percent in fiscal year 2013 and each fiscal year thereafter.” and inserting “7.5 percent in fiscal years 2013 through 2019 shall be renewable energy.”.

(5) In subsection (a), by adding at the end the following:

“(4) Not less than 35 percent in fiscal year 2021 and each year thereafter shall be clean electricity.”.

(6) In subsection (b), by adding at the end the following:

“(3) CLEAN ELECTRICITY.—The term ‘clean electricity’ means—

“(A) electric energy generated from a renewable energy resource

“(B) electric energy generated from a nuclear power plant; and

“(C) the percentage of electric energy generated from a power plant using carbon capture and sequestration technology that equals the percentage of carbon dioxide emissions captured and sequestered from such plant.”.

(7) In subsection (c), by striking “renewable energy” and inserting “clean electricity”.

(8) By redesignating subsection (d) as subsection (e).

(9) By inserting after subsection (c) the following:

“(d) POWER PURCHASE AGREEMENT.—The Secretary may enter into a power purchase agreement for all of the electricity output of a nuclear power plant for the duration of the operational life of such nuclear power plant if such plant supplies electricity for purposes of national security or mission-critical activities.

(b) AMENDMENTS TO ENERGY POLICIES OF THE DEPARTMENT OF DEFENSE AND THE DEPARTMENT HOMELAND SECURITY.—Subtitle B of title VI of the Energy Policy Act of 2005 is amended by adding at the end the following:

“SEC. 639A. LONG-TERM NUCLEAR POWER PURCHASE AGREEMENT PILOT PROGRAM.

“(a) ESTABLISHMENT.—The Secretary shall establish a pilot program for long-term power purchase agreements for electricity generated by nuclear power plants.

“(b) REQUIREMENTS.—In developing the pilot program under this section, the Secretary shall—

“(1) consult and coordinate with the heads of other Federal departments and agencies that may benefit from purchasing nuclear power for a period of longer than 10 years, including—

“(A) the Secretary of Defense; and

“(B) the Secretary of Homeland Security; and

“(2) not later than 5 years after the date of enactment of this section, enter into at least 1 agreement to purchase power from a commercial nuclear reactor for up to 40 years.

“(c) FACTORS FOR CONSIDERATION.—

“(1) IN GENERAL.—In carrying out this section, the Secretary shall prioritize entering into power purchase agreements for first-of-a-kind or early deployment nuclear technologies that can provide reliable and resilient power to high-value assets for national security purposes or other purposes as the Secretary determines to be in the national interest,

especially in remote off-grid scenarios or grid-connected scenarios that can provide capabilities commonly known as ‘islanding power capabilities’ during an emergency scenario.

“(2) EFFECT ON RATES.—An agreement to purchase power under this section may be at a rate that is higher than the average market rate, if the agreement fulfills an applicable consideration described in paragraph (1).”.

(c) TABLE OF CONTENTS.—The table of contents of the Energy Policy Act of 2005 (P. L. 109–58; 119 Stat. 594) is amended by inserting after the item relating to section 639 the following:

“Sec. 639A. Long-term nuclear power purchase pilot program.”.

(d) AUTHORIZATION OF LONG-TERM POWER PURCHASE AGREEMENTS.—Section 501(b)(1) of title 40, United States Code, is amended by striking subparagraph (B) and inserting the following:

“(B) PUBLIC UTILITY CONTRACTS.—

“(i) TERM.—

“(I) IN GENERAL.—A contract under this paragraph to purchase electricity from a public utility may be for a period of not more than 40 years.

“(II) OTHER PUBLIC UTILITY SERVICES.—A contract under this paragraph for a public utility service other than a service described in subclause (I) may be for a period of not more than 10 years.

“(ii) COSTS.—The cost of a contract under this paragraph for any fiscal year may be paid from the appropriations for that fiscal year.

SEC. 304. AUTHORIZATIONS OF APPROPRIATIONS FOR INNOVATION IN NUCLEAR POWER.

There are authorized to be appropriated to the Secretary of Energy \$650,000,000 for each of fiscal years 2021 through 2026 for—

- (1) Gateway for Accelerated Innovation in Nuclear vouchers;]
- (2) advanced nuclear technology development funding opportunity announcements;
- (3) advanced small modular reactor (SMR) research and development; and
- (4) the advanced reactor demonstration program.

SEC. 305. MODERNIZING THE NUCLEAR REGULATORY COMMISSION.

(a) DEFINITIONS.—In this section:

(1) ADVANCED NUCLEAR REACTOR.—The term “advanced nuclear reactor” means a nuclear fission or fusion reactor, including a prototype plant (as defined in sections 50.2 and 52.1 of title 10, Code of Federal Regulations as in effect on the date of enactment of this section), with significant improvements compared to commercial nuclear reactors that are under construction as of the date of enactment of this section, including improvements such as—

- (A) additional inherent safety features;
- (B) significantly lower levelized cost of electricity;
- (C) lower waste yields;
- (D) greater fuel utilization;
- (E) enhanced reliability;
- (F) increased proliferation resistance;
- (G) increased thermal efficiency;
- (H) reduced consumption of cooling water;

(I) the ability to integrate into electric applications and nonelectric applications;

(J) modular sizes to allow for deployment that corresponds with the demand for electricity; or

(K) operational flexibility to respond to changes in demand for electricity and to complement integration with intermittent renewable energy.

