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114TH CONGRESS
1ST SESSION

S. 2089

To provide for investment in clean energy, to empower and protect consumers, to modernize energy infrastructure, to cut pollution and waste, to invest in research and development, and for other purposes.

IN THE SENATE OF THE UNITED STATES

SEPTEMBER 28, 2015

Ms. CANTWELL (for herself, Mr. REID, Mr. WYDEN, Mr. DURBIN, Mr. SCHUMER, Ms. STABENOW, Mr. HEINRICH, Mr. FRANKEN, Ms. HIRONO, Ms. WARREN, Mrs. SHAHEEN, Ms. MIKULSKI, Mr. COONS, Mr. BENNET, Mr. MURPHY, Mr. MARKEY, Mrs. FEINSTEIN, Mr. BLUMENTHAL, Mr. PETERS, Mr. SCHATZ, Mr. REED, Mrs. MURRAY, Mr. CARDIN, Mr. CARPER, Mr. KING, Mr. MERKLEY, Mr. BOOKER, Mrs. BOXER, Ms. KLOBUCHAR, and Mrs. GILIBRAND) introduced the following bill; which was read the first time

SEPTEMBER 29, 2015

Read the second time and placed on the calendar

A BILL

To provide for investment in clean energy, to empower and protect consumers, to modernize energy infrastructure, to cut pollution and waste, to invest in research and development, and for other purposes.

1. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,
SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the “American Energy Innovation Act”.

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

Sec. 1. Short title; table of contents.
Sec. 2. Definitions.

TITLE I—EMPOWERING AND PROTECTING CONSUMERS

Subtitle A—Access to Consumer Energy Information

Sec. 1001. Consumer access to electric energy information.

Subtitle B—Unfair Trade Practices Prohibition in Distributed Generation

Sec. 1011. Investigation of distributed generation.

Subtitle C—Enhanced Grid Security

Sec. 1021. Cybersecurity threats.
Sec. 1022. Enhanced grid security.

Subtitle D—Capacity Markets Study

Sec. 1031. GAO capacity market impact study.

Subtitle E—Severe Coal Supply Emergency Response

Sec. 1041. Severe coal supply emergency response.

Subtitle F—Energy Markets

Sec. 1051. Enhanced information on critical energy supplies.
Sec. 1053. Study of regulatory framework for energy markets.

Subtitle G—Transmission

Sec. 1061. Report by transmission organizations on distributed energy resources and microgrid systems.
Sec. 1062. Net metering study guidance.

TITLE II—MODERNIZING INFRASTRUCTURE

Subtitle A—QER Recommendations

Sec. 2001. Natural gas distribution system improvement program.
Sec. 2002. Strategy for managing the risks associated with the loss or disruption of power from large power transformers.
Subtitle B—Grid Modernization and Storage

Sec. 2011. Definition of Secretary.
Sec. 2012. Grid storage program.
Sec. 2013. Technology demonstration and the distribution system.
Sec. 2014. Microgrid systems for isolated and resilient communities.
Sec. 2015. Electric system grid architecture, scenario development, and modeling.
Sec. 2016. Voluntary model pathways.
Sec. 2017. Performance metrics for electricity infrastructure providers.
Sec. 2018. State and regional distribution planning.

Subtitle C—Advanced Manufacturing

Sec. 2024. Leveraging existing agency programs to assist small and medium manufacturers.
Sec. 2025. Advanced Manufacturing Innovation Hubs.
Sec. 2026. Advanced Materials Prize Competition Pilot Program.
Sec. 2027. Pilot program with original equipment manufacturers and public utilities.

Subtitle D—Building Better Trucks

Sec. 2031. Advanced technology vehicles manufacturing incentive program.

Subtitle E—Vehicle Innovation

Sec. 2041. Findings.
Sec. 2042. Objectives.
Sec. 2043. Vehicle research and development program.
Sec. 2044. Medium- and heavy-duty commercial and transit vehicles program.
Sec. 2045. Authorization of appropriations.

Subtitle F—Carbon Fiber Recycling

Sec. 2051. Recycled carbon fiber study.
Sec. 2052. Carbon fiber recycling demonstration project.
Sec. 2053. Authorization of appropriations.

Subtitle G—Job Creation Through Energy Efficient Manufacturing

Sec. 2061. Purpose.
Sec. 2062. Definitions.
Sec. 2063. Financing Energy Efficient Manufacturing Program.
Sec. 2064. Authorization of appropriations.

Subtitle H—21st Century Energy Workforce

Sec. 2101. Findings.
Sec. 2102. Definitions.
Sec. 2103. National Center of Excellence for the 21st Century Workforce.
Sec. 2104. Energy workforce pilot grant program.
Subtitle I—Solar Installations

Sec. 2111. Loan and grant program for solar installations in low-income and underserved areas.

Subtitle J—Local Energy Supply and Resiliency Act

Sec. 2121. Definitions.
Sec. 2122. Distributed energy loan program.
Sec. 2123. Technical assistance and grant program.

Subtitle K—Geothermal Energy Opportunities

Sec. 2131. National goals for production and site identification.
Sec. 2132. Priority areas for development on Federal land.
Sec. 2133. Facilitation of coproduction of geothermal energy on oil and gas leases.
Sec. 2134. Cost-shared exploration.
Sec. 2135. Use of geothermal lease revenues.
Sec. 2136. Noncompetitive leasing of adjoining areas for development of geothermal resources.
Sec. 2137. Large-scale geothermal energy.
Sec. 2138. Report to Congress.
Sec. 2139. Authorization of appropriations.

Subtitle L—Clean Coal Technology Research

Sec. 2141. Fossil energy.

Subtitle M—Long-term Contracts

Sec. 2151. Contracts for Federal purchases of energy.

Subtitle N—Promoting Renewable Energy With Shared Solar

Sec. 2161. Provision of interconnection service and net billing service for community solar facilities.

Subtitle O—Report on Low- and No-Carbon Energy Technologies

Sec. 2171. Report.

Subtitle P—Loan Programs

Sec. 2181. Terms and conditions for incentives for innovative technologies.
Sec. 2182. State loan eligibility.

TITLE III—CUTTING POLLUTION AND WASTE

Subtitle A—Carbon Savings Goal

Sec. 3001. Policy of United States on addressing climate change.

Subtitle B—American Energy Efficiency

Sec. 3011. Energy efficiency resource standard for retail electricity and natural gas suppliers.

Subtitle C—Energy Efficiency Retrofit Program
Sec. 3021. Energy efficiency retrofit pilot program.

Subtitle D—Weatherization Enhancement and Local Energy Efficiency Investment and Accountability

Sec. 3031. Findings.
Sec. 3032. Reauthorization of Weatherization Assistance Program.
Sec. 3033. Grants for new, self-sustaining low-income, single-family, and multi-family housing energy retrofit model programs to eligible multi-State housing and energy nonprofit organizations.
Sec. 3034. Standards program.
Sec. 3035. Reauthorization of State energy program.

Subtitle E—Utility Energy Service Contracts Improvement

Sec. 3041. Findings.
Sec. 3042. Utility energy service contracts.

Subtitle F—State Residential Building Energy Efficiency Loan Pilot Program

Sec. 3051. State residential building energy efficiency upgrades loan pilot program.

Subtitle G—Smart Energy and Water Efficiency

Sec. 3061. Smart energy and water efficiency pilot program.

Subtitle H—Regional Energy Partnerships

Sec. 3071. Definitions.
Sec. 3072. Regional energy partnerships.
Sec. 3073. Authorization of appropriations.

Subtitle I—Energy Productivity Innovation Challenge

Sec. 3081. Definitions.
Sec. 3082. Phase 1: Initial allocation of grants to States.
Sec. 3083. Phase 2: Subsequent allocation of grants to States.
Sec. 3084. Allocation of grants to Indian tribes.
Sec. 3085. Administration.
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Subtitle J—Smart Buildings

Sec. 3091. Definitions.

Subtitle K—Energy Study

Sec. 3101. Energy information study.
Sec. 3102. Grants to utilities.
Sec. 3103. Grants to States and units of local government.
Sec. 3104. Input From Stakeholders.
Sec. 3105. Report.

Subtitle L—Alternative Fueled Vehicles

Sec. 3111. Alternative fueled vehicle fleets and infrastructure.

Subtitle M—Outer Continental Shelf
Sec. 3121. Repeal of outer Continental Shelf deep water and deep gas royalty relief.
Sec. 3122. Disposition of qualified outer Continental Shelf revenues from 181 Area, 181 South Area, and 2002–2007 planning areas of Gulf of Mexico.

Subtitle N—Venting and Flaring of Gas
Sec. 3131. Regulations to prevent or minimize venting and flaring of gas.
Sec. 3132. Assessment of venting and flaring of gas in production operations in United States.
Sec. 3133. Regulations.

Subtitle O—Production Incentive Fee
Sec. 3141. Production incentive fee.

Subtitle P—Reauthorization of Desalination Act
Sec. 3151. Reauthorization of Desalination Act.
Sec. 3152. Promoting water efficiency with WaterSense.
Sec. 3153. Increasing opportunities for agricultural conservation.
Sec. 3154. Support for innovative water supply and conservation technologies.

TITLE IV—INVESTING IN RESEARCH AND DEVELOPMENT
Sec. 4001. Basic research.

TITLE V—INVESTING IN CLEAN ENERGY
Sec. 5001. Amendment of 1986 Code.

Subtitle A—Clean Energy Tax Credits
Sec. 5011. Clean energy production credit.
Sec. 5012. Clean energy investment credit.
Sec. 5013. Extensions and modifications of various energy provisions.

Subtitle B—Clean Fuel Tax Credits
Sec. 5021. Clean fuel production credit.
Sec. 5022. Temporary extension of existing fuel incentives.

Subtitle C—Energy Efficiency Incentives
Sec. 5031. Credit for new energy efficient residential buildings.
Sec. 5032. Energy efficiency credit for existing residential buildings.
Sec. 5033. Deduction for new energy efficient commercial buildings.
Sec. 5034. Energy efficiency deduction for existing commercial buildings.

Subtitle D—Clean Electricity and Fuel Bonds
Sec. 5041. Clean Energy Bonds.

Subtitle E—Treatment of Tar Sands Under Excise Taxes
Sec. 5051. Clarification of tar sands as crude oil for excise tax purposes.

Subtitle F—Closing Big Oil Tax Loopholes
Sec. 5061. Modifications of foreign tax credit rules applicable to major integrated oil companies which are dual capacity taxpayers.

Sec. 5062. Limitation on section 199 deduction attributable to oil, natural gas, or primary products thereof.

Sec. 5063. Limitation on deduction for intangible drilling and development costs; amortization of disallowed amounts.

Sec. 5064. Limitation on percentage depletion allowance for oil and gas wells.

Sec. 5065. Limitation on deduction for tertiary injectants.

TITLE VI—CONSERVATION REAUTHORIZATION

Sec. 6001. National Park Service Centennial Fund.

Sec. 6002. Land and Water Conservation Fund.

Sec. 6003. Historic preservation fund.

SEC. 2. DEFINITIONS.

In this Act:

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

(2) SECRETARY.—Except as otherwise provided in this Act, the term “Secretary” means the Secretary of Energy.

TITLE I—EMPOWERING AND PROTECTING CONSUMERS

Subtitle A—Access to Consumer Energy Information

SEC. 1001. CONSUMER ACCESS TO ELECTRIC ENERGY INFORMATION.

(a) IN GENERAL.—The Secretary shall encourage and support the adoption of policies that allow electricity consumers access to their own electricity data.

(b) ELIGIBILITY FOR STATE ENERGY PLANS.—Section 362(d) of the Energy Policy and Conservation Act (42 U.S.C. 6322(d)) is amended—
(1) in paragraph (16), by striking “and” after the semicolon at the end;

(2) by redesignating paragraph (17) as paragraph (18); and

(3) by inserting after paragraph (16) the following:

“(17) programs—

“(A) to enhance consumer access to and understanding of energy usage and price information, including consumers’ own residential and commercial electricity information; and

“(B) to allow for the development and adoption of innovative products and services to assist consumers in managing energy consumption and expenditures; and”.

(e) Voluntary Guidelines for Electric Consumer Access.—

(1) Definitions.—In this subsection:

(A) Retail Electric Energy Information.—The term “retail electric energy information” means—

(i) the electric energy consumption of an electric consumer over a defined time period;
(ii) the retail electric energy prices or rates applied to the electricity usage for the defined time period described in clause (i) for the electric consumer;

(iii) the estimated cost of service by the consumer, including (if smart meter usage information is available) the estimated cost of service since the last billing cycle of the consumer; and

(iv) in the case of nonresidential electric meters, any other electrical information that the meter is programmed to record (such as demand measured in kilowatts, voltage, frequency, current, and power factor).

(B) SMART METER.—The term “smart meter” means the device used by an electric utility that—

(i)(I) measures electric energy consumption by an electric consumer at the home or facility of the electric consumer in intervals of 1 hour or less; and

(II) is capable of sending electric energy usage information through a communications network to the electric utility; or
(ii) meets the guidelines issued under paragraph (2).

(2) VOLUNTARY GUIDELINES FOR ELECTRIC CONSUMER ACCESS.—

(A) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, subject to subparagraph (B), the Secretary shall issue voluntary guidelines that establish model standards for implementation of retail electric energy information access in States.

(B) CONSULTATION.—Before issuing the voluntary guidelines, the Secretary shall—

(i) consult with—

(I) State and local regulatory authorities, including the National Association of Regulatory Utility Commissioners;

(II) other appropriate Federal agencies, including the National Institute of Standards and Technology;

(III) consumer and privacy advocacy groups;

(IV) utilities;

(V) the National Association of State Energy Officials; and
(VI) other appropriate entities, including groups representing commercial and residential building owners and groups that represent demand response and electricity data devices and services; and

(ii) provide notice and opportunity for comment.

(C) State and local regulatory action.—In issuing the voluntary guidelines, the Secretary shall, to the maximum extent practicable, be guided by actions taken by State and local regulatory authorities to ensure electric consumer access to retail electric energy information, including actions taken after consideration of the standard established under section 111(d)(17) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)(17)).

(D) Contents.—

(i) In general.—The voluntary guidelines shall provide guidance on issues necessary to carry out this subsection, including—

(1) the timeliness and specificity of retail electric energy information;
(II) appropriate nationally recognized open standards for data;

(III) the protection of data security and electric consumer privacy, including consumer consent requirements; and

(IV) issues relating to access of electric energy information for owners and managers of multitenant commercial and residential buildings.