(2) APPLICANT.—The term “applicant” means an applicant for a license, certification, permit, or other form of approval from the Commission for an advanced nuclear reactor or a research and test reactor.

(3) COMMISSION.—The term “Commission” means the Nuclear Regulatory Commission.

(b) REDUCING THE ADMINISTRATIVE BURDEN OF LICENSING ACTIVITIES FOR NEW DESIGNS OF ADVANCED NUCLEAR REACTORS.—

(1) REPORT.—Not later than 90 days after the date of enactment of this section, the 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 that recommends how to improve the processes, procedures and, if appropriate, regulations of the Commission with respect to licensing, certification, and approval of advanced nuclear reactor designs.

(2) REQUIRED RECOMMENDATIONS.—The report submitted under paragraph (1) shall include recommendations to—

(A) improve all Commission actions with respect to licensing, certification, and approval of advanced nuclear reactor designs, including actions to meet the Commission’s obligations under the National Environmental Policy Act of 1969 (42 U.S.C. 4231 et seq.);

(B) emphasize risk-informed and performance-based regulatory approaches; and

(C) enable the Commission to finalize its review of an application for an advanced nuclear reactor in no more than two years.

(c) STUDY ON ELIMINATION OF FOREIGN LICENSING RESTRICTIONS.—Not later than 18 months after the date of enactment of this section, the Comptroller General, in consultation with the Secretary of Energy, shall submit to Congress a report containing the results of a study on the feasibility and implications of repealing restrictions under sections 103 d. and 104 d. of the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.).

(d) STUDY ON THE IMPACT OF THE ELIMINATION OF MANDATORY HEARINGS FOR UNCONTESTED LICENSING APPLICATIONS.—Not later than 18 months after the date of enactment of this section, the Comptroller General, in consultation with the Secretary of Energy, shall submit to Congress a report containing the results of a study on the estimated impact of eliminating the requirements for mandatory hearings for uncontested licensing and construction permit applications under section 189 of the Atomic Energy Act of 1954 (42 U.S.C. 2239).

(e) INFORMAL HEARING PROCEDURES.—

(1) PROCEDURES.—Section 189 a. of the Atomic Energy Act of 1954 (42 U.S.C. 2239(a)) is amended by adding at the end the following:

“(3) Any hearing under this section shall be conducted using informal adjudicatory procedures in accordance with sections 553 and 555 of title 5, United States Code, unless the Commission determines that formal adjudicatory procedures are necessary—

“(A) to develop a sufficient record; or

“(B) to achieve fairness.”.

(2) HEARINGS ON LICENSING OF URANIUM ENRICHMENT FACILITIES.—Section 193(b) of the Atomic Energy Act of 1954 (42 U.S.C. 2243(b)) is amended—

(A) in paragraph (1), by striking “on the record” and all that follows through “and 63” and inserting “Upon a request for a hearing on the licensing of construction and operation of a uranium

enrichment facility under sections 53 and 63, the Commission shall conduct a single adjudicatory hearing.”

(B) in paragraph (2), by striking “Such hearing” and inserting “If a hearing is held under paragraph (1), the hearing”.

(f) APPLICATION REVIEWS FOR NUCLEAR ENERGY PROJECTS.—Section 185 of the Atomic Energy Act of 1954 (42 U.S.C. 2235) is amended by adding at the end the following:

“c. APPLICATION REVIEW FOR NUCLEAR ENERGY PROJECTS.—

“(1) STREAMLINING LICENSE APPLICATION REVIEW.—With respect to an application for a construction permit, operating license, or combined construction permit and operating license for a production or utilization facility, the Commission shall include the following procedures:

“(A) Undertake an expedited environmental review process and issue any draft environmental impact statement as required under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) not later than 24 months after the date on which the application is accepted for docketing.

“(B) Complete the technical review process of the application and issue any safety evaluation report and any final environmental impact statement required under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) not later than 24 months after the date on which the application is accepted for docketing.

“(2) EARLY SITE PERMIT.—

“(A) SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT.—In a proceeding for a combined construction permit and operating license for a site for which an early site permit has been issued, any environmental impact statement prepared by the Commission and cooperating agencies under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) shall be prepared as a supplement to the environmental impact statement prepared for the early site permit.

“(B) INCORPORATION BY REFERENCE.—The supplemental environmental impact statement prepared under subparagraph (A) shall—

“(i) incorporate by reference the analysis, findings, and conclusions from the environmental impact statement prepared for the applicable early site permit; and

“(ii) include additional discussion, analyses, findings, and conclusions on matters resolved in the early site permit proceeding only to the extent necessary to address information that—

“(I) is new; and

“(II) would materially change the prior findings or conclusions

“(3) PRODUCTION OR UTILIZATION FACILITY LOCATED AT AN EXISTING SITE.—In reviewing an application for an early site permit, construction permit, operating license, or combined construction permit and operating license for a production or utilization facility located at the site of a licensed production or utilization facility under 10 C.F.R. Part 50 as in effect on the date of enactment of this section, the Commission shall, to the extent practicable, use information that was part of the licensing basis of the pre-existing licensed production or utilization facility

“(4) HEARING ON EARLY SITE PERMIT, CONSTRUCTION PERMIT, AND COMBINED CONSTRUCTION PERMIT AND OPERATING LICENSE.—

“(A) IN GENERAL.—The Commission shall issue and make immediately effective an early site permit or construction permit for a production or utilization facility upon finding that the application therefor satisfies the requirements of this Act, notwithstanding the pendency before the Commission of a request for a hearing.

“(B) APPROPRIATE ACTION.— Following completion of any required hearing, the Commission shall take any appropriate action with respect to the early site permit, construction permit, or

combined construction permit and operating license to the extent necessary to account for the hearing results.

“(5) EARLY SITE PERMIT DEFINED.—The term ‘early site permit’ means the permit described at 10 C.F.R. Part 52.1(a) as in effect on the date of enactment of this section.

(g) AUTHORIZATION OF APPROPRIATIONS.—

(1) IN GENERAL.—There are authorized to be appropriated to carry out this section, including with respect to the requirements of subsection (b), \$20,000,000 for each of the fiscal years 2021 through 2028, to remain available until expended.

(2) OFF-FEE APPROPRIATION.—Funds appropriated under this section shall not be recoverable by the Commission from existing licensees through user fees.

SEC. 306. RESERVED.

SEC. 307. DEMONSTRATION AND EARLY DEPLOYMENT OF ADVANCED NUCLEAR REACTORS.

(a) IN GENERAL.—Subtitle B of title VI of the Energy Policy Act of 2005 (P. L. 109–58; 119 Stat. 782) is further amended by adding at the end the following:

“SEC. 639B. ADVANCED NUCLEAR REACTOR RESEARCH AND DEVELOPMENT GOALS.

“(a) IN GENERAL.—The Secretary shall, as soon as practicable after the date of enactment of this section, advance the research and development of domestic, advanced, affordable, and clean nuclear energy by—

“(1) demonstrating different advanced nuclear reactor technologies that may be used by the private sector to produce—

“(A) emission-free power at a cost of not more than \$70 per megawatt hour;

“(B) heat for industrial purposes or synthetic fuel production;

“(C) a supply of remote or off-grid energy; or

“(D) a backup or power supply that is critical to the mission served by the power and therefore cannot be interrupted;

“(2) developing goals for nuclear energy research programs carried out by the Department’s Office of Nuclear Energy that would accomplish the goals of the demonstration projects carried out under subsection (b);

“(3) identifying research that the private sector is unable or unwilling to undertake due to the cost of, or risks associated with, the research; and

“(4) facilitating the access of the private sector—

“(A) to Federal research facilities; and

“(B) to the results of research funded by the Federal Government.

“(b) DEMONSTRATION PROJECTS.—

“(1) IN GENERAL.—By no later than December 31, 2025, the Secretary shall establish a program to enter into agreements to carry out not more than 5 additional projects to demonstrate the suitability of advanced nuclear reactors for commercial applications.

“(2) REQUIREMENTS.—In carrying out a demonstration project under paragraph (1), the Secretary shall—

“(A) seek to include diversity in designs for the advanced nuclear reactors in demonstration projects carried out under this section, including designs using various primary coolants;

“(B) ensure that—

“(i) the long-term cost of electricity or heat for each design involved in a demonstration project carried out under this subsection is cost-competitive in the applicable market; and

“(ii) such cost-competitiveness of each such design is verified by an external review;

“(C) enter into cost-sharing agreements with partners in accordance with section 988 for the conduct of activities relating to the research, development, and demonstration of private-sector advanced nuclear reactor designs under the program;

“(D) work with private sector partners to identify potential sites, including sites owned by the Department, to carry out demonstration projects, as appropriate; and

“(E) align specific activities carried out under demonstration projects carried out under this subsection with priorities identified through direct consultation between—

“(i) the Secretary;

“(ii) the National Laboratories;

“(iii) traditional end-users (such as an electric utility);

“(iv) potential end-users of new technologies (such as petrochemical companies); and

“(v) developers of advanced nuclear reactor technology.

“(c) GOALS.

“(1) IN GENERAL.—The Secretary shall establish goals for the research relating to advanced nuclear reactors under subsection (b) that support the objectives of the program for demonstration projects established under subsection (b).

“(2) COORDINATION.—In developing the goals under paragraph (1), the Secretary shall coordinate regularly with members of private industry to advance the demonstration of various designs of advanced nuclear reactors under the program established under subsection (b).

“(3) REQUIREMENTS.—The goals established under paragraph (1) shall ensure that:

“(A) the research activities are focused on key areas of nuclear research and deployment that range from basic research on advanced

nuclear reactor generation to full-design development, safety evaluation, and licensing;

“(B) the research activities are designed to emphasize—

“(i) resolving materials challenges relating to radiation damage or corrosive coolants; and

“(ii) qualification of advanced nuclear fuels;

“(C) the research activities address near-term challenges in modeling and simulation to enable accelerated design and licensing of an advanced nuclear reactor;

“(D) related technologies, such as electrochemical processing or fuel recycling that could reduce nuclear waste volumes or half-lives, are developed;

“(E) infrastructure, such as a versatile reactor-based fast neutron source, as described in 42 U.S.C. 16275(c)(1), or molten salt testing facility to aid in research, are constructed;

“(F) basic knowledge in the scientific and engineering community of non-light water coolant physics and chemistry is improved; and

“(G) advanced manufacturing and construction techniques and materials are analyzed to identify strategies to reduce the commercialization cost of advanced nuclear reactors.