(ii) INCLUSIONS.—The voluntary guidelines shall include guidance that—

(I) retail electric energy information should be made available to electric consumers (and third-party designees of the electric consumers) in the United States—

(aa) in an electronic machine readable form, without additional charge, in conformity with standards developed through a voluntary, consensus-based, multistakeholder process;

(bb) as timely as is reasonably practicable;
(cc) at the level of specificity
that the data is transmitted by
the meter or as is reasonably
practicable; and
(dd) in a manner that pro-
vides adequate protections for the
security of the information and
the privacy of the electric con-
sumer;

(II) in the case of an electric con-
sumer that is served by a smart meter
that can also communicate energy
usage information to a device or net-
work of an electric consumer or a de-
vice or network of a third party au-
thorized by the consumer, considers
providing to the consumer or third-
party designee, at a minimum, access
to usage information (not including
price information) of the consumer di-
rectly from the smart meter;

(III) retail electric energy infor-
mation should be provided by the elec-
tric utility of the consumer or such
other entity as may be designated by
the applicable electric retail regulatory authority;

(IV) retail electric energy information of the consumer should be made available to the consumer through a website or other electronic access authorized by the electric consumer, for a period of at least 13 months after the date on which the usage occurred;

(V) consumer access to data, including data provided to owners and managers of commercial and multi-family buildings with multiple tenants, should not interfere with or compromise the integrity, security, or privacy of the operations of a utility and the electric consumer;

(VI) electric energy information relating to usage information generated by devices in or on the property of the consumer that is transmitted to the electric utility should be made available to the electric con-
sumer or the third-party agent designated by the electric consumer; and

(VII) the same privacy and security requirements applicable to the contracting utility under subclause (I)(dd) should apply to third-party agents contracting with a utility to process the customer data of that utility.

(E) Revisions.—The Secretary shall periodically review and, as necessary, revise the voluntary guidelines to reflect changes in technology, privacy needs, and the market for electric energy and services.

(d) Verification and Implementation.—

(1) In General.—A State may submit to the Secretary a description of the data sharing policies of the State relating to consumer access to electric energy information for certification by the Secretary that the policies meet the voluntary guidelines issued under subsection (c)(2).

(2) Assistance.—Subject to the availability of funds under paragraph (3), the Secretary shall make Federal amounts available to any State that has data sharing policies described in paragraph (1) that
the Secretary certifies meets the voluntary guidelines issued under subsection (e)(2) to assist the State in implementing section 362(d)(17) of the Energy Policy and Conservation Act (42 U.S.C. 6322(d)(17)).

(3) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection $10,000,000 for fiscal year 2016, to remain available until expended.

Subtitle B—Unfair Trade Practices
Prohibition in Distributed Generation

SEC. 1011. INVESTIGATION OF DISTRIBUTED GENERATION.

(a) DEFINITIONS.—In this section:

(1) DISTRIBUTED GENERATION.—The term “distributed generation” means the generation of electric energy for use at or near the point of generation.

(2) ELECTRIC CONSUMER.—The term “electric consumer” means any person to whom electric energy is sold for purposes other than resale.

(3) ELECTRIC UTILITY.—The term “electric utility” means any person that sells electric energy.

(4) INTERCONNECTION PRACTICE.—The term “interconnection practice” means any rate, charge,
fee, requirement, or contractual term required by an electric utility—

(A) to connect a distributed energy facility owned or operated by an electric consumer to facilities of the electric utility;

(B) to purchase from an electric consumer electric energy generated by a distributed generation facility; or

(C) to sell electric energy to an electric consumer that owns or operates a distributed generation facility.

(b) INVESTIGATION.—The Federal Trade Commission shall conduct an investigation to determine the extent to which interconnection practices impede the use of distributed generation.

(c) REPORT.—On completion of the investigation under subsection (b), the Federal Trade Commission shall—

(1) identify any interconnection practice that substantially injures electric consumers and violates public policies promoting the development of distributed generation;

(2) determine whether any interconnection practice identified under paragraph (1) is an unfair act or practice in or affecting commerce in violation
of section 5 of the Federal Trade Commission Act (15 U.S.C. 45); and

(3) report to Congress the findings and conclusions of the investigation (including the determinations under paragraphs (1) and (2)) and any recommendations for additional legislation that the Commission determines is needed to remove unfair impediments to the development of distributed generation.

Subtitle C—Enhanced Grid Security

SEC. 1021. CYBERSECURITY THREATS.

Part II of the Federal Power Act (16 U.S.C. 824 et seq.) is amended by adding at the end the following:

"SEC. 224. CYBERSECURITY THREATS.

"(a) DEFINITIONS.—In this section:

"(1) BULK-POWER SYSTEM.—The term ‘bulk-power system’ has the meaning given the term in section 215.

"(2) CYBERSECURITY THREAT.—The term ‘cybersecurity threat’ means the imminent danger of an act that severely disrupts, attempts to severely disrupt, or poses a significant risk of severely disrupting the operation of programmable electronic devices or communications networks (including hard-
ware, software, and data) essential to the reliable
operation of the bulk-power system.

“(3) ELECTRIC RELIABILITY ORGANIZATION.—
The term ‘Electric Reliability Organization’ has the
meaning given the term in section 215.

“(4) SECRETARY.—The term ‘Secretary’ means
the Secretary of Energy.

“(b) EMERGENCY AUTHORITY OF SECRETARY.—

“(1) IN GENERAL.—If the President notifies
the Secretary that the President has made a deter-
mination that immediate action is necessary to pro-
tect the bulk-power system from a cybersecurity
threat, the Secretary may require, by order and with
or without notice, any entity that is registered with
the Electric Reliability Organization as an owner,
operator, or user of the bulk-power system to take
such actions as the Secretary determines will best
avert or mitigate the cybersecurity threat.

“(2) WRITTEN EXPLANATION.—As soon as
practicable after notifying the Secretary under para-
graph (1), the President shall—

“(A) provide to the Secretary, in writing,
a record of the determination and an expla-
nation of the reasons for the determination; and
“(B) promptly notify, in writing, congres-
sional committees of relevant jurisdiction, in-
cluding the Committee on Energy and Natural
Resources of the Senate and the Committee on
Energy and Commerce of the House of Rep-
resentatives, of the contents of, and justification
for, the directive or determination.

“(3) COORDINATION WITH CANADA AND MEX-
ICO.—In exercising the authority pursuant to this
subsection, the Secretary is encouraged to consult
and coordinate with the appropriate officials in Can-
da and Mexico responsible for the protection of cy-
bersecurity of the interconnected North American
electricity grid.

“(4) CONSULTATION.—Before exercising au-
thority pursuant to this subsection, to the maximum
extent practicable, taking into consideration the na-
ture of an identified cybersecurity threat and the ur-
gency of need for action, the Secretary shall consult
regarding implementation of actions that will effec-
tively address the cybersecurity threat with—

“(A) any entities potentially subject to the
cybersecurity threat that own, control, or oper-
ate bulk-power system facilities;

“(B) the Electric Reliability Organization;
“(C) the Electricity Sub-sector Coordinating Council (as established by the Electric Reliability Organization); and

“(D) officials of other Federal departments and agencies, as appropriate.

“(5) COST RECOVERY.—

“(A) IN GENERAL.—The Commission shall adopt regulations that permit entities subject to an order under paragraph (1) to seek recovery of prudently incurred costs required to implement actions ordered by the Secretary under this subsection.

“(B) REQUIREMENTS.—Any rate or charge approved under regulations adopted pursuant to this paragraph—

“(i) shall be just and reasonable; and

“(ii) shall not be unduly discriminatory or preferential.

“(c) DURATION OF EMERGENCY ORDERS.—An order issued by the Secretary pursuant to subsection (b) shall remain in effect for not longer than the 30-day period beginning on the effective date of the order, unless, during that 30 day-period, the Secretary—
“(1) provides to interested persons an opportunity to submit written data, recommendations, and arguments; and

“(2) affirms, amends, or repeals the order, subject to the condition that an amended order shall not exceed a total duration of 90 days.”.

SEC. 1022. ENHANCED GRID SECURITY.

(a) DEFINITIONS.—In this section:

(1) ELECTRIC UTILITY.—The term “electric utility” has the meaning given the term in section 3 of the Federal Power Act (16 U.S.C. 796).

(2) ES-ISAC.—The term “ES-ISAC” means the Electricity Sector Information Sharing and Analysis Center.

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

(4) SECTOR-SPECIFIC AGENCY.—The term “Sector-Specific Agency” has the meaning given the term in the Presidential policy directive entitled “Critical Infrastructure Security and Resilience”, numbered 21, and dated February 12, 2013.

(b) SECTOR-SPECIFIC AGENCY FOR CYBERSECURITY FOR THE ENERGY SECTOR.—
(1) IN GENERAL.—The Department shall be the lead Sector-Specific Agency for cybersecurity for the energy sector.

(2) DUTIES.—As the designated Sector-Specific Agency for cybersecurity, the duties of the Department shall include—

(A) coordinating with the Department of Homeland Security and other relevant Federal departments and agencies;

(B) collaborating with—

(i) critical infrastructure owners and operators; and

(ii) as appropriate—

(I) independent regulatory agencies; and

(II) State, local, tribal and territorial entities;

(C) serving as a day-to-day Federal interface for the dynamic prioritization and coordination of sector-specific activities;

(D) carrying out incident management responsibilities consistent with applicable law (including regulations) and other appropriate policies or directives;
(E) providing, supporting, or facilitating technical assistance and consultations for the energy sector to identify vulnerabilities and help mitigate incidents, as appropriate; and

(F) supporting the reporting requirements of the Department of Homeland Security under applicable law by providing, on an annual basis, sector-specific critical infrastructure information.

(c) Cybersecurity for the Energy Sector Research, Development, and Demonstration Program.—

(1) In general.—The Secretary, in consultation with appropriate Federal agencies, the energy sector, the States, and other stakeholders, shall carry out a program—

(A) to develop advanced cybersecurity applications and technologies for the energy sector—

(i) to identify and mitigate vulnerabilities, including—

(I) dependencies on other critical infrastructure; and

(II) impacts from weather and fuel supply; and
(ii) to advance the security of field devices, third-party control systems, and applications, including—

(I) systems for generation, transmission, distribution, end use, and market functions;

(II) specific electric grid elements including advanced metering, demand response, distributed generation, and electricity storage;

(III) forensic analysis of infected systems; and

(IV) secure communications;

(B) to leverage electric grid architecture as a means to assess risks to the energy sector, including by implementing an all-hazards approach to communications infrastructure, control systems architecture, and power systems architecture;

(C) to perform pilot demonstration projects with the energy sector to gain experience with new technologies; and

(D) to develop workforce development curricula for energy sector-related cybersecurity.
(2) Authorization of Appropriations.—

There is authorized to be appropriated to carry out this subsection $65,000,000 for each of fiscal years 2017 through 2025.

(d) Energy Sector Component Testing for Cyberresilience Program.—

(1) In General.—The Secretary shall carry out a program—

(A) to establish a cybertesting and mitigation program to identify vulnerabilities of energy sector supply chain products to known threats;

(B) to oversee third-party cybertesting; and

(C) to develop procurement guidelines for energy sector supply chain components.

(2) Authorization of Appropriations.—

There is authorized to be appropriated to carry out this subsection $15,000,000 for each of fiscal years 2017 through 2025.

(e) Energy Sector Operational Support for Cyberresilience Program.—

(1) In General.—The Secretary may carry out a program—

(A) to enhance and periodically test—
(i) the emergency response capabilities of the Department; and

(ii) the coordination of the Department with other agencies, the National Laboratories, and private industry;

(B) to expand cooperation of the Department with the public sector and intelligence communities for energy sector-related threat collection and analysis;

(C) to enhance the tools of the Department and ES-ISAC for monitoring the status of the energy sector;

(D) to expand industry participation in ES-ISAC; and

(E) to provide technical assistance to small electric utilities for purposes of assessing cyermaturity level.

(2) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection $10,000,000 for each of fiscal years 2017 through 2025.

(f) MODELING AND ASSESSING ENERGY INFRASTRUCTURE RISK.—

(1) IN GENERAL.—The Secretary shall develop an advanced energy security program to secure en-
ergy networks and applications, including electric, natural gas, and oil exploration, transmission, and delivery.

(2) Security and resiliency objective.—The objective of the program developed under paragraph (1) is to increase the functional preservation of the electric grid operations or natural gas and oil operations in the face of natural and human-made threats and hazards, including electric magnetic pulse and geomagnetic disturbances.

(3) Eligible activities.—In carrying out the program developed under paragraph (1), the Secretary may—

(A) develop capabilities to identify vulnerabilities and critical components that pose major risks to grid security if destroyed or impaired;

(B) provide modeling at the national level to predict impacts from natural or human-made events;

(C) develop a maturity model for physical security and cybersecurity;

(D) conduct exercises and assessments to identify and mitigate vulnerabilities to the elec-
tric grid, including providing mitigation recommendations;

(E) conduct research hardening solutions for critical components of the electric grid;

(F) conduct research mitigation and recovery solutions for critical components of the electric grid; and

(G) provide technical assistance to States and other entities for standards and risk analysis.

(4) Authorization of Appropriations.—There is authorized to be appropriated to carry out this subsection $10,000,000 for each of fiscal years 2017 through 2025.

(g) Leveraging Existing Programs.—The programs established under this section shall be carried out consistent with—

(1) the report of the Department entitled “Roadmap to Achieve Energy Delivery Systems Cybersecurity” and dated 2011;

(2) existing programs of the Department; and

(3) any associated strategic framework that links together academic and National Laboratory researchers, electric utilities, manufacturers, and any
other relevant private industry organizations, including the Electricity Sub-sector Coordinating Council.

(h) Study.—

(1) In General.—Not later than 180 days after the date of enactment of this Act, the Secretary, in consultation with the Federal Energy Regulatory Commission and the North American Electric Reliability Corporation, shall conduct a study to explore alternative management structures and funding mechanisms to expand industry membership and participation in ES-ISAC.

(2) Report.—The Secretary shall submit to the appropriate committees of Congress a report describing the results of the study conducted under paragraph (1).

Subtitle D—Capacity Markets Study

SEC. 1031. GAO Capacity Market Impact Study.

Not later than 180 days after the date of enactment of this Act, the Comptroller General of the United States shall—

(1) conduct a study of the effects of forward capacity auctions or other capacity mechanisms that have been established by Independent System Operators or Regional Transmission Organizations on—
(A) consumer prices for electricity;
(B) the installation of new electrical generation systems;
(C) the preservation of existing electrical generation systems; and
(D) competition in energy markets, including the potential for the use of undue market power or manipulation in the auctions; and
(2) submit to the appropriate committees of Congress a report describing the results of the study conducted under paragraph (1), including an assessment of whether the auctions or capacity mechanisms are producing rates that are just and reasonable.

Subtitle E—Severe Coal Supply Emergency Response

SEC. 1041. SEVERE COAL SUPPLY EMERGENCY RESPONSE.

(a) Definitions.—In this section:
(1) Board.—The term “Board” means the Surface Transportation Board.
(2) Electric Reliability Organization.—The term “Electric Reliability Organization” has the meaning given the term in section 215 of the Federal Power Act (16 U.S.C. 824o).
(3) FORM OE-417.—The term “Form OE-417” means the form entitled “Electric Emergency Incident and Disturbance Report” (or a successor form) and filed in accordance with the Federal Energy Administration Act of 1974 (15 U.S.C. 761 et seq.).

(4) SEVERE COAL SUPPLY EMERGENCY.—The term “severe coal supply emergency” means a coal supply deficiency reported to the Department on Form OE-417.

(b) COORDINATION AND REPORT.—

(1) REPORTING DUTY.—On the filing of a Form OE-417 that reports a severe coal supply emergency, the Secretary shall notify the Board and the Federal Energy Regulatory Commission.

(2) CONSULTATION AND COORDINATION.—The Secretary, the Board, the Federal Energy Regulatory Commission, and, as appropriate, the Electric Reliability Organization, shall, to the maximum extent practicable, consult and coordinate with each other to alleviate and prevent recurrences of a severe coal supply emergency.

(3) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary, in consultation with the Board, the Commission, and, as appropriate, the Electric Reliability Organization,
shall submit a report to Congress that analyzes and includes recommendations with respect to—

(A) the effects of rail congestion on the flow of energy commodities such as coal;

(B) the effects of rail congestion on the reliability of the bulk-power system (as that term is defined in section 215 of the Federal Power Act (16 U.S.C. 824o));

(C) the advisability of creating a minimum coal stockpile requirement; and

(D) other appropriate measures that could prevent the development or recurrence of severe coal supply emergencies.

Subtitle F—Energy Markets

SEC. 1051. ENHANCED INFORMATION ON CRITICAL ENERGY SUPPLIES.

(a) In General.—Section 205 of the Department of Energy Organization Act (42 U.S.C. 7135) is amended by adding at the end the following:

“(n) Collection of Information on Critical Energy Supplies.—

“(1) In General.—To ensure transparency of information relating to energy infrastructure and product ownership in the United States and improve the ability to evaluate the energy security of the
United States, the Administrator, in consultation with other Federal agencies (as necessary), shall—

"(A) not later than 120 days after the date of enactment of this subsection, develop and provide notice of a plan to collect, in cooperation with the Commodity Futures Trade Commission, information identifying all oil inventories, and other physical oil assets (including all petroleum-based products and the storage of such products in off-shore tankers), that are owned by the 50 largest traders of oil contracts (including derivative contracts), as determined by the Commodity Futures Trade Commission; and

"(B) not later than 90 days after the date on which notice is provided under subparagraph (A), implement the plan described in that subparagraph.

"(2) INFORMATION.—The plan required under paragraph (1) shall include a description of the plan of the Administrator for collecting company-specific data, including—

"(A) volumes of product under ownership; and
“(B) storage and transportation capacity
(including owned and leased capacity).

“(3) Protection of Proprietary Information.—Section 12(f) of the Federal Energy Admin-
istration Act of 1974 (15 U.S.C. 771(f)) shall apply
to information collected under this subsection.

“(o) Collection of Information on Storage
Capacity for Oil and Natural Gas.—

“(1) In General.—Not later than 90 days
after the date of enactment of this subsection, the
Administrator of the Energy Information Adminis-
tration shall collect information quantifying the com-
mmercial storage capacity for oil and natural gas in
the United States.

“(2) Updates.—The Administrator shall up-
date annually the information required under para-
graph (1).

“(3) Protection of Proprietary Information.—Section 12(f) of the Federal Energy Admin-
istration Act of 1974 (15 U.S.C. 771(f)) shall apply
to information collected under this subsection.

“(p) Financial Market Analysis Office.—

“(1) Establishment.—There shall be within
the Energy Information Administration a Financial
Market Analysis Office, headed by a director, who
shall report directly to the Administrator of the Energy Information Administration.

“(2) DUTIES.—The Office shall—

“(A) be responsible for analysis of the financial aspects of energy markets;

“(B) review the reports required by section 1053(c) of the American Energy Innovation Act, in advance of the submission of the reports to Congress; and

“(C) not later than 1 year after the date of enactment of this subsection—

“(i) make recommendations to the Administrator of the Energy Information Administration that identify and quantify any additional resources that are required to improve the ability of the Energy Information Administration to more fully integrate financial market information into the analyses and forecasts of the Energy Information Administration, including the role of energy futures contracts, energy commodity swaps, and derivatives in price formation for oil;

“(ii) conduct a review of implications of policy changes and changes in how
crude oil and refined petroleum products are transported with respect to price formation of crude oil and refined petroleum products; and

“(iii) notify the Committee on Energy and Natural Resources, and the Committee on Appropriations, of the Senate and the Committee on Energy and Commerce, and the Committee on Appropriations, of the House of Representatives of the recommendations described in clause (i).

“(3) ANALYSES.—The Administrator of the Energy Information Administration shall take analyses by the Office into account in conducting analyses and forecasting of energy prices.”.


SEC. 1052. WORKING GROUP ON ENERGY MARKETS.

(a) ESTABLISHMENT.—There is established a Working Group on Energy Markets (referred to in this subtitle as the “Working Group”).
(b) COMPOSITION.—The Working Group shall be composed of—

(1) the Secretary;
(2) the Secretary of the Treasury;
(3) the Chairman of the Federal Energy Regulatory Commission;
(4) the Chairman of Federal Trade Commission;
(5) the Chairman of the Securities and Exchange Commission;
(6) the Chairman of the Commodity Futures Trading Commission; and
(7) the Administrator of the Energy Information Administration.

(c) CHAIRPERSON.—The Secretary shall serve as the Chairperson of the Working Group.

(d) COMPENSATION.—A member of the Working Group shall serve without additional compensation for the work of the member of the Working Group.

(e) PURPOSE AND FUNCTION.—The Working Group shall—

(1) investigate the effect of increased financial investment in energy commodities on energy prices and the energy security of the United States;
(2) recommend to the President and Congress laws (including regulations) that may be needed to prevent excessive speculation in energy commodity markets in order to prevent or minimize the adverse impact of excessive speculation on energy prices on consumers and the economy of the United States; and

(3) review energy security implications of developments in international energy markets.

(f) Administration.—The Secretary shall provide the Working Group with such administrative and support services as may be necessary for the performance of the functions of the Working Group.

(g) Cooperation of Other Agencies.—The heads of Executive departments, agencies, and independent instrumentalities shall, to the extent permitted by law, provide the Working Group with such information as the Working Group requires to carry out this section.

(h) Consultation.—The Working Group shall consult, as appropriate, with representatives of the various exchanges, clearinghouses, self-regulatory bodies, other major market participants, consumers, and the general public.
SEC. 1053. STUDY OF REGULATORY FRAMEWORK FOR ENERGY MARKETS.

(a) STUDY.—The Working Group shall conduct a study—

(1) to identify the factors that affect the pricing of crude oil and refined petroleum products, including an examination of the effects of market speculation on prices; and

(2) to review and assess—

(A) existing statutory authorities relating to the oversight and regulation of markets critical to the energy security of the United States; and

(B) the need for additional statutory authority for the Federal Government to effectively oversee and regulate markets critical to the energy security of the United States.

(b) ELEMENTS OF STUDY.—The study shall include—

(1) an examination of price formation of crude oil and refined petroleum products;

(2) an examination of relevant international regulatory regimes; and

(3) an examination of the degree to which changes in energy market transparency, liquidity, and structure have influenced or driven abuse, ma-
nipulation, excessive speculation, or inefficient price formation.

(c) REPORT AND RECOMMENDATIONS.—The Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Energy and Commerce of the House of Representatives quarterly progress reports during the conduct of the study under this section, and a final report not later than 1 year after the date of enactment of this Act, that—

(1) describes the results of the study; and

(2) provides options and the recommendations of the Working Group for appropriate Federal coordination of oversight and regulatory actions to ensure transparency of crude oil and refined petroleum product pricing and the elimination of excessive speculation, including recommendations on data collection and analysis to be carried out by the Financial Market Analysis Office established by section 205(p) of the Department of Energy Organization Act (42 U.S.C. 7135(p)).

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

SEC. 1061. REPORT BY TRANSMISSION ORGANIZATIONS ON DISTRIBUTED ENERGY RESOURCES AND MICROGRID SYSTEMS.

(a) DEFINITIONS.—In this section:

(1) DISTRIBUTED ENERGY RESOURCE.—The term “distributed energy resource” means an electricity supply resource that, as permitted by State law—

(A)(i) is interconnected to the electric system operated by a transmission organization at or below 69kV; and

(ii) is subject to dispatch by the transmission organization; and

(B)(i) generates electricity using any primary energy source, including solar energy and other renewable resources; or

(ii) stores energy and is capable of supplying electricity to the electric system operated by the transmission organization from the storage reservoir.

(2) ELECTRIC GENERATING CAPACITY RESOURCE.—The term “electric generating capacity resource” means an electric generating resource, as measured by the maximum load-carrying ability of
the resource, exclusive of station use and planned, unplanned, or other outage or derating, that is subject to dispatch by a transmission organization to meet the resource adequacy needs of the systems operated by the transmission organization.

(3) Microgrid system.—The term “microgrid system” means an electrically distinct system under common control that—

(A) serves an electric load at or below 69kV from a distributed energy resource or electric generating capacity resource; and

(B) is subject to dispatch by a transmission organization.

(4) Transmission organization.—The term “transmission organization” has the meaning given the term in section 3 of the Federal Power Act (16 U.S.C. 796).

(b) Report.—

(1) Notice.—Not later than 14 days after the date of enactment of this section, the Commission shall submit to each transmission organization notice that the transmission organization is required to file with the Commission a report in accordance with paragraph (2).
(2) REPORT.—Not later than 180 days after the date on which a transmission organization receives a notice under paragraph (1), the transmission organization shall submit to the Commission a report that—

(A)(i) identifies distributed energy resources and micro-grid systems that are subject to dispatch by the transmission organization as of the date of the report; and

(ii) describes the fuel sources and operational characteristics of such distributed energy resources and micro-grid systems, including, to the maximum extent practicable, a discussion of the benefits and costs associated with the distributed energy resources and microgrid systems identified under clause (i);

(B) evaluates, with due regard for operational and economic benefits and costs, the potential for distributed energy resources and microgrid systems to be deployed to the transmission organization over the short- and long-term periods in the planning cycle of the transmission organization; and

(C) identifies—
(i) over the short- and long-term periods in the planning cycle of the transmission organization, barriers to the deployment to the transmission organization of distributed energy resources and microgrid systems; and

(ii) potential changes to the operational requirements for, or charges associated with, the interconnection of distributed energy resources and microgrid systems to the transmission organization that would reduce the barriers identified under clause (i).

SEC. 1062. NET METERING STUDY GUIDANCE.

Title XVIII of Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 1122) is amended by adding at the end the following:

“SEC. 1841. NET ENERGY METERING STUDY.

“(a) In General.—Not later than 180 days after the date of enactment of this section, the Secretary shall—

“(1) issue guidance on criteria required to be included in studies of net metering conducted by the Department; and

“(2) undertake a study of net energy metering.
“(b) Requirements and Contents.—The model guidance issued under subsection (a) shall clarify without prejudice to other study criteria that any study of net energy metering, including the study conducted by the Department under subsection (a) shall—

“(1) be publicly available; and

“(2) assess benefits and costs of net energy metering, including—

“(A) load data, including hourly profiles;

“(B) distributed generation production data;

“(C) best available technology, including inverter capability; and

“(D) benefits and costs of distributed energy deployment, including—

“(i) environmental benefits;

“(ii) changes in electric system reliability;

“(iii) changes in peak power requirements;

“(iv) provision of ancillary services, including reactive power;

“(v) changes in power quality;

“(vi) changes in land-use effects;
“(vii) changes in right-of-way acquisition costs;
“(viii) changes in vulnerability to terrorism; and
“(ix) changes in infrastructure resilience.”.

**TITLE II—MODERNIZING INFRASTRUCTURE**

Subtitle A—QER Recommendations

SEC. 2001. NATURAL GAS DISTRIBUTION SYSTEM IMPROVEMENT PROGRAM.

Part 4 of title II of the National Energy Conservation Policy Act (42 U.S.C. 8231 et seq.) is amended by adding at the end the following:

“SEC. 256. ESTABLISHMENT OF A NATURAL GAS DISTRIBUTION SYSTEM IMPROVEMENT PROGRAM.

“(a) DEFINITIONS.—In this section:

“(1) LEAK-PRONE DISTRIBUTION PIPELINE.—The term ‘leak-prone distribution pipeline’ means a natural gas distribution system pipeline constructed of leak prone materials, such as cast iron or bare steel.

“(2) LOW-INCOME HOUSEHOLD.—The term ‘low-income household’ means a household—
“(A) the combined income of which is equal to or less than 200 percent of the poverty level; or

“(B) determined to be eligible by the State in which the household is located under the low-income home energy assistance program established under the Low-Income Home Energy Assistance Act of 1981 (42 U.S.C. 8621 et seq.) using an eligibility standard based on—

“(i) 150 percent of the poverty level;

or

“(ii) 60 percent of the median income in the State.

“(b) ESTABLISHMENT.—The Secretary shall make grants to eligible entities on a competitive basis to accelerate or expand utility programs that improve the safety and environmental performance of natural gas distribution systems.

“(c) ELIGIBILITY.—

“(1) IN GENERAL.—Except as provided in paragraph (2), to be eligible to receive a grant under subsection (b), an entity shall be—

“(A) a State;

“(B) the District of Columbia;

“(C) the Commonwealth of Puerto Rico;
“(D) any other territory or possession of the United States; or

“(E) a tribal organization (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b)).

“(2) OTHER ENTITIES.—If an entity described in subparagraphs (A) through (D) of paragraph (1) does not apply for a grant under subsection (b), units of general purpose local government, community action agencies, and other nonprofit agencies located in that entity shall be eligible to apply for a grant.

“(d) USE OF FUNDS.—An eligible entity receiving a grant under subsection (b)—

“(1) shall only use grant amounts for new or expanded programs that are approved by a public utility commission (or an equivalent entity) after April 21, 2015; and

“(2) may use grant amounts—

“(A) to accelerate the rate of replacement and repair of leak-prone distribution pipelines; and

“(B) for directed inspection and maintenance programs.
“(e) LOW-INCOME ASSISTANCE.—As a condition of receiving a grant under subsection (b), an eligible entity shall ensure that the grant amounts are used to offset the cost to low-income households of incremental increases in household bills associated with system upgrades using grant amounts.

“(f) APPLICATION PROCESS.—An eligible entity desiring a grant under subsection (b) shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

“(g) SELECTION.—In selecting grant recipients, the Secretary shall—

“(1) prioritize eligible entities that emphasize safety over other program benefits; and

“(2) with respect to the application proposal of an eligible entity, consider and estimate the net benefits of the proposed—

“(A) magnitude of methane emission reductions;

“(B) use of innovative technology and policy approaches;

“(C) number of low-income households estimated to benefit from the proposed program; and
“(D) demonstrated coordination with a broad range of stakeholders, including the public utility commission (or equivalent entity), consumer advocates, and utilities.