“(d) DEFINITIONS.—In this section:

“(1) ADVANCED NUCLEAR REACTOR.—The term ‘advanced nuclear reactor’ means a nuclear fission or fusion reactor, including a prototype plant (as defined in sections 50.2 and 52.1 of title 10, Code of Federal Regulations), with significant improvements compared to commercial nuclear reactors under construction as of the date of enactment of this Act, including improvements to a nuclear reactors such as—

“(A) additional inherent safety features;

“(B) significantly lower levelized cost of electricity;

“(C) lower waste yields;

“(D) greater fuel utilization;

“(E) enhanced reliability;

“(F) increased proliferation resistance;

“(G) increased thermal efficiency;

“(H) reduced consumption of cooling water;

“(I) the ability to integrate into electric applications and nonelectric applications;

“(J) modular sizes to allow for deployment that corresponds with the demand for electricity; or

“(K) operational flexibility to respond to changes in demand for electricity and to complement integration with intermittent renewable energy.

“(2) DEMONSTRATION PROJECT.—The term ‘demonstration project’ means a project carried out under the program established under subsection (b)(1) that —

“(A) includes operation of an advanced nuclear reactor as part of the power generation facilities of an electric utility system; or

“(B) demonstrates the suitability of an advanced nuclear reactor for commercial application.

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

“(1) \$1,000,000,000 for fiscal year 2021;

“(2) \$1,000,000,000 for fiscal year 2022;

“(3) \$1,000,000,000 for fiscal year 2023;

“(4) \$1,000,000,000 for fiscal year 2024; and

“(5) \$1,000,000,000 for fiscal year 2025.

(b) TABLE OF CONTENTS AMENDMENT.—The table of contents of the Energy Policy Act of 2005 (42 U.S.C. 15801 note) is amended by inserting after the item relating to section 639A, as added by this Act, the following:

“Sec. 639B. Advanced nuclear reactor research and development goals.”.

SEC. 308. ADVANCED NUCLEAR FUEL SECURITY PROGRAM.

(a) FINDINGS.—Congress finds that—

(1) the national security nuclear enterprise, which supports the nuclear weapons stockpile stewardship and reactors functions of the National Nuclear Security Administration, requires a domestic fuel cycle, including uranium mining, uranium processing, uranium enrichment, and fuel fabrication, capable of producing low- and high-enriched uranium;

(2) many domestic advanced nuclear power industry participants require access to high-assay, low-enriched uranium fuel for—

(A) initial fuel testing;

(B) operation of demonstration reactors; and

(C) commercial operation of advanced nuclear reactors;

(3) as of the date of enactment of this Act, no domestic uranium enrichment or fuel fabrication capability exists for uranium fuel enriched to greater than 5 weight percent of the uranium-235 isotope;

(4) a healthy commercial nuclear fuel cycle capable of providing higher levels of enriched uranium would benefit—

(A) the relevant national security functions of the National Nuclear Security Administration; and

(B) the domestic advanced nuclear industry of the United States;
and

(5) making limited quantities of high-assay, low-enriched uranium available from Department of Energy stockpiles of uranium would allow for initial fuel testing and demonstration of advanced nuclear reactor concepts, accelerating—

(A) the path to market of those concepts; and

(B) the development of—

(i) a market for advanced nuclear reactors; and

(ii) a resulting growing commercial nuclear fuel cycle capability.

(b) NUCLEAR ENERGY.—

(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 FUEL SECURITY PROGRAM.

“(a) HIGH-ASSAY, LOW-ENRICHED URANIUM PROGRAM FOR ADVANCED NUCLEAR REACTORS.—

“(1) ESTABLISHMENT.—Not later than 1 year after the date of enactment of this section, the Secretary shall establish a program (in this section known as the ‘Program’) to make available high-assay, low-enriched uranium, through contracts for sale, resale, transfer, or lease for use in advanced nuclear reactors.

“(2) NUCLEAR FUEL OWNERSHIP.—Each contract under paragraph (1) shall include a provision that requires that high-assay, low-enriched uranium sold, resold, transferred, or leased under the contract shall remain the property of the Secretary, and that the Secretary shall be responsible for the final disposition of all radioactive waste created by the irradiation, processing, or purification of any sold, resold, transferred, or leased uranium under such contract.

“(3) QUANTITY.—In carrying out the Program, the Secretary shall make available—

“(A) by December 31, 2022, high-assay, low-enriched uranium containing not less than 2 metric tons of the uranium-235 isotope; and

“(B) by December 31, 2025, high-assay, low-enriched uranium containing not less than 10 metric tons of the uranium-235 isotope, which shall include the quantities of the uranium-235 isotope required to be made available under subparagraph (A).

“(4) FACTORS FOR CONSIDERATION.—In carrying out the Program, the Secretary shall take into consideration options for providing high-assay, low-enriched uranium from the stockpile of uranium owned by the Department (including the National Nuclear Security Administration), including—

“(A) fuel that—

“(i) directly meets the needs of an end-user; but

“(ii) has been previously used or fabricated for another purpose;

“(B) fuel that can meet the needs of an end-user after removing 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 (including activities of the National Nuclear Security Administration); and

“(C) fuel from a high-enriched uranium stockpile, which can be blended with lower-assay uranium to become high-assay, low-enriched uranium that meets the needs of a user of the uranium in an advanced nuclear reactor.

“(5) LIMITATION.—The Secretary shall not barter or otherwise sell, resell, transfer uranium in any form in exchange for services relating to the final disposition of radioactive waste from uranium that is the subject of a lease under this section.