“(h) Authorization of Appropriations.—There is authorized to be appropriated to carry out this section $3,500,000,000 for the period of fiscal years 2016 through 2019.”.

SEC. 2002. STRATEGY FOR MANAGING THE RISKS ASSOCIATED WITH THE LOSS OR DISRUPTION OF POWER FROM LARGE POWER TRANSFORMERS.

Part II of the Federal Power Act (16 U.S.C. 824 et seq.) is amended by adding at the end the following:

“SEC. 224. STRATEGY FOR MANAGING THE RISKS ASSOCIATED WITH THE LOSS OR DISRUPTION OF POWER FROM LARGE POWER TRANSFORMERS.

“(a) Establishment.—The Secretary of Energy (referred to in this section as the ‘Secretary’), in coordination with the Secretary of Homeland Security and the heads of other Federal agencies, States, and representatives of the electric industry, shall develop a strategy for identifying and managing the risks associated with the loss of power from large power transformers.
“(b) RESERVE.—In developing the strategy under subsection (a), the Secretary shall evaluate the establishment of 1 or more transformer reserves as an approach to mitigating the risks described in subsection (a).

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

“(1) describes the findings, conclusions, and recommendations of the Secretary with respect to the strategy required to be developed under subsection (a); and

“(2) includes an implementation plan for that strategy.

“(d) STRATEGIC TRANSFORMER RESERVE.—On submission of the report under subsection (c), the Secretary may establish a Strategic Transformer Reserve.”.

SEC. 2003. CONSOLIDATION OF RELEASE AUTHORITIES.

(a) NORTHEAST HOME HEATING OIL RESERVE.—

The Energy Policy and Conservation Act is amended by striking section 183 (42 U.S.C. 6250b) and inserting the following:

“SEC. 183. CONDITIONS FOR RELEASE.

“The Secretary may sell products from the Reserve only after the President makes a finding of a severe energy supply interruption in accordance with section 161(d), ex-
except that references to ‘petroleum products’ and the ‘Strategic Petroleum Reserve’ in that section shall be deemed to be references to ‘petroleum distillate’ and the ‘Northeast Home Heating Oil Reserve’, respectively.”.

(b) NORTHEAST GASOLINE SUPPLY RESERVE.—The Secretary may sell products from the Northeast Gasoline Supply Reserve only after making a finding of a severe energy supply interruption in accordance with section 161(d) of the Energy Policy and Conservation Act (42 U.S.C. 6241(d)), except that references to “petroleum products” and the “Strategic Petroleum Reserve” in that section shall be deemed to be references to “gasoline” and the “Northeast Gasoline Supply Reserve”, respectively.

SEC. 2004. MODERNIZATION OF STRATEGIC PETROLEUM RESERVE RELEASE AUTHORITIES.

Section 161(d)(2) of the Energy Policy and Conservation Act (42 U.S.C. 6241(d)(2)) is amended—

(1) in subparagraph (A), by striking “(A) an emergency” and inserting the following:

“(A)(i) an emergency”;

(2) by redesignating subparagraphs (B) and (C) as clauses (ii) and (iii), respectively;

(3) in clause (ii) (as so redesignated), by striking “has resulted” and inserting “will likely result”;

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(4) in clause (iii) (as so redesignated), by striking the period at the end and inserting “; or”; and
(5) by adding at the end the following:

“(B) an interruption in the global oil supply exists that is likely to cause a severe increase in the price of domestic petroleum products, regardless of whether the interruption results in a loss of oil imports to the United States.”.

SEC. 2005. OPTIMIZATION OF EMERGENCY RESPONSE CAPABILITY OF STRATEGIC PETROLEUM RESERVE.

(a) IN GENERAL.—Part B of title I of the Energy Policy and Conservation Act (42 U.S.C. 6231 et seq.) is amended by adding at the end the following:

“SEC. 170. OPTIMIZATION OF EMERGENCY RESPONSE CAPABILITY OF STRATEGIC PETROLEUM RESERVE.

“(a) ANALYSIS.—The Secretary shall carry out an analysis, including detailed engineering studies, of the appropriate size and configuration of the Strategic Petroleum Reserve.

“(b) FUNDING FOR SPR INFRASTRUCTURE AND DISTRIBUTION SYSTEMS.—After performing the analysis under subsection (a) and subject to the availability of
funds, the Secretary may provide funds for Strategic Petroleum Reserve infrastructure and distribution systems in order to optimize the ability of the Strategic Petroleum Reserve to protect the economy of the United States in an emergency supply situation.

“(c) Authorization of Appropriations.—There is authorized to be appropriated to carry out this section $2,000,000,000 for the period of fiscal years 2016 through 2019.”.

(b) Conforming Amendment.—The table of contents for the Energy Policy and Conservation Act is amended by inserting after the item relating to section 169 the following:

“Sec. 170. Optimization of emergency response capability of Strategic Petroleum Reserve.”.

Subtitle B—Grid Modernization and Storage

SEC. 2011. DEFINITION OF SECRETARY.

In this subtitle (other than section 2012), the term “Secretary” means the Secretary, acting through the Assistant Secretary of the Office of Electricity Delivery and Energy Reliability.

SEC. 2012. GRID STORAGE PROGRAM.

(a) In General.—The Secretary shall conduct a program of research, development, and demonstration of electric grid energy storage that addresses the principal
challenges identified in the 2013 Department of Energy
Strategic Plan for Grid Energy Storage.

(b) AREAS OF FOCUS.—The program under this sec-
tion shall focus on—

(1) materials and electrochemical systems re-
search;

(2) power conversion technologies research;

(3) developing—

(A) empirical and science-based industry
standards to compare the storage capacity,
cycle length and capabilities, and reliability of
different types of electricity storage; and

(B) validation and testing techniques;

(4) other fundamental and applied research
critical to widespread deployment of electricity stor-
age;

(5) device development that builds on results
from research described in paragraphs (1), (2), and
(4), including combinations of power electronics, ad-
vanced optimizing controls, and energy storage as a
general purpose element of the electric grid;

(6) grid-scale testing and analysis of storage
devices, including test-beds and field trials;
(7) cost-benefit analyses that inform capital expenditure planning for regulators and owners and operators of components of the electric grid;

(8) electricity storage device safety and reliability, including potential failure modes, mitigation measures, and operational guidelines;

(9) standards for storage device performance, control interface, grid interconnection, and interoperability; and

(10) maintaining a public database of energy storage projects, policies, codes, standards, and regulations.

(c) Assistance to States.—The Secretary may provide technical and financial assistance to States, Indian tribes, or units of local government to participate in or use research, development, or deployment of technology developed under this section.

(d) Authorization of Appropriations.—There is authorized to be appropriated to the Secretary to carry out this section $50,000,000 for each of fiscal years 2017 through 2026.

SEC. 2013. TECHNOLOGY DEMONSTRATION AND THE DISTRIBUTION SYSTEM.

(a) In General.—The Secretary shall establish a grant program to carry out eligible projects relating to the
modernization of the electric grid, including the application of technologies to improve observability, advanced controls, and prediction of system performance on the distribution system.

(b) ELIGIBLE PROJECTS.—To be eligible for a grant under subsection (a), a project shall—

(1) be designed to improve the performance and efficiency of the future electric grid, while ensuring the continued provision of safe, secure, reliable, and affordable power; and

(2) demonstrate—

(A) secure integration and management of 2 or more energy resources, including distributed energy generation, combined heat and power, microgrids, energy storage, electric vehicles, energy efficiency, demand response, and intelligent loads; and

(B) secure integration and interoperability of communications and information technologies.

(c) PARTICIPATION.—Projects conducted under subsection (a) shall include the participation of a partnership consisting of 2 or more entities that—

(1) may include—

(A) any institution of higher education;
(B) a National Laboratory;

(C) a representative of a State or local government;

(D) a representative of an Indian tribe; or

(E) a Federal power marketing administration; and

(2) shall include not fewer than 1 of any of—

(A) an investor-owned electric utility;

(B) a publicly owned utility;

(C) a technology provider;

(D) a rural electric cooperative;

(E) a regional transmission organization;

or

(F) an independent system operator.

(d) SELECT AREAS OF FOCUS.—

(1) IN GENERAL.—The Secretary shall ensure that not fewer than 1 project conducted under subsection (a) is—

(A) a transactive energy project that implements a system of economic or control mechanisms that optimizes the dynamic balance of supply and demand across the electrical infrastructure, using economic value as a key operational parameter; and
(B) a valuation innovation project that evaluates or implements markets, rates, and other ways of appropriately valuing the grid services provided by demand response, energy efficiency, electric vehicles, storage, distributed generation, and other generation technologies to ensure—

(i) appropriate cost-recovery;

(ii) reliability of the distribution grid;

and

(iii) increased penetration of demand response, energy efficiency, electric vehicles, storage, distributed generation, and other generation technologies.

(e) CYBERSECURITY PLAN.—Each project conducted under subsection (a) shall include the development of a cybersecurity plan approved by the Secretary.

(f) PRIVACY BEST PRACTICES.—In carrying out this section, the Secretary shall identify best practices for the implementation of the 5 core concepts of the Department relating to the collection, use, disclosure, and retention of information, as described in the Voluntary Code of Conduct of the Department.

(g) WORKING GROUPS.—
(1) IN GENERAL.—The Secretary shall establish 1 or more working groups, to be composed of rep- resentatives of projects conducted under subsection (a), that shall—

(A) meet periodically to discuss implementa- tion of the projects, including challenges and potential solutions held in common by the projects; and

(B) submit to the Secretary such informa- tion resulting from the meetings as the Sec- retary may require.

(2) REPORTS.—The Secretary shall periodically publish reports and other appropriate materials based on the information provided by the working groups under paragraph (1)(B).

SEC. 2014. MICROGRID SYSTEMS FOR ISOLATED AND RESIL- IENT COMMUNITIES.

(a) DEFINITIONS.—In this section:

(1) HYBRID MICROGRID SYSTEM.—The term “hybrid microgrid system” means a stand-alone electrical system that—

(A) is comprised of conventional generation and at least 1 alternative energy resource; and

(B) may use grid-scale energy storage.
(2) ISOLATED COMMUNITY.—The term “isolated community” means a community that is powered by a stand-alone electric generation and distribution system without the economic and reliability benefits of connection to a regional electric grid.

(3) MICROGRID SYSTEM.—The term “microgrid system” means a standalone electrical system that uses grid-scale energy storage.

(4) STRATEGY.—The term “strategy” means the strategy developed under subsection (b)(2)(B).

(b) PROGRAM.—

(1) ESTABLISHMENT.—The Secretary shall establish a program to promote the development of—

(A) hybrid microgrid systems for isolated communities; and

(B) microgrid systems to increase the resilience of critical infrastructure.

(2) PHASES.—The program established under paragraph (1) shall be carried out in phases, including—

(A) phase I, which shall consist of the development of a feasibility assessment for—

(i) hybrid microgrid systems in isolated communities; and
(ii) microgrid systems to enhance the resilience of critical infrastructure;

(B) phase II, which shall consist of the development of an implementation strategy in accordance with paragraph (3) to promote the development of hybrid microgrid systems for isolated communities, particularly for those communities exposed to extreme weather conditions and high energy costs, including electricity, space heating and cooling, and transportation;

(C) phase III, which shall—

(i) be carried out simultaneously with phase II; and

(ii) consist of the development of an implementation strategy to promote the development of microgrid systems that increase the resilience of critical infrastructure;

(D) phase IV, which shall consist of cost-shared demonstration projects that—

(i) are based on the strategies developed under subparagraph (B); and

(ii) include the development of physical and cybersecurity plans to take appro-
priate measures to protect and secure the
electric grid; and

(E) phase V, which shall establish a ben-
fits analysis plan to help inform regulators, pol-
cymakers, and industry stakeholders about the
affordability, environmental, and resilience ben-
efits associated with phases II, III, and IV.

(3) REQUIREMENTS FOR STRATEGY.—In devel-
oping the strategy under paragraph (2)(B), the Sec-
retary shall consider—

(A) establishing future targets for the eco-
nomic displacement of conventional generation
using hybrid microgrid systems, including dis-
placement of conventional generation used for
electric power generation, heating and cooling,
and transportation;

(B) the potential for renewable resources,
including wind, solar, and hydropower, to be in-
tegrated into a hybrid microgrid system;

(C) opportunities for improving the effi-
ciency of existing hybrid microgrid systems;

(D) the capacity of the local workforce to
operate, maintain, and repair a hybrid
microgrid system;
(E) opportunities to develop the capacity of the local workforce to operate, maintain, and repair a hybrid microgrid system;

(F) leveraging existing capacity within local or regional research organizations, such as organizations based at institutions of higher education, to support development of hybrid microgrid systems, including by testing novel components and systems prior to field deployment;

(G) the need for basic infrastructure to develop, deploy, and sustain a hybrid microgrid system;

(H) input of traditional knowledge from local leaders of isolated communities in the development of a hybrid microgrid system;

(I) the impact of hybrid microgrid systems on defense, homeland security, economic development, and environmental interests;

(J) opportunities to leverage existing interagency coordination efforts and recommendations for new interagency coordination efforts to minimize unnecessary overhead, mobilization, and other project costs; and
(K) any other criteria the Secretary determines appropriate.

(c) COLLABORATION.—The program established under subsection (b)(1) shall be carried out in collaboration with relevant stakeholders, including, as appropriate—

(1) States;

(2) Indian tribes;

(3) regional entities and regulators;

(4) units of local government;

(5) institutions of higher education; and

(6) private sector entities.

(d) REPORT.—Not later than 180 days after the date of enactment of this Act, and annually thereafter, the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Energy and Commerce of the House of Representatives a report on—

(1) the efforts to implement the program established under subsection (b)(1); and

(2) the status of the strategy developed under subsection (b)(2)(B).
SEC. 2015. ELECTRIC SYSTEM GRID ARCHITECTURE, SCENARIO DEVELOPMENT, AND MODELING.

(a) Grid Architecture and Scenario Development.—

(1) In general.—Subject to paragraph (2), the Secretary shall establish and facilitate a collaborative process to develop model grid architecture and a set of future scenarios for the electric system to examine the impacts of different combinations of resources (including different quantities of distributed energy resources and large-scale, central generation) on the electric grid.

(2) Market structure.—The grid architecture and scenarios developed under paragraph (1) shall account for differences in market structure, including an examination of the potential for stranded costs in each type of market structure.