“(6) SUNSET.—The Program shall terminate on the earlier of—

“(A) January 1, 2035; and

“(B) the date on which uranium enriched up to, but not equal to, 20 weight percent can be obtained in the commercial market from domestic suppliers, as determined by the Secretary.

“(b) REPORT.—

“(1) IN GENERAL.—Not later than 180 days after the date of enactment of this section, the Secretary shall submit to the Senate Energy and Natural Resources Committee and the House Energy and Commerce Committee a report that—

“(A) describes actions proposed to be carried out by the Secretary under the program established under this section; and

“(B) meets the other requirements of this subsection.

“(2) COORDINATION AND STAKEHOLDER INPUT.—In developing the report required under paragraph (1), the Secretary shall seek input from—

“(A) the Nuclear Regulatory Commission

“(B) the National Laboratories;

“(C) institutions of higher education (as such term is defined in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001(a)));

“(D) a diverse group of entities operating in the nuclear energy industry; and

“(E) a diverse group of technology developers.

“(3) COST AND SCHEDULE ESTIMATES.—The report required under paragraph (1) shall include estimated costs, budgets, and timeframes for enabling the use of high-assay, low-enriched uranium.

“(4) REQUIRED EVALUATIONS.—The report required under paragraph (1) shall evaluate—

“(A) the costs of the actions required to establish and carry out the Program, including with respect to—

“(i) proposed preliminary terms for the sale, resale, transfer, and leasing of high-assay, low-enriched uranium (including guidelines defining the roles and responsibilities of the Department and the purchaser, transfer recipient, or lessee); and

“(ii) the potential to coordinate with purchasers, transfer recipients, and lessees regarding—

“(I) fuel fabrication; and

“(II) fuel transportation;

“(B) the potential sources of uranium and fuel forms available to carry out the Program;

“(C) options to coordinate carrying out the Program with the operation of the versatile, reactor-based fast neutron source under 15 U.S.C. 16275(c)

“(D) the ability of the domestic uranium market to provide materials for advanced nuclear reactor fuel; and

“(E) any associated legal, regulatory, and policy issues that should be addressed to—

“(i) carry out the Program; and

“(ii) enable the establishment of a domestic industry capable of providing high-assay, low-enriched uranium for commercial and noncommercial purposes, including with respect to the needs of—

“(I) the Department;

“(II) the Secretary of Defense; and

“(III) the head of National Nuclear Security Administration.

“(c) DEFINITIONS.—In this section:

“(1) HIGH-ASSAY, LOW-ENRICHED URANIUM.—The term ‘high-assay, low-enriched uranium’ means uranium that is enriched with the uranium-235 isotope in an assay weight that is greater than 5 percent, but less than 20 percent.

“(2) HIGH-ENRICHED URANIUM.—The term ‘high-enriched uranium’ means uranium that is enriched with the uranium-235 isotope in an assay weight of 20 percent or more.”.

(2) TABLE OF CONTENTS.—The table of contents of the Energy Policy Act of 2005 (P. L. 109–58; 119 Stat. 594) is amended—

(A) in the item relating to section 957, by inserting “Sec.” before “957”;

(B) in the item relating to section 958, by inserting “Sec.” before “958”;

(C) in the item relating to section 959, by inserting “Sec.” before “959”; and

(D) by adding after the item relating to section 959, as amended by this paragraph, the following:

“Sec. 959A. Advanced nuclear fuel security program.

SEC. 309. AUTHORIZATION OF APPROPRIATIONS FOR LOAN GUARANTEES FOR ADVANCED NUCLEAR FACILITIES.

(a) IN GENERAL.—Title XVII of the Energy Policy Act of 2005 (42 U.S.C. 16511 et seq.) is amended by adding at the end the following:

“SEC. 1706. AUTHORIZATION OF APPROPRIATIONS FOR LOAN GUARANTEES FOR ADVANCED NUCLEAR FACILITIES.

“There are authorized to be appropriated to the Secretary to make guarantees for advanced nuclear facilities under section 1703(b)(4) \$10,000,000,000 for each of fiscal years 2021 through 2027, to remain available until expended.

(b) TABLE OF CONTENTS.—The table of contents of the Energy Policy Act of 2005 (42 U.S.C. 15801 note) is amended by adding after the item relating to section 1705 the following:

“Sec. 1706. Authorization of appropriations for loan guarantees for advanced nuclear facilities.”.

SEC. 310. EXPANDING THE PRODUCTION TAX CREDIT FOR NUCLEAR POWER.

Section 45 of title 26, United States Code, is amended—

(1) in subsection (a)(1), by striking “1.8 cents” and inserting “2.7 cents”;

(2) in subsection (b)(5)(B)(ii), by striking “6,000 megawatts” and inserting “15,000 megawatts”; and

(3) in subsection (e), by striking paragraph (1) and redesignating paragraphs (2) and (3) as (1) and (2) respectively.

TITLE IV—CLEAN ELECTRICITY STANDARD

SEC. 401. CERTIFICATION OF COST-EFFECTIVE MARKET PENETRATION OF CLEAN ELECTRICITY TECHNOLOGIES.

Title VI of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2601 et seq.) is amended by adding at the end the following:

“SEC. 610. FEDERAL DECARBONIZATION AND INNOVATION ASSESSMENT PROGRAM.