(3) Findings.—Based on the findings of grid architecture developed under paragraph (1), the Secretary shall—

(A) determine whether any additional standards are necessary to ensure the interoperability of grid systems and associated communications networks; and

(B) if the Secretary makes a determination that additional standards are necessary under
subparagraph (A), make recommendations for additional standards.

(b) MODELING.—Subject to subsection (c), the Secretary shall—

(1) conduct modeling based on the scenarios developed under subsection (a); and

(2) analyze and evaluate the technical and financial impacts of the models to assist States, utilities, and other stakeholders in—

(A) enhancing strategic planning efforts;

(B) avoiding stranded costs; and

(C) maximizing the cost-effectiveness of future grid-related investments.

(e) INPUT.—The Secretary shall develop the scenarios and conduct the modeling and analysis under subsections (a) and (b) with participation or input, as appropriate, from—

(1) the National Laboratories;

(2) States;

(3) State regulatory authorities;

(4) transmission organizations;

(5) representatives of the electric industry;

(6) academic institutions;

(7) independent research institutes; and

(8) other entities.
SEC. 2016. VOLUNTARY MODEL PATHWAYS.

(a) Establishment of Voluntary Model Pathways.—

(1) Establishment.—Not later than 90 days after the date of enactment of this Act, the Secretary shall initiate the development of voluntary model pathways for modernizing the electric grid through a collaborative, public-private effort that—

(A) produces illustrative policy pathways that can be adapted for State and regional applications by regulators and policymakers;

(B) facilitates the modernization of the electric grid to achieve the objectives described in paragraph (2);

(C) ensures a reliable, resilient, affordable, safe, and secure electric system; and

(D) acknowledges and provides for different priorities, electric systems, and rate structures across States and regions.

(2) Objectives.—The pathways established under paragraph (1) shall facilitate achievement of the following objectives:

(A) Near real-time situational awareness of the electric system.

(B) Data visualization.
(C) Advanced monitoring and control of the advanced electric grid.

(D) Enhanced certainty for private investment in the electric system.

(E) Increased innovation.

(F) Greater consumer empowerment.

(G) Enhanced grid resilience, reliability, and robustness.

(H) Improved—

(i) integration of distributed energy resources;

(ii) interoperability of the electric system; and

(iii) predictive modeling and capacity forecasting.

(3) STEERING COMMITTEE.—Not later than 90 days after the date of enactment of this Act, the Secretary shall establish a steering committee to facilitate the development of the pathways under paragraph (1), to be composed of members appointed by the Secretary, consisting of persons with appropriate expertise representing a diverse range of interests in the public, private, and academic sectors, including representatives of—

(A) the Smart Grid Task Force; and
(B) the Smart Grid Advisory Committee.

(b) TECHNICAL ASSISTANCE.—The Secretary may provide technical assistance to States, Indian tribes, or units of local government to adopt 1 or more elements of the pathways developed under subsection (a)(1).

SEC. 2017. PERFORMANCE METRICS FOR ELECTRICITY INFRASTRUCTURE PROVIDERS.

(a) IN GENERAL.—Not later than 2 years after the date of enactment of this Act, the Secretary shall submit to the appropriate committees of Congress a report that includes—

(1) an evaluation of the performance of the electric grid as of the date of the report; and

(2) a description of the quantified costs and benefits associated with the changes evaluated under the scenarios developed under section 2015.

(b) CONSIDERATIONS FOR DEVELOPMENT OF METRICS.—In developing metrics for evaluating and quantifying the electric grid under subsection (a), the Secretary shall consider—

(1) standard methodologies for calculating improvements or deteriorations in the performance metrics, such as reliability, grid efficiency, power quality, consumer satisfaction, sustainability, and financial incentives;
(2) standard methodologies for calculating value to ratepayers, including broad economic and related impacts from improvements to the performance metrics;

(3) appropriate ownership and operating roles for electric utilities that would enable improved performance through the adoption of emerging, commercially available or advanced grid technologies or solutions, including—

(A) multicustomer microgrids;

(B) distributed energy resources;

(C) energy storage;

(D) electric vehicles;

(E) electric vehicle charging infrastructure;

(F) integrated information and communications systems;

(G) transactive energy systems; and

(H) advanced demand management systems; and

(4) with respect to States, the role of the grid operator in enabling a robust future electric system to ensure that—

(A) electric utilities remain financially viable;
(B) electric utilities make the needed investments that ensure a reliable, secure, and resilient grid; and

(C) costs incurred to transform to an integrated grid are allocated and recovered responsibly, efficiently, and equitably.

SEC. 2018. STATE AND REGIONAL DISTRIBUTION PLANNING.

(a) IN GENERAL.—On the request of a State or regional organization, the Secretary shall partner with States and regional organizations to facilitate the development of State and regional electricity distribution plans by—

(1) conducting a resource assessment and analysis of future demand and distribution requirements; and

(2) developing open source tools for State and regional planning and operations.

(b) RISK AND SECURITY ANALYSIS.—The assessment under subsection (a)(1) shall include—

(1) the evaluation of the physical and cybersecurity needs of an advanced distribution management system and the integration of distributed energy resources; and
(2) advanced use of grid architecture to analyze risks in an all-hazards approach that includes communications infrastructure, control systems architecture, and power systems architecture.

(c) TECHNICAL ASSISTANCE.—For the purpose of developing State and regional electricity distribution plans, the Secretary shall provide technical assistance to—

(1) States;

(2) regional reliability entities; and

(3) other distribution asset owners and operators.

SEC. 2019. AUTHORIZATION OF APPROPRIATIONS.

There is authorized to be appropriated to the Secretary to carry out sections 2013 through 2018 $200,000,000 for each of fiscal years 2017 through 2026.

SEC. 2020. STATE CONSIDERATION OF RESILIENCE.

(a) ADOPTION OF STANDARDS.—Section 111(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)) is amended by adding at the end the following:

“(20) RESILIENCE.—

“(A) DEFINITION OF ELECTRIC GRID RESILIENCE.—The term ‘electric grid resilience’ means the ability of the electric grid to adapt...
to changing conditions and withstand and rapidly recover from disruptions.

“(B) REQUIRED CONSIDERATION.—Each electric utility shall incorporate into the regular planning process of the electric utility consideration of investments in electric grid resilience.

“(C) FACTORS.—Consideration under subparagraph (B) shall include an evaluation of potential benefits of enhancing electric grid resilience, including—

“(i) system stability under severe and nontraditional hazards;

“(ii) adaptation to region-specific natural threats and vulnerabilities;

“(iii) adaptation to climate change-related extreme weather disruptions;

“(iv) support provided to interdependent critical infrastructures reliant on energy services to operate;

“(v) reduced costs under normal operating conditions;

“(vi) enhanced distributed generation and microgrid functionality to operate as an integrated energy system in intentional islanding mode;
“(vii) localized energy generation that avoids incurrence of transmission and distribution losses;

“(viii) system operational flexibility;

and

“(ix) ancillary environmental benefits, including greenhouse gas reductions.”.

(b) COMPLIANCE.—

(1) TIME LIMITATIONS.—Section 112(b) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(b)) is amended by adding at the end the following:

“(7)(A) Not later than 1 year after the date of enactment of this paragraph, each State regulatory authority (with respect to each electric utility for which it has ratemaking authority), and each non-regulated electric utility, shall—

“(i) commence the consideration referred to in section 111; or

“(ii) set a hearing date for such consideration, with respect to the standard established by paragraph (20) of section 111(d).

“(B) Not later than 2 years after the date of enactment of this paragraph, each State regulatory authority (with respect to each electric utility for
which it has ratemaking authority), and each non-
regulated electric utility, shall—

“(i) complete the consideration required
under subparagraph (A); and

“(ii) make the determination referred to in
section 111 with respect to the standard estab-
lished by paragraph (20) of section 111(d).”.

(2) Failure to comply.—Section 112(c) of
the Public Utility Regulatory Policies Act of 1978
(16 U.S.C. 2622(c)) is amended by adding at the
end the following: “In the case of the standard es-
established by paragraph (20) of section 111(d), the
reference contained in this subsection to the date of
enactment of this Act shall be deemed to be a ref-
ference to the date of enactment of that paragraph.”.

Subtitle C—Advanced
Manufacturing

SEC. 2021. ADVANCED MANUFACTURING OFFICE.

(a) Establishment.—The Secretary shall establish,
within the Department, the Advanced Manufacturing Of-
fice (referred to in this subtitle as the “Office”)—

(1) to carry out basic and applied research, de-
velopment, and demonstration of new, energy-effi-
cient processes and materials—
(A) at a scale adequate to prove the value
of the processes and materials to manufacturers
in multiple industries; and
(B) that facilitate investments and com-
mercial scale-up;

(2) to focus on the conduct of activities that—
(A) use new technology and processes to
reuse existing products or update existing proc-
esses to achieve energy efficiency and promote
energy savings; and
(B) make use of new and emerging proc-
esses and materials;

(3) to improve workforce development in ad-
vanced manufacturing; and

(4) to enable the competitiveness of manufac-
turers and energy efficiency of manufacturing in the
United States by developing broadly applicable tech-
nologies for energy-intensive and energy-dependent
manufacturing by supporting research and develop-
ment directed towards—
(A) advanced and critical materials that
provide energy savings and efficiency;
(B) emerging topics, technology, and proc-
esses in advanced manufacturing that promote
energy savings;
(C) manufacturing platforms for advanced energy technologies; and

(D) strategies to address current and future workforce needs within the manufacturing sector.

(b) **INDUSTRY PARTICIPATION.**—To the maximum extent practicable, the Office shall carry out activities in partnership or collaboration with relevant industry stakeholders.

(c) **INTERAGENCY AND INTRA-AGENCY COORDINATION.**—The Secretary shall coordinate research, development, demonstration, and commercial application activities of the Office among—

(1) relevant programs within the Department, including—

(A) the Office of Energy Efficiency and Renewable Energy;

(B) the Office of Fossil Energy;

(C) the Office of Nuclear Energy;

(D) ARPA–E;

(E) the Office of Energy Policy and Systems Analysis; and

(F) other offices of the Department, as determined to be appropriate by the Secretary; and
(2) relevant technology research and development programs and workforce training programs in other Federal agencies.

SEC. 2022. NATIONAL ADVANCED MANUFACTURING PLAN.

(a) In General.—Not later than 18 months after the date of enactment of this Act, the Secretary, in consultation with the Secretary of Commerce, shall enter into an agreement with the National Academies to develop a national plan for smart and advanced manufacturing technology development and deployment to improve the productivity, competitiveness, and energy efficiency of the manufacturing sector of the United States.

(b) Contents.—

(1) In General.—The plan developed under subsection (a) shall identify areas in which actions by the Secretary and the heads of other relevant Federal agencies would—

(A) accelerate the development, deployment, and adoption of smart and advanced manufacturing technologies and processes;

(B) result in greater energy efficiency of, and lower environmental impacts for, all United States manufacturers;
(C) enhance competitiveness and strengthen the manufacturing sectors of the United States; and

(D) improve workforce training, career and technical education, and incumbent worker training between manufacturing industry and training providers.

(2) INCLUSIONS.—In identifying agency actions under paragraph (1), the Secretary shall include—

(A) an assessment of actions of the Department relating to smart and advanced manufacturing that were carried out before or after the date of enactment of this Act;

(B) the establishment of voluntary interconnection protocols and performance standards;

(C) the commercialization of existing research results;

(D) an assessment of existing high-performance and cloud computing infrastructure and opportunities for those technologies to play a role in the design and production of advanced manufacturing technology;

(E) an assessment of the research and development opportunities for supply chains re-
lated to the manufacture of carbon fiber com-
posite, critical materials, advanced materials,
and semiconductors;

(F) identification and assessment of financial incentives or demonstration projects that could accelerate the commercialization of advanced technology;

(G) an assessment and prioritization of emerging technologies and processes with the potential to increase manufacturing competitiveness;

(H) an analysis of the regions and industries that would benefit the most from implementing smart manufacturing technologies;

(I) an assessment of—

(i) the lessons learned through the decades long partnership of the Department with the automotive industry; and

(ii) how lessons learned could be applied to interactions with other industries (including the aerospace industry) and including—

(I) an analysis of the resources needed to expand partnerships with
the Advanced Manufacturing Office to
other industries; and

(II) an assessment of which in-
dustries and technologies would ben-
efit most from partnering with the
Department, based on—

(aa) cost savings;

(bb) energy savings;

(cc) job creation; and

(dd) environmental impacts;

and

(J) an assessment of current and future
workforce needs within the advanced manufac-
turing industry that identifies any significant
skill gaps and provides suggestions on ways to
address the gaps.

(c) BIENNIAL REVISIONS AND REPORT.—

(1) BIENNIAL REVISIONS.—Not later than 2
years after the date on which the Secretary com-
pletes the plan under subsection (a), and not less
frequently than once every 2 years thereafter, the
Secretary shall revise the plan to account for ad-
vancements in information and communication tech-
nology and manufacturing needs after the comple-
tion of the initial plan.
(2) Report.—The Secretary shall submit to Congress after each revision under paragraph (1) a report on the status of implementation of the plan established under subsection (a).

(d) Authorization of Appropriations.—There is authorized to be appropriated to carry out the study under this section $25,000,000.

SEC. 2023. ADVANCED MANUFACTURING SUPPLY CHAIN REPORT.

(a) In General.—The Secretary shall enter into an arrangement with the National Academy of Sciences under which the National Academy of Sciences shall develop a report that evaluates the manufacturing supply chains for various advanced manufacturing technologies, including—

(1) an assessment of the strength, weaknesses, opportunities, and obstacles in the supply chains of advanced manufacturing technologies, including carbon fiber composite manufacturing, critical materials, advanced materials, and semiconductors;

(2) analyses of—

(A) the ways in which the supply chains have changed during the 25-year period preceding the date of enactment of this Act;
(B) whether the supply chains have been disrupted by unfair foreign competition;
(C) the impact of global trade on the supply chains; and
(D) current trends relating to the supply chains;
(3) for each technology and process assessed, an analysis of which sections of the supply chain are critical for the United States to remain or become competitive in the manufacturing of the technology;
and
(4) recommendations on which emerging technologies and processes the United States should focus on in order to advance innovation in manufacturing capabilities to increase the competitiveness of United States manufacturing.
(b) REPORT.—Not later than 2 years after the date on which the Secretary enters into the arrangement with the National Academy of Sciences under subsection (a), the National Academy of Sciences shall submit to the Secretary, the Committee on Energy and Natural Resources of the Senate, and the Committee on Energy and Commerce of the House of Representatives a report that describes the findings and recommendations of the National
Academy of Sciences with respect to the assessment and analyses conducted under subsection (a).

SEC. 2024. LEVERAGING EXISTING AGENCY PROGRAMS TO ASSIST SMALL AND MEDIUM MANUFACTURERS.