“(a) IN GENERAL.—Not later than 2 years after the date of enactment of this section, the Secretary shall establish a program, to be known as the ‘Federal Decarbonization and Innovation Assessment Program’, to annually review and monitor progress towards the achievement of—

“(1) an 80 percent reduction in annual power sector carbon dioxide emissions, below the level in the year of enactment, by 2050; and

“(2) cost-effective market penetration of advanced clean power generation technologies, in accordance with subsection (b).

“(b) COST-EFFECTIVE MARKET PENETRATION.—Cost-effective market penetration of advanced clean power generation technologies shall be deemed to have occurred on the date when the Secretary determines that—

“(1) at least 3 gigawatts of new electricity generating capacity using any type of eligible technology has come into commercial operation without substantial Federal government subsidy since enactment of this section, provided that at least 1 gigawatt of the new electricity generating capacity using eligible technology is coal-fired electricity generation using carbon capture utilization and storage technology; or

“(2) at least one type of eligible technology has similar operating characteristics, such as dispatchability upon demand and duty cycle, as existing fossil-fueled electricity generation and, based on data provided by the Energy Information Administration, has a total cost of electricity generation that is not more than [10] percent higher than the average total cost of electricity generation from such existing fossil-fueled electricity generation that has been constructed within the 5 years prior to enactment of this section.

“(c) CERTIFICATION OF COST-EFFECTIVE MARKET PENETRATION.—Upon making the determination described under subsection (b), but no earlier than 5 years after enactment of this section, the Secretary shall certify that cost-effective market penetration of advanced clean power generation technologies has occurred.

“(d) DEFINITIONS.—In this section:

“(1) ADVANCED DISPATCHABLE RENEWABLE GENERATION.—The term ‘advanced dispatchable renewable generation means renewable electricity generation capacity that the Secretary has determined can be used upon demand by grid operators, including renewable electricity generation facilities that are supported by long-duration energy storage.

“(2) ADVANCED NUCLEAR POWER GENERATION.—The term ‘advanced nuclear power generation’ means electricity generation capacity using an advanced nuclear reactor, as such term is defined in section 640 of the Energy Policy Act of 2005.

“(3) ELIGIBLE TECHNOLOGIES.—The term ‘eligible technologies’ means the following types of technologies:

“(A) Advanced nuclear power generation.

“(B) Advanced dispatchable renewable generation.

“(C) Fossil-fueled electricity generation equipped with carbon capture technology, from which at least [90%] of carbon dioxide output is captured and utilized or stored in a manner that prevents emission to the atmosphere.

SEC. 402. FEDERAL CLEAN ELECTRICITY STANDARD.

Title VI of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2601 et seq.) is further amended by adding at the end the following:

“SEC. 611. FEDERAL CLEAN ELECTRICITY STANDARD.

“(a) CLEAN ELECTRICITY REQUIREMENT.—

“(1) IN GENERAL.—Effective beginning in the first compliance period of the program, and for each compliance period thereafter, each electric utility shall surrender clean electricity credits corresponding to the required percentage, as determined under paragraph (2), of the electric energy it sells to electric consumers.

“(2) DETERMINATION OF REQUIRED PERCENTAGE.—The Secretary shall determine, and may adjust as needed, the required percentage under paragraph (1) for each compliance period, such that the power sector achieves, by 2050, a reduction in carbon dioxide emissions of 80 percent from emission levels in the year of enactment of this section, and that carbon dioxide emission levels are reduced linearly in each compliance period through 2050, provided that—

“(A) in 2026, the Secretary shall make a projection of the electricity generated in 2030 that would qualify for clean electricity credits under subsection [d];

“(B) the required percentage for the first compliance period shall be the greater of—

“(i) the percentage of electricity generated that would qualify for issuance of clean electricity credits under subsection (d) in the year of enactment of this section; and

“(ii) the Secretary’s projection for 2030 under paragraph (A); and

“(C) the required percentage shall be uniform for each electric utility regulated under this section for any compliance period.

“(b) COMPLIANCE.—An electric utility shall meet the requirements of subsection (a) for each compliance period by—

“(1) submitting to the Secretary a number of clean electricity credits equal to the product of the required percentage for the compliance period times the volume of electric energy the electric utility sold to consumers during the compliance period;

“(2) paying an amount equal to the product of the alternative compliance payment, in the amount specified in subsection (i), times the number of clean electricity credits that would otherwise be due under paragraph (1) in the compliance period; or

“(3) taking a combination of the actions described in paragraphs (1) and (2).

“(c) FEDERAL CLEAN ELECTRICITY CREDIT TRADING PROGRAM.—

“(1) ESTABLISHMENT.—Not later than 180 days after the program trigger date, the Secretary shall establish a Federal clean electricity credit accounting and trading program under which clean electricity credits may be acquired, sold, transferred and held and electric utilities may submit to the Secretary clean electricity credits to comply with the requirements of this section.

“(2) CLEAN ELECTRICITY CREDITS.—Each year, the Secretary shall issue to each generator of electric energy a quantity of clean electricity credits determined in accordance with subsection (d).

“(3) ADMINISTRATION.—Each clean electricity credit issued under this subsection shall be used only once for the purpose of complying with the requirements of this section.

“(4) DELEGATION OF PROGRAM ADMINISTRATION.—In carrying out this subsection, the Secretary may delegate—

“(A) to the Commission, the implementation of some or all of the program established under paragraph (1); and

“(B) to appropriate entities, the tracking of clean electricity credits.

“(5) BANKING OF CLEAN ELECTRICITY CREDITS.—Clean electricity credits issued under subsection (d) shall be valid for the compliance period in which the clean electricity credit is issued or in any subsequent compliance period.

“(d) ISSUANCE OF CLEAN ELECTRICITY CREDITS.—

“(1) IN GENERAL.—For each calendar year, starting with the year of the program effective date, the Secretary shall issue clean electricity credits to each electricity generator in the United States that has sold electricity and has an annual carbon intensity of less than 0.825 metric tons per megawatt-hour.

“(2) DETERMINATION OF CREDITS ISSUED.—The number of clean electricity credits issued under paragraph (1) shall be equal to the product of—

“(A) the number of megawatt-hours of electric energy sold from the electricity generator; and

“(B) 1.0 minus the quotient obtained by dividing—

“(i) the annual carbon intensity of the generator, as determined in accordance with paragraph (3), expressed in metric tons per megawatt-hour; by

“(ii) 0.825.

“(3) DETERMINATION OF ANNUAL CARBON INTENSITY OF GENERATING FACILITIES.— With respect to paragraph (2)(B)(i), the Secretary shall determine, in consultation with the Administrator of the Environmental Protection Agency, the annual carbon intensity of each generator by dividing—

“(A) the net annual carbon dioxide emissions of the generator; by

“(B) the annual quantity of electric energy generated and sold by the generator.

“(e) DYNAMIC CREDITING.—If the Secretary approves use of a dynamic crediting methodology or methodologies under subsection 612(c), the Secretary shall implement such methodology or methodologies in lieu of the crediting methodology established under subsections (d)(2) as a means of issuing clean electricity credits.

“(f) CIVIL PENALTIES.—

“(1) IN GENERAL.—Subject to paragraph (2), an electric utility that fails to meet the requirements to submit clean electricity credits or make alternative compliance payments as required by subsection (b) shall be

subject to a civil penalty in an amount equal to the product obtained of—

“(A) the number of megawatt-hours of electric energy sold by the utility to electric consumers in violation of subsection (b) and

“(B) [200 percent] of the value of the applicable alternative compliance payment as determined under subsection (h).

“(2) PROCEDURE FOR ASSESSING PENALTY.—The Secretary shall assess a civil penalty under this subsection in accordance with the procedures for assessing a penalty against a person under section 333(d) of the Energy Policy and Conservation Act (42 U.S.C. 6303(d)).

“(g) SAVINGS PROVISION.—Nothing in this section affects the authority of a State, or a political subdivision of a State, to adopt or enforce any law relating to—

“(1) clean electricity or renewable energy;

“(2) carbon dioxide emissions; or

“(3) the regulation of an electric utility.

“(h) ALTERNATIVE COMPLIANCE PAYMENT.—

“(1) INITIAL AMOUNT.—The alternative compliance payment for the first year of the first compliance period shall be [\$30 per megawatt hour].

“(2) ANNUAL ADJUSTMENTS TO ALTERNATIVE COMPLIANCE PAYMENT.—For each year after the first year of the first compliance period, the Secretary shall increase the amount of the alternative compliance payment from the amount for the prior year by 5 percent. The Secretary may make an additional annual adjustment to account for inflation, as the Secretary may determine necessary.

“(i) EXCLUSIONS.—This section does not apply to an electric utility located in the State of Alaska or Hawaii, or in a territory of the United States.

“(j) REGULATIONS.—Not later than 1 year after the date of enactment of this section, the Secretary shall promulgate regulations to implement this section.

“(k) DEFINITIONS.—In this section:

“(1) COMPLIANCE PERIOD.—The term ‘compliance period’ means the 3-year period starting on the program effective date and each 3-year period thereafter until 2050.

“(2) PROGRAM TRIGGER DATE.—The term ‘program trigger date’ means January 1 of the first calendar year after the Secretary issues the certification under section 610(c).

“(3) PROGRAM EFFECTIVE DATE.—The term ‘program effective date’ means the earlier of—

“(A) the date that is two years after the program trigger date; or

“(B) January 1 of the first calendar year that is more than 10 years after enactment of this section.”.

“SEC. 612. USE OF DYNAMIC CREDITING TO ISSUE CLEAN ELECTRICITY CREDITS.

“(a) IDENTIFICATION OF DYNAMIC CREDITING METHODOLOGIES.—Not later than 2 years after the date of enactment of this section, the Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall identify methodologies for calculating the carbon dioxide emissions from electricity generating resources that are avoided or displaced by increasing the generation from generating facilities eligible to receive clean electricity credits under section 611(d). In carrying out this subsection, the Secretary shall—

“(1) identify methodologies that estimate in an accurate manner the net carbon dioxide emissions avoided or displaced due to the electricity generated by each specific generating facility in each generation dispatch interval; and

“(2) identify such a methodology or methodologies, as appropriate for generation resources located within the region served by a regional

transmission organization or independent system operator, as defined in 16 U.S.C. 796, and for generation resources operating outside such regions.

“(b) COMMISSION REVIEW OF DYNAMIC CREDITING METHODOLOGIES.—

“(1) The Secretary shall share the identified dynamic crediting methodologies with the Commission.