(a) COLLABORATION WITH NATIONAL LABORATORIES AND INSTITUTIONS OF HIGHER EDUCATION.—The Office shall work in collaboration with National Laboratories and institutions of higher education to provide assistance to small and medium manufacturers with respect to smart manufacturing technologies and practices.

(b) EXPANSION OF TECHNICAL ASSISTANCE PROGRAMS.—The Secretary shall expand the scope of technologies covered by the Industrial Assessment Centers—

(1) to include smart manufacturing technologies and practices; and

(2) to provide the directors of the Industrial Assessment Centers with the training and tools necessary to provide to manufacturers technical assistance in smart manufacturing technologies and practices, including energy management systems.

SEC. 2025. ADVANCED MANUFACTURING INNOVATION HUBS.

(a) DEFINITIONS.—In this section:
(1) **ADVANCED MANUFACTURING.**—The term “advanced manufacturing” means—

(A) a technology, or process that—

(i) depends on the use and coordination of information, automation, computation, software, sensing, and networking;

(ii) makes use of new materials or reuses existing materials; or

(iii) enhances the manufacturing competitiveness of the United States;

(B) research, development, demonstration, and commercial application activities necessary to ensure the long-term, secure, and sustainable supply of advanced materials; or

(C) any other innovative energy technology area identified by the Secretary.

(2) **Hub.**—The term “Hub” means an Advanced Manufacturing Innovation Hub established under subsection (b).

(3) **QUALIFYING ENTITY.**—The term “qualifying entity” means—

(A) an institution of higher education in partnership with industry;
(B) an appropriate Federal or State entity, including Federally Funded Research and Development Centers of the Department;

(C) a nongovernmental organization with expertise in advanced manufacturing research, development, demonstration, or commercial application activities; or

(D) any other relevant entity that the Secretary considers appropriate.

(b) AUTHORIZATION OF PROGRAM.—

(1) IN GENERAL.—The Secretary shall carry out a program to enhance the manufacturing competitiveness of the United States by making awards to consortia for establishing and operating Advanced Manufacturing Innovation Hubs to conduct and support multidisciplinary, collaborative research, development, demonstration, and commercial application of advance manufacturing technologies.

(2) CENTRALIZED LOCATION.—To the maximum extent practicable, each Hub provided an award under this section shall be located at 1 centralized location.

(3) TECHNOLOGY DEVELOPMENT FOCUS.—The Secretary shall designate for each Hub a unique ad-
vanced manufacturing technology focus, process, or
technology.

(4) COORDINATION.—The Secretary shall en-
sure the coordination of, and avoid unnecessary du-
plication of, the activities of Hubs with the activities
of other research entities of the Department (includ-
ing the National Laboratories and the Advanced Re-
search Projects Agency—Energy) and industry.

(e) CONSORTIA.—

(1) ELIGIBILITY.—To be eligible to receive an
award under this section for the establishment and
operation of a Hub, a consortium shall—

(A) be composed of not fewer than 2 quali-
fying entities; and

(B) operate subject to an agreement en-
tered into by the members of the consortium
that documents—

(i) the proposed partnership agree-
ment, including the governance and man-
agement structure of the Hub;

(ii) measures to enable the cost-effec-
tive implementation of the program under
this section;
(iii) a proposed budget for the Hub, including a description of financial contributions from non-Federal sources;

(iv) an accounting structure for the Hub that enables the Secretary to ensure that the consortium has complied with the requirements of this section; and

(v) a plan to coordinate workforce training within Hub locations.

(2) Application.—

(A) In general.—A consortium seeking to establish and operate a Hub under this section, acting through a prime applicant, shall submit to the Secretary an application that addresses the elements of the consortium agreement required under paragraph (1)(B).

(B) Multiple locations.—If the consortium members are not located at 1 centralized location, an application submitted under subparagraph (A) shall include a communications plan that ensures close coordination and integration of the activities of the Hub.

(d) Selection and Schedule.—

(1) In general.—The Secretary shall select consortia for awards for the establishment and oper-
ation of Hubs through a competitive selection process.

(2) CONSIDERATIONS.—In selecting consortia under this section, the Secretary shall consider—

(A) the information a consortium is required to document under subsection (c)(1)(B);

(B) regional diversity; and

(C) any existing facilities that a consortium would provide for Hub activities.

(3) TERM.—

(A) IN GENERAL.—Awards made to a Hub under this section shall be for a period of not more than 5 years.

(B) RENEWAL.—At the end of the 5-year period of an award under this section, the Secretary may renew the award, subject to a rigorous merit review.

(e) HUB OPERATIONS.—

(1) IN GENERAL.—Each Hub shall conduct or provide for multidisciplinary, collaborative research, development, demonstration, and, as appropriate, commercial application of advanced manufacturing technologies within the technology development focus for the Hub designated under subsection (b)(3).

(2) REQUIREMENTS.—Each Hub shall—
(A) encourage collaboration and communication among the member qualifying entities of the consortium and awardees by conducting activities, to the maximum extent practicable, at 1 centralized location;

(B) develop and publish on the website of the Department proposed plans and programs;

(C) submit an annual report to the Secretary that summarizes, during the period covered by the report, the activities of the Hub, including—

   (i) a detailed description of organizational expenditures by the Hub; and

   (ii) a description of each project undertaken by the Hub; and

(D) monitor project implementation and coordination.

(3) CONFLICTS OF INTEREST.—

   (A) PROCEDURES.—A Hub shall maintain conflict of interest procedures, consistent with the procedures of the Department, to ensure that employees and consortia designees for Hub activities that are in decisionmaking capacities—
(i) disclose all material conflicts of interest; and

(ii) avoid conflicts of interest.

(B) DISQUALIFICATION AND REVOCATION.—The Secretary may disqualify an application or revoke funds distributed to a Hub if the Secretary discovers a failure to comply with conflict of interest procedures established under subparagraph (A).

(4) PROHIBITION OF CONSTRUCTION.—

(A) IN GENERAL.—No funds provided under this section may be used for the construction of new buildings or facilities for a Hub.

(B) COST-SHARING AGREEMENT.—Construction of new buildings or facilities for a Hub shall not be considered as part of the non-Federal share of a cost-sharing agreement of the Hub.

(C) TEST BED AND RENOVATION EXCEPTION.—Nothing in this paragraph prohibits the use of funds provided under this section, or non-Federal cost share funds, for research or for the construction of a test bed or renovations to existing buildings or facilities for the pur-
poses of research, if the Secretary determines that the test bed or renovations are limited to a scope and scale necessary for the research to be conducted.

(f) **TERMINATION.**—The Secretary may terminate an underperforming Hub for cause during the award period.

(g) **LOAN PROGRAM.**—The consortium from each Hub, in consultation with the Secretary, may identify best in class technologies that would be eligible for technical assistance, including assistance from loan programs of the Department, the Community Development Financial Institution Program, Small Business Administration loan programs, Small Business Innovation Research and Small Business Technology Transfer programs, and rural energy loan programs of the Department of Agriculture.

(h) **AUTHORIZATION OF APPROPRIATIONS.**—There is authorized to be appropriated to carry out this section $300,000,000.

SEC. 2026. ADVANCED MATERIALS PRIZE COMPETITION PILOT PROGRAM.

(a) **IN GENERAL.**—The Secretary shall establish a prize competition under which eligible entities compete to develop and verifiably demonstrate advanced materials technology that reduces energy costs or reduces carbon dioxide emissions by at least 20 percent.
(b) **COMPETITION BOARD.**—The Secretary shall establish a Competition Board to administer the prize competition, to be composed of members from the Department and industry.

(c) **ELIGIBLE ENTITIES.**—To be eligible for the competition, an entity shall be—

1. a non-public entity; or
2. a public-private partnership in which the private entity is greater than 50 percent of the partnership.

(d) **AWARDS.**—As part of the prize competition established under this section, the Competition Board shall award to eligible entities not more than 5 prizes of not more than $2,000,000 each.

(e) **DURATION.**—The duration for the prize competition established under this section shall be not less than 2 years or more than 5 years.

(f) **SELECTION.**—In selecting a winner for a prize awarded under the prize competition, the Competition Board shall evaluate the technology developed by the eligible entity based on the following criteria:

1. The amount by which the technology would increase energy savings or decrease carbon dioxide emissions.
(2) The ability of the technology to be deployed in commercial application in a variety of industries or supply chains.

(3) The potential for private sector investment in the technology.

(4) The potential of the technology to transform an existing industry or establish a new industry.

(g) Authorization of Appropriations.—There is authorized to be appropriated to carry out this section $10,000,000.

SEC. 2027. PILOT PROGRAM WITH ORIGINAL EQUIPMENT MANUFACTURERS AND PUBLIC UTILITIES.

The Office, in collaboration with the Industrial Assessment Centers at the Department, the National Institute of Standards and Technology, the Manufacturing Extension Partnership, original equipment manufacturers, and public utilities, shall develop a pilot program to work with small- and medium-manufacturers in supply chains of original equipment manufacturers to provide—

(1) an assessment of manufacturing efficiency; and

(2) best practices and technical assistance for implementing energy savings and efficiency in the manufacturing process.
Subtitle D—Building Better Trucks

SEC. 2031. ADVANCED TECHNOLOGY VEHICLES MANUFACTURING INCENTIVE PROGRAM.

Section 136 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17013) is amended—

(1) in subsection (a)—

(A) in paragraph (1)—

(i) by redesignating subparagraphs (A) through (C) as clauses (i) through (iii), respectively, and indenting appropriately;

(ii) by striking “(1) ADVANCED TECHNOLOGY VEHICLE.—” and all that follows through “meets—” and inserting the following:

“(1) ADVANCED TECHNOLOGY VEHICLE.—The term ‘advanced technology vehicle’ means—

“(A) an ultra efficient vehicle;

“(B) a light duty vehicle that meets—”;

(iii) in subparagraph (B)(iii) (as so redesignated), by striking the period at the end and inserting “; or”; and

(iv) by adding at the end the following:
“(C) a medium-duty or heavy-duty vehicle that—

“(i)(I) is subject to regulations established by the Secretary of Transportation under parts 523, 534, and 535 of title 49, Code of Federal Regulations (or successor regulations); or

“(II) is included in a vehicle type or class that offers opportunities to substantially reduce consumption of conventional motor fuel, as determined by the Secretary by rule; and

“(ii) reduces consumption of conventional motor fuel by 10 percent or greater as compared to model year 2010 medium- and heavy-duty vehicles of a similar vehicle type or class, unless the Secretary determines by rule that—

“(I) the percentage is not achievable for a specific vehicle type or class; and

“(II) an alternative percentage for that vehicle type or class will result in substantial reductions in motor
fuel consumption within the United States.”; and

(B) by striking paragraph (4) and inserting the following:

“(4) QUALIFYING COMPONENTS.—The term ‘qualifying components’ means components, systems, or groups of subsystems that the Secretary determines—

“(A) to be designed to improve fuel economy or otherwise substantially reduce consumption of conventional motor fuel; or

“(B) to contribute measurably to the overall improved fuel use of an advanced technology vehicle.”;

(2) in subsection (b), in the matter preceding paragraph (1), by inserting “or other vehicle” after “ultra efficient vehicle”; 

(3) by striking subsection (f) and inserting the following:

“(f) FEES.—

“(1) IN GENERAL.—The Secretary shall charge a closing fee of 50 basis points of the loan to cover applicable administrative expenses.

“(2) USE OF FEES.—Fees collected under paragraph (1) shall—
“(A) be deposited by the Secretary into the
general fund of the Treasury; and
“(B) remain available until expended, sub-
ject to such other conditions as are contained in
annual appropriations Acts.”; and
(4) in subsection (h)(1)(B), by striking “auto-
mobiles, or components of automobiles” and insert-
ing “automobiles or other vehicles, or components of
automobiles or other vehicles”.

Subtitle E—Vehicle Innovation

SEC. 2041. FINDINGS.

Congress finds the following:
(1) According to the Energy Information Ad-
ministration, the transportation sector accounts for
approximately 28 percent of the United States pri-
mary energy demand and greenhouse gas emissions,
and 21 percent of global oil demand.
(2) The United States transportation sector is
over 90-percent dependent on petroleum.
(3) United States heavy truck fuel consumption
will increase 27 percent by 2030.
(4) The domestic automotive and commercial
vehicle manufacturing sectors have increasingly lim-
ited resources for research, development, and engi-
neering of advanced technologies.
(5) Vehicle, engine, and component manufacturers are playing a more important role in vehicle technology development, and should be better integrated into Federal research efforts.

(6) Priorities for the vehicle technologies research of the Department have shifted drastically in recent years among diesel hybrids, hydrogen fuel cell vehicles, and plug-in electric hybrids, with little continuity among them.

(7) The integration of vehicle, communication, and infrastructure technologies has great potential for efficiency gains through better management of the total transportation system.


SEC. 2042. OBJECTIVES.

The objectives of this subtitle are—

(1) to develop United States technologies and practices that—

(A) improve the fuel efficiency and emissions of all vehicles produced in the United States; and
(B) reduce vehicle reliance on petroleum-based fuels;

(2) to support domestic research, development, engineering, demonstration, and commercial application and manufacturing of advanced vehicles, engines, and components;

(3) to enable vehicles to move larger volumes of goods and more passengers with less energy and emissions;

(4) to develop cost-effective advanced technologies for wide-scale utilization throughout the passenger, commercial, government, and transit vehicle sectors;

(5) to allow for greater consumer choice of vehicle technologies and fuels;

(6) shorten technology development and integration cycles in the vehicle industry;

(7) to ensure a proper balance and diversity of Federal investment in vehicle technologies; and

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

SEC. 2043. VEHICLE RESEARCH AND DEVELOPMENT PROGRAM.

(a) Program.—
(1) ACTIVITIES.—The Secretary shall conduct a program of basic and applied research, development, engineering, demonstration, and commercial application activities on materials, technologies, and processes with the potential to substantially reduce or eliminate petroleum use and the emissions of passenger and commercial vehicles in the United States, including activities in the areas of—

(A) hybridization or full electrification of vehicle systems;

(B) batteries and other energy storage devices;

(C) power electronics;

(D) vehicle, component, and subsystem manufacturing technologies and processes;

(E) engine efficiency and combustion optimization;

(F) waste heat recovery;

(G) transmission and drivetrains;

(H) hydrogen vehicle technologies, including fuel cells and internal combustion engines, and hydrogen infrastructure, including hydrogen energy storage to enable renewables and provide hydrogen for fuel and power;

(I) natural gas vehicle technologies;
(J) aerodynamics, rolling resistance (including tires and wheel assemblies), and accessory power loads of vehicles and associated equipment;

(K) vehicle weight reduction, including lightweighting materials and the development of manufacturing processes to fabricate, assemble, and use dissimilar materials;

(L) friction and wear reduction;

(M) engine and component durability;

(N) innovative propulsion systems;

(O) advanced boosting systems;

(P) hydraulic hybrid technologies;

(Q) engine compatibility with and optimization for a variety of transportation fuels including natural gas and other liquid and gaseous fuels;

(R) predictive engineering, modeling, and simulation of vehicle and transportation systems;

(S) refueling and charging infrastructure for alternative fueled and electric or plug-in electric hybrid vehicles, including the unique challenges facing rural areas;
(T) gaseous fuels storage systems and system integration and optimization;

(U) sensing, communications, and actuation technologies for vehicle, electrical grid, and infrastructure;

(V) efficient use, substitution, and recycling of potentially critical materials in vehicles, including rare earth elements and precious metals, at risk of supply disruption;

(W) aftertreatment technologies;

(X) thermal management of battery systems;

(Y) retrofitting advanced vehicle technologies to existing vehicles;

(Z) development of common standards, specifications, and architectures for both transportation and stationary battery applications;

(AA) advanced internal combustion engines;

(BB) mild hybrid;

(CC) engine down speeding; and

(DD) other research areas as determined by the Secretary.

(2) **Transformational Technology.**—The Secretary shall ensure that the Department con-
continues to support research, development, engineering, demonstration, and commercial application activities and maintains competency in mid- to long-term transformational vehicle technologies with potential to achieve deep reductions in petroleum use and emissions, including activities in the areas of—

(A) hydrogen vehicle technologies, including fuel cells, hydrogen storage, infrastructure, and activities in hydrogen technology validation and safety codes and standards;

(B) multiple battery chemistries and novel energy storage devices, including nonchemical batteries and electromechanical storage technologies such as hydraulics, flywheels, and compressed air storage;

(C) communication and connectivity among vehicles, infrastructure, and the electrical grid; and

(D) other innovative technologies research and development, as determined by the Secretary.

(3) INDUSTRY PARTICIPATION.—

(A) IN GENERAL.—To the maximum extent practicable, activities under this section shall be carried out in partnership or collabora-
tion with automotive manufacturers, heavy commercial, vocational, and transit vehicle manufacturers, qualified plug-in electric vehicle manufacturers, compressed natural gas vehicle manufacturers, vehicle and engine equipment and component manufacturers, manufacturing equipment manufacturers, advanced vehicle service providers, fuel producers and energy suppliers, electric utilities, institutions of higher education, the National Laboratories (as that term is defined in section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801)), and independent research laboratories.

(B) REQUIREMENTS.—In carrying out this section, the Secretary shall—

(i)(I) determine whether a wide range of companies that manufacture or assemble vehicles or components in the United States are represented in ongoing public private partnership activities, including firms that have not traditionally participated in federally sponsored research and development activities; and

(II) if possible, partner with firms described in subclause (II) that conduct sig-
significant and relevant research and development activities in the United States;

(ii) leverage the capabilities and resources of, and formalize partnerships with, industry-led stakeholder organizations, nonprofit organizations, industry consortia, and trade associations with expertise in the research and development of, and education and outreach activities in, advanced automotive and commercial vehicle technologies;

(iii) develop more effective processes for transferring research findings and technologies to industry;

(iv) give consideration to conversion of existing or former vehicle technology development or manufacturing facilities for the purposes of this section;

(v) support public-private partnerships dedicated to overcoming barriers in commercial application of transformational vehicle technologies that use the industry-led technology development facilities of entities with demonstrated expertise in successfully designing and engineering pre-commercial
generations of transformational vehicle technology; and

(vi) promote efforts to ensure that technology research, development, engineering, and commercial application activities funded under this section are carried out in the United States.

(4) INTERAGENCY AND INTRAAGENCY COORDINATION.—To the maximum extent practicable, the Secretary shall coordinate research, development, demonstration, and commercial application activities among—

(A) relevant programs within the Department, including—

(i) the Office of Energy Efficiency and Renewable Energy;

(ii) the Office of Science;

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

(iv) the Office of Fossil Energy;

(v) the Advanced Research Projects Agency—Energy; and

(vi) other offices as determined by the Secretary; and
(B) relevant technology research and development programs within other Federal agencies, as determined by the Secretary.

(5) **COORDINATION AND NONDUPICATION.**—In coordinating activities carried out under this section, the Secretary shall ensure, to the maximum extent practicable, that the activities do not duplicate those of other programs within the Department or other relevant research agencies.

(6) **FEDERAL DEMONSTRATION OF TECHNOLOGIES.**—The Secretary shall make information available to procurement programs of Federal agencies regarding the potential to demonstrate technologies resulting from activities funded through programs under this section.

(7) **INTERGOVERNMENTAL COORDINATION.**—The Secretary shall seek opportunities to leverage resources and support initiatives of State and local governments in developing and promoting advanced vehicle technologies, manufacturing, and infrastructure.

(8) **CRITERIA.**—In awarding grants under this program, the Secretary shall give priority to those technologies (either individually or as part of a system) that—
(A) provide the greatest aggregate fuel savings based on the reasonable projected sales volumes of the technology; and

(B) provide the greatest increase in employment in the United States.

(b) SENSING AND COMMUNICATIONS TECHNOLOGIES.—The Secretary, in coordination with the relevant research programs of other Federal agencies, shall conduct research, development, engineering, demonstration, and deployment activities on connectivity of vehicle roadway, vulnerable road users, traffic control systems, and transportation data systems, including on sensing, data, computation, communication, cybersecurity, and actuation technologies that allow for improved safety, reduced energy and fuel use, optimized traffic flow, and vehicle electrification, including technologies for—

(1) onboard vehicle, engine, transmission and component sensing, actuation, and calibration;

(2) vehicle-to-vehicle sensing and communication;

(3) vehicle-to-infrastructure sensing and communication;

(4) vehicle-to-pedestrian and vehicle-to-bicyclist sensing and communication; and

(5) vehicle integration with the electrical grid.
(c) MANUFACTURING.—The Secretary shall carry out a research, development, engineering, demonstration, and commercial application program of advanced vehicle manufacturing technologies and practices, including innovative processes—

(1) to increase the production rate and decrease the cost of advanced battery and fuel cell manufacturing;

(2) to vary the capability of individual manufacturing facilities to accommodate different battery chemistries and configurations;

(3) to reduce waste streams, emissions, and energy intensity of vehicle, engine, advanced battery and component manufacturing processes;

(4) to recycle and remanufacture used batteries and other vehicle components for reuse in vehicles or stationary applications;

(5) to develop manufacturing processes to effectively fabricate, assemble, and produce cost-effective lightweight materials such as advanced aluminum and other metal alloys, polymeric composites, and carbon fiber for use in vehicles;

(6) to produce lightweight high pressure storage systems for gaseous fuels;
(7) to design and manufacture purpose-built hydrogen fuel cell vehicles and components;
(8) to improve the calendar life and cycle life of advanced batteries; and
(9) to produce permanent magnets for advanced vehicles.

(d) User Testing Facilities.—Activities under this section may include construction, expansion, or modification of new and existing vehicle, engine, and component research and testing facilities for—

(1) testing or simulating interoperability of a variety of vehicle components and systems, including the technologies described in subsection (b);

(2) subjecting whole or partial vehicle platforms to fully representative duty cycles and operating conditions;

(3) developing and demonstrating a range of chemistries and configurations for advanced vehicle battery manufacturing;

(4) developing and demonstrating test cycles for new and alternative fuels, and other advanced vehicle technologies;

(5) developing and demonstrating methods to charge electric vehicles and connect them to the electric grid; and
(6) developing, testing, and demonstrating hydrogen and natural gas refueling station technologies.

(c) Reporting.—

(1) Technologies developed.—Not later than 18 months after the date of enactment of this Act and annually thereafter through 2020, the Secretary shall submit to Congress a report regarding the technologies developed as a result of the activities authorized by this section, with a particular emphasis on whether the technologies were successfully adopted for commercial applications, and if so, whether products relying on those technologies are manufactured in the United States.

(2) Additional matters.—At the end of each fiscal year through 2020 the Secretary shall submit to the relevant Congressional committees of jurisdiction an annual report describing activities undertaken in the previous year under this section, active industry participants, efforts to recruit new participants committed to design, engineering, and manufacturing of advanced vehicle technologies in the United States, progress of the program in meeting goals and timelines, and a strategic plan for funding of activities across agencies.
SEC. 2044. MEDIUM- AND HEAVY-DUTY COMMERCIAL AND TRANSIT VEHICLES PROGRAM.

(a) Program.—

(1) In general.—The Secretary, in partnership with relevant research and development programs in other Federal agencies, and a range of appropriate industry stakeholders, shall carry out a program of cooperative research, development, demonstration, and commercial application activities on advanced technologies for medium- to heavy-duty commercial, vocational, recreational, and transit vehicles, including activities in the areas of—

(A) engine efficiency and combustion research;

(B) onboard storage technologies for compressed and liquefied natural gas;

(C) development and integration of engine technologies designed for natural gas operation of a variety of vehicle platforms;

(D) waste heat recovery and conversion;

(E) improved aerodynamics and tire rolling resistance;

(F) energy and space-efficient emissions control systems;
(G) mild hybrid, heavy hybrid, hybrid hydraulic, plug-in hybrid, and electric platforms, and energy storage technologies;

(H) drivetrain optimization;

(I) friction and wear reduction;

(J) engine idle and parasitic energy loss reduction;

(K) electrification of accessory loads;

(L) onboard sensing and communications technologies;

(M) advanced lightweighting materials and vehicle designs;

(N) increasing load capacity per vehicle;

(O) thermal management of battery systems;

(P) recharging infrastructure;

(Q) compressed natural gas infrastructure;

(R) advanced internal combustion engines;

(S) complete vehicle and power pack modeling, simulation, and testing;

(T) hydrogen vehicle technologies, including fuel cells and internal combustion engines, and hydrogen infrastructure, including hydrogen energy storage to enable renewables and provide hydrogen for fuel and power;
(U) retrofitting advanced technologies onto existing truck fleets;

(V) advanced boosting systems;

(W) engine down speeding; and

(X) integration of these and other advanced systems onto a single truck and trailer platform.

(2) REPORTING.—At the end of each fiscal year through fiscal year 2020, the Secretary shall submit to Congress an annual report describing activities undertaken in the previous year under this section, active industry participants, efforts to recruit new participants, progress of the program in meeting goals and timelines, and a strategic plan for funding of activities across agencies.

(b) CLASS 8 TRUCK AND TRAILER SYSTEMS DEMONSTRATION.—

(1) IN GENERAL.—The Secretary shall conduct a competitive grant program to demonstrate the integration of multiple advanced technologies on Class 8 truck and trailer platforms, including a combination of technologies listed in subsection (a)(1).

(2) APPLICANT TEAMS.—Applicant teams may be comprised of truck and trailer manufacturers, engine and component manufacturers, fleet customers,
(c) Technology Testing and Metrics.—The Secretary, in coordination with the partners of the inter-agency research program described in subsection (a)(1)—

(1) shall develop standard testing procedures and technologies for evaluating the performance of advanced heavy vehicle technologies under a range of representative duty cycles and operating conditions, including for heavy hybrid propulsion systems;

(2) shall evaluate heavy vehicle performance using work performance-based metrics other than those based on miles per gallon, including those based on units of volume and weight transported for freight applications, and appropriate metrics based on the work performed by nonroad systems; and

(3) may construct heavy duty truck and bus testing facilities.

(d) Nonroad Systems Pilot Program.—The Secretary shall undertake a pilot program of research, development, demonstration, and commercial applications of technologies to improve total machine or system efficiency for nonroad mobile equipment including agricultural, construction, air, and sea port equipment, and shall seek op-
opportunities to transfer relevant research findings and technologies between the nonroad and on-highway equipment and vehicle sectors.

SEC. 2045. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary for research, development, engineering, demonstration, and commercial application of vehicles and related technologies in the United States, including activities authorized under this subtitle—

(1) for fiscal year 2016, $313,567,000;
(2) for fiscal year 2017, $326,109,000;
(3) for fiscal year 2018, $339,154,000;
(4) for fiscal year 2019, $352,720,000; and
(5) for fiscal year 2020, $366,829,000.

Subtitle F—Carbon Fiber Recycling

SEC. 2051. RECYCLED CARBON FIBER STUDY.

(a) Study.—The Secretary shall conduct a study on—

(1) the technology of recycled carbon fiber and production waste carbon fiber; and
(2) the potential lifecycle energy savings and economic impact of recycled carbon fiber.
(b) FACTORS FOR CONSIDERATION.—In conducting the study under subsection (a), the Secretary shall take into consideration—

(1) the quantity of recycled carbon fiber or production waste carbon fiber that would make the use of recycled carbon fiber or production waste carbon fiber economically viable;

(2) any existing or potential barriers to recycling carbon fiber or using recycled carbon fiber;

(3) any financial incentives that may be necessary for the development of recycled carbon fiber or production waste carbon fiber;

(4) the potential lifecycle savings in energy from producing recycled carbon fiber, as compared to producing new carbon fiber;

(5) the best and highest use for recycled carbon fiber;

(6) the potential reduction in carbon dioxide emissions from producing recycled carbon fiber, as compared to producing new carbon fiber;

(7) any economic benefits gained from using recycled carbon fiber or production waste carbon fiber;

(8) workforce training and skills needed to address labor demands in the development of recycled carbon fiber or production waste carbon fiber; and
(9) how the Department can leverage existing efforts in the industry on the use of production waste carbon fiber.

(c) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to Congress a report describing the results of the study conducted under subsection (a).

SEC. 2052. CARBON FIBER RECYCLING DEMONSTRATION PROJECT.

The Secretary shall consult with the aviation and automotive industries and existing programs of the Advanced Manufacturing Office of the Department to develop a carbon fiber recycling demonstration project.

SEC. 2053. AUTHORIZATION OF APPROPRIATIONS.

There is authorized to be appropriated to carry out this subtitle $10,000,000, to remain available until expended.

Subtitle G—Job Creation Through Energy Efficient Manufacturing

SEC. 2061. PURPOSE.

The purpose of this subtitle is to encourage widespread deployment of energy efficiency and onsite renewable energy technologies in manufacturing and industrial facilities throughout the United States through the estab-
lishment of a Financing Energy Efficient Manufacturing Program that would—

(1) encourage the widespread availability of financial products and programs with attractive rates and terms that significantly reduce or eliminate up-front expenses to allow manufacturing and industrial businesses to invest in energy efficiency measures, onsite clean and renewable energy systems, smart grid systems, and alternative vehicle fleets by providing credit support, credit enhancement, secondary markets, and other support to originators of the financial products and sponsors of the financing programs; and

(2) help building owners to invest in measures and systems that reduce energy costs, in many cases creating a net cost savings that can be realized in the short-term, and may also allow manufacturing and industrial business owners to defer capital expenditures, save money to hire new workers, and increase the value, comfort, and sustainability of the property of the owners.