“(2) Not later than 120 days after its receipt of the dynamic crediting methodologies from the Secretary, the Commission shall hold a technical conference in partnership with State electric utility regulators to evaluate the dynamic crediting methodologies, including evaluation of alternatives.

“(3) Not later than 180 days after the technical conference held pursuant to paragraph (2), and after providing an opportunity for public comment, the Commission shall provide a report to the Secretary on the technical conference and any Commission recommendations or evaluation concerning dynamic crediting methodologies.

“(c) DETERMINATION.—No later than 180 days following receipt of the report provided pursuant to subsection (b)(3), the Secretary shall approve use of one or more identified dynamic crediting methodologies to issue clean electricity credits if the Secretary determines that such use would:

“(1) significantly enhance confidence that a clean electricity standard would achieve the carbon dioxide emission reduction targets set forth in section 611(a)(2); or

“(2) significantly reduce the costs of achieving such targets.

“(d) USE OF DYNAMIC CREDITING METHODOLOGIES.—If the Secretary approves one or more identified dynamic crediting methodologies under subsection (c), the Secretary shall implement the approved methodology to determine the number of clean electricity credits to be issued to an electricity generator in lieu of the methodology provided in 611(d)(2). The Secretary shall apply a dynamic crediting factor approved under subsection (c) for the first full calendar year after such approval, or for the first year of the first compliance period, whichever is later, except that the Secretary may delay use of approved dynamic crediting methodologies by one year if the Secretary finds that additional time is needed for

the Secretary or the Commission to take actions necessary for implementation under subsection (e).

“(e) IMPLEMENTATION.—

“(1) The Secretary may, by rule, require that the regional transmission organizations, independent system operators, other balancing authorities, and other appropriate entities provide the Secretary with the information necessary for the Secretary to apply any approved dynamic crediting methodology.

“(2) At the request of the Secretary, or upon its own initiative, the Commission shall consider whether changes to tariffs on file under section 205 of the Federal Power Act are necessary to implement the requirements of any rule promulgated by the Secretary under paragraph (1).

SEC. 403. REGIONAL CLEAN ELECTRICITY PLANNING MODELS.

(a) DEVELOPMENT OF PLANNING MODELS AND DATA.—Not later than 2 years after the date of enactment of this section, the Secretary shall make available one or more regional electricity planning models and standardized sets of data, including potential renewable energy hourly production profiles at all potential locations for renewable energy deployment, that States can use to develop plans for portfolios of clean electricity resources that are capable of achieving the emission reduction trajectory provided in the clean electricity requirements established under section 402 at least cost and consistent with the need to maintain reliability.

(b) DEVELOPMENT PROCESS.—In making planning models and data available under subsection (a), the Secretary shall:

(1) solicit planning models and standardized, accurate data sets from the national laboratories and universities;

(2) hold jointly with the Commission a technical conference on planning models and standardized data sets, including hourly profiles of renewable energy production at potential deployment locations, and consider the input from such conference in choosing planning models and data sets to make available; and

(3) update the planning models and data sets made available from time to time in response to new information.

(c) USE OF MODELS BY STATES.—The Secretary shall encourage States to use the models and data sets to:

(1) plan collaboratively with other States in the same North American Electric Reliability Corporation reliability region or organized electricity market on least-cost and reliable compliance with the clean electricity standard established under section 402; and

(2) adopt, and from time to time update, multi-state clean electricity resource deployment goals that promote least-cost deployment consistent with maintaining electric reliability.

SEC. 404. STAND-BY EMISSION PERFORMANCE STANDARDS.

(a) ANNUAL REVIEW OF ELECTRIC POWER SECTOR EMISSIONS.—On (or before) February 1 of the first year after enactment of this section, and each February 1 thereafter, the Secretary shall publish a determination of the annual average level of greenhouse gas emissions from the electric power sector for the prior three calendar years.

(b) ENFORCEABILITY.—Performance standards for carbon dioxide emissions from fossil fuel-fired power plants established under section 111 of the Clean Air Act (42 U.S.C. 7411) may be enforced by a State or by the Administrator of the Environmental Protection Agency—

(1) before the clean electricity standard program trigger date, only if—

(A) the Secretary, not earlier than five years after the date of enactment of this Act, determines under subsection (a) that the 3-year annual average level of electric power sector greenhouse gas emissions exceeded the annual average level of such emissions for the preceding 3-year period by at least 15 percent; or

(B) the Secretary finds that significantly less than the full amount of funding authorized for programs under this Act has been

appropriated, resulting in substantial limitation to or delay of the technology advancement program elements of this Act; or

(2) after the end of a clean electricity standard compliance period, if the clean electricity requirement is not enforced for the compliance period.

(c) CLEAN AIR ACT AUTHORITIES.—Except as provided in this section, neither a State nor the Administrator of the Environmental Protection Agency may enforce any standard of performance for carbon dioxide emissions from fossil fuel-fired electric power generating units established under the Clean Air Act (42 U.S.C. 7411).

(d) DEFINITIONS.—In this section:

(1) COMPLIANCE PERIOD.—The term “compliance period” has the meaning given such term in section 611(k)(1) of the Public Utility Regulatory Policies Act of 1978 as added by section 402.

(2) PROGRAM TRIGGER DATE.—The term “program trigger date” has the meaning given such term in section 611(k)(2) of the Public Utility Regulatory Policies Act of 1978 as added by section 402.