**SEC. 2062. DEFINITIONS.**

In this subtitle:

(1) **COVERED PROGRAM.**—The term “covered program” means a program to finance energy effi-
ciency retrofit, onsite clean and renewable energy, smart grid, and alternative vehicle fleet projects for industrial businesses.

(2) **STATE.**—The term “State” means—

(A) a State;

(B) the District of Columbia;

(C) the Commonwealth of Puerto Rico;

and

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

**SEC. 2063. FINANCING ENERGY EFFICIENT MANUFACTURING PROGRAM.**

(a) **ESTABLISHMENT.**—The Secretary shall establish a program, to be known as the “Financing Energy Efficient Manufacturing Program”, under which the Secretary shall provide grants to States to establish or expand covered programs.

(b) **APPLICATIONS.**—

(1) **IN GENERAL.**—A State may apply to the Secretary for a grant under subsection (a) to establish or expand covered programs.

(2) **EVALUATION.**—The Secretary shall evaluate applications submitted by States under paragraph (1) on the basis of—
(A) the likelihood that the covered program would—

(i) be established or expanded; and

(ii) increase the total investment and energy savings of retrofit projects to be supported;

(B) in the case of industrial business efficiency financing initiatives conducted under subsection (c), evidence of multi-State cooperation and coordination with lenders, financiers, and owners; and

(C) other factors that would advance the purposes of this subtitle, as determined by the Secretary.

(c) MULTI-STATE FACILITATION.—The Secretary shall consult with States and relevant stakeholders with applicable expertise to establish a process to identify financing opportunities for manufacturing and industrial business with asset portfolios across multiple States.

(d) ADMINISTRATION.—A State receiving a grant under subsection (a) shall give a higher priority to covered programs that—

(1) leverage private and non-Federal sources of funding; and
(2) aim explicitly to expand the use of energy efficiency project financing using private sources of funding.

(e) **Davis-Bacon Compliance.**—

(1) **In general.**—All laborers and mechanics employed on projects funded directly by or assisted in whole or in part by this subtitle shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of part A of subtitle II of title 40, United States Code (commonly referred to as the “Davis-Bacon Act”).

(2) **Authority.**—With respect to the labor standards specified in this subsection, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40, United States Code.

(f) **Reports.**—

(1) **In general.**—Not later than 2 years after the date of receipt of a grant under this subtitle, a State shall submit to the Secretary, the Committee on Energy and Natural Resources of the Senate, and the Committee on Energy and Commerce of the
House of Representatives a report that describes the performance of covered programs carried out using the grant funds.

(2) DATA.—

(A) IN GENERAL.—A State receiving a grant under this subtitle, in cooperation with the Secretary, shall—

(i) collect and share data resulting from covered programs carried out under this subtitle; and

(ii) include in the report submitted under paragraph (1) any data collected under clause (i).

(B) DEPARTMENT DATABASES.—The Secretary shall incorporate data described in subparagraph (A) into appropriate databases of the Department, with provisions for the protection of confidential business data.

SEC. 2064. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—There is authorized to be appropriated to carry out this subtitle $250,000,000, to remain available until expended.

(b) STATE ENERGY OFFICES.—Funds provided to a State under this subtitle shall be provided to the office within the State that is responsible for developing the

Subtitle H—21st Century Energy Workforce

SEC. 2101. FINDINGS.

Congress finds that—

(1) the energy sector is the third-largest industry in the United States;

(2) 1,500,000 new skilled workers will be needed in the energy sector over the next 15 years; and

(3) a skilled workforce is a critical component of ensuring the growth of the energy sector in the United States.

SEC. 2102. DEFINITIONS.

In this subtitle:

(1) BOARD.—The term “Board” means the National Center of Excellence for the 21st Century Workforce Advisory Board established under section 2103(a).

(2) COMMUNITY COLLEGE.—The term “community college” means a junior or community college (as defined in section 312(f) of the Higher Education Act of 1965 (20 U.S.C. 1058(f))).
(3) **Program.**—The term “program” means the pilot program established under section 2104(a).

(4) **Veterans Service Organization.**—The term “veterans service organization” means an organization recognized by the Secretary of Veterans Affairs for the representation of veterans under section 5902 of title 38, United States Code.

**SEC. 2103. NATIONAL CENTER OF EXCELLENCE FOR THE 21ST CENTURY WORKFORCE.**

(a) **In General.**—The Secretary shall establish a nationwide advisory board, to be known as the “National Center of Excellence for the 21st Century Workforce Advisory Board”, to foster strategic vision, guidance, and networks for the energy industry.

(b) **Representatives.**—The members of the Board shall consist of energy sector stakeholders, including—

(1) representatives of relevant industries;

(2) experts in labor, economics, and workforce development;

(3) representatives of States and units of local government;

(4) representatives of elementary and secondary education and postsecondary education; and

(5) representatives of labor organizations.

(c) **Purposes.**—The purposes of the Board are—
(1) to support and develop training and science education programs that—

(A) meet the industry and labor needs of the energy and advanced manufacturing sectors; and

(B) provide opportunities for students to become qualified for placement in traditional and clean energy sector jobs;

(2) to align apprenticeship programs and industry certifications to further develop succession planning in the energy sector;

(3) to integrate educational standards to develop foundational skills for elementary and secondary education and postsecondary education to create a pipeline between education and career; and

(4) to support the replication of existing model energy curricula, particularly in new and emerging technologies, that lead to industry-wide credentials.

SEC. 2104. ENERGY WORKFORCE PILOT GRANT PROGRAM.

(a) In General.—Not later than 1 year after the date of enactment of this Act, the Secretary, in consultation with the Secretary of Labor and the Secretary of Education, shall establish a pilot program to award grants on a competitive basis to eligible entities for job training programs that lead to an industry-recognized credential.
(b) **Eligibility.**—To be eligible to receive a grant under this section, an entity shall be a public or nonprofit organization, or a consortium of such organizations, that—

(1) includes an advisory board of proportional participation, as determined by the Secretary, of relevant organizations, including—

(A) relevant energy industry organizations, including public and private employers;

(B) labor organizations; and

(C) elementary and secondary education and postsecondary education organizations;

(2) demonstrates experience in implementing and operating job training and education programs;

(3) demonstrates the ability to recruit and support individuals who plan to work in the energy industry in the successful completion of relevant job training and education programs; and

(4) provides students who complete the job training and education program with an industry-recognized credential.

(c) **Applications.**—Eligible entities desiring a grant under this section shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.
(d) PRIORITY.—In selecting eligible entities to receive grants under this section, the Secretary shall prioritize applicants that—

(1) house the job training and education programs in—

(A) a community college or institution of higher education that includes basic science and math education in the curriculum of the community college, institution of higher education; or

(B) an apprenticeship program registered with the Department of Labor;

(2) work with the Secretary of Defense or veterans service organizations to transition members of the Armed Forces and veterans to careers in the energy sector;

(3) apply as a State or regional consortia to leverage best practices already available in the State or region in which the community college or institution of higher education is located;

(4) have a State-supported entity included in the application;

(5) include an apprenticeship program registered with the Department of Labor as part of the job training and education program;
(6) develop a mentorship program for energy professionals and elementary and secondary education students;
(7) provide support services and career coaching;
(8) provide introductory energy workforce development and advanced manufacturing training; or
(9) work with an Indian tribe (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b)).

(e) ADDITIONAL CONSIDERATION.—In making grants under this section, the Secretary shall consider regional diversity.

(f) LIMITATION ON APPLICATIONS.—An eligible entity may not submit, either individually or as part of a joint application, more than 1 application for a grant under this section during any 1 fiscal year.

(g) LIMITATIONS ON AMOUNT OF GRANT.—The amount of a grant for any 1 year shall not exceed $1,000,000.

(h) COST SHARING.—

(1) FEDERAL SHARE.—The Federal share of the cost of a job training and education program carried out using a grant under this section shall be not greater than 65 percent.
(2) **Non-federal share.**—

(A) **In general.**—The non-Federal share of the cost of a job training and education program carried out using a grant under this section shall consist of not less than 50 percent cash.

(B) **Limitation.**—Not greater than 50 percent of the non-Federal contribution of the total cost of a job training and education program carried out using a grant under this section shall be in the form of in-kind contributions of goods or services fairly valued.

(i) **Reduction of duplication.**—Prior to submitting an application for a grant under this section, each applicant shall consult with the applicable agencies of the Federal Government and coordinate the proposed activities of the applicant with existing State and local programs.

(j) **Technical assistance.**—The Secretary shall provide technical assistance and capacity building to national and State energy partnerships, including the entities described in subsection (b)(1), to leverage the existing job training and education programs of the Department.

(k) **Report.**—The Secretary shall submit to Congress and make publicly available on the website of the
Department an annual report on the program established under this section, including a description of—

(1) the entities receiving grants;

(2) the activities carried out using the grants;

(3) best practices used to leverage the investment of the Federal Government;

(4) the rate of employment for participants after completing a job training and education program carried out using a grant; and

(5) an assessment of the results achieved by the program.

(l) Authorization of Appropriations.—There is $20,000,000 for each of fiscal years 2016 through 2019.

Subtitle I—Solar Installations

SEC. 2111. LOAN AND GRANT PROGRAM FOR SOLAR INSTALLATIONS IN LOW-INCOME AND UNDER-SERVED AREAS.

(a) Definitions.—In this section:

(1) Administrative expenses.—The term “administrative expenses” has such meaning as may be established by the Secretary.

(2) Community solar facility.—The term “community solar facility” means a community-
based distributed photovoltaic solar electricity generating facility that, as determined by the Secretary—

(A) is owned by a subscriber organization;

(B) has a nameplate rating of 2 megawatts or less;

(C) is located in or near a community of subscribers to whom the beneficial use of the electricity generated by the facility belongs; and

(D) reserves not less than 25 percent of the quantity of electricity generated by the facility for low-income households that are subscribers to the facility.

(3) GRANT-ELIGIBLE HOUSEHOLD.—The term “grant-eligible household” means a household the members of which—

(A) earn an income equal to 80 percent or less of the applicable area median income, as defined for the applicable year by the Secretary of Housing and Urban Development; and

(B) reside in an owner-occupied home.

(4) INDIAN TRIBE.—The term “Indian tribe” means any Indian tribe, band, nation, or other organized group or community, including any Alaskan Native village or regional or village corporation (as defined in, or established pursuant to, the Alaska
Native Claims Settlement Act (43 U.S.C. 1601 et seq.), that is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

(5) LOAN-ELIGIBLE ENTITY.—The term “loan-eligible entity” means—

(A) a nonprofit entity;

(B) a unit of State, territorial, or local government;

(C) an Indian tribe;

(D) a rural community (as defined in section 343(a) of the Consolidated Farm and Rural Development Act (7 U.S.C. 1991(a)); and

(E) any other national or regional entity that—

(i) deploys a safe, high-quality photovoltaic solar electricity generating facility for consumers under a model that maximizes energy savings to those consumers; and

(ii) has experience, as determined by the Secretary, installing solar systems using a job training or community volunteer-based installation model.
(6) **LOW-INCOME HOUSEHOLD.**—The term “low-income household” means a household with an income equal to 80 percent or less of the applicable area median income, as defined for the applicable year by the Secretary of Housing and Urban Development.

(7) **MULTI-FAMILY AFFORDABLE HOUSING.**—The term “multi-family affordable housing” means any federally subsidized affordable housing complex in which at least 50 percent of the units are reserved for low-income households.

(8) **PHOTOVOLTAIC SOLAR ELECTRICITY GENERATING FACILITY.**—The term “photovoltaic solar electricity generating facility” means—

(A) a generator that creates electricity from light photons; and

(B) the accompanying hardware enabling that electricity to flow—

(i) onto the electric grid; or

(ii) into an energy storage device.

(9) **SUBSCRIBER.**—The term “subscriber” means an electricity consumer who—

(A) owns a subscription, or an equivalent unit or share of the capacity or generation, of a community solar facility;
(B) has identified 1 or more physical locations—

(i) to which the subscription will be attributed;

(ii) within the same electric utility service territory, or within the same geographical area, as the community solar facility, in accordance with applicable State and local law; and

(iii) that may change from time to time, subject to the condition that the physical location shall be within the geographical limits allowed for a subscriber of the applicable community solar facility; and

(C) confirms the status of the consumer as a grant-eligible household for each applicable fiscal year.

(10) SUBSCRIPTION.—The term “subscription” means a share in the capacity, or a proportional interest in the solar electricity generation, of a community solar facility.

(11) UNDERSERVED AREA.—The term “underserved area” means a geographical area with low or
no photovoltaic solar deployment, as determined by the Secretary.

(b) Establishment of Loan and Grant Program.—

(1) In general.—The Secretary shall establish a program under which the Secretary shall provide loans and grants to grant-eligible households and loan-eligible entities for use in accordance with this section.

(2) Funding.—

(A) In general.—Subject to the availability of appropriations, the Secretary shall make grants and issue loans in accordance with this subsection.

(B) Loans.—Subject to subparagraph (D), not more than 50 percent of funds made available under subparagraph (A) for a fiscal year shall be used to provide loans to loan-eligible entities for—

(i) community solar facilities; or

(ii) multi-family affordable housing solar installations.

(C) Grants.—After allocating amounts to carry out subparagraph (B), the Secretary shall use the remaining funds made available under
subparagraph (A) for a fiscal year to provide
grants to grant-eligible households—

(i) to pay the upfront costs of photo-
voltaic solar electricity generating facilities;
or

(ii) for any other eligible use described
in subsection (e).

(D) INCREASE IN GRANT AMOUNT.—Not-
withstanding subparagraph (A), if the Secretary
determines that more than 50 percent of the
amounts described in that subparagraph are
necessary during any of fiscal years 2016
through 2030 to provide grants to encourage
innovative financing and installation models to
reach underserved markets, the Secretary may
use more than 50 percent of those amounts to
provide those grants.

(3) GOALS AND ACCOUNTABILITY.—

(A) IN GENERAL.—In providing loans and
grants under this subsection, the Secretary
shall take such actions as may be necessary to
ensure that—

(i) the assistance provided under this
subsection is used to facilitate and encour-
geage innovative solar installation and fi-
ancing models, under which the recipients develop and install photovoltaic solar electricity generating facilities that provide significant savings to low-income households while providing job training or community engagement opportunities with respect to each solar system installed;

(ii) loan and grant recipients shall—

(I) have installed not less than 600 kilowatts of photovoltaic solar energy during the 2-year period preceding the date on which the loan or grant is provided to ensure consumer protection; or

(II) until the goal described in subclause (I) is achieved, enter into partnership with an entity that—

(aa) has not less than 2 years of experience deploying solar photovoltaic systems for low-income households in a manner that maximizes the savings benefits of solar access; and

(bb) was primarily responsible for the installation of at
least 2 megawatts of solar energy
during the 2-year period pre-
ceeding the date on which the loan
or grant is provided;

(iii) the photovoltaic solar electricity
generating facilities installed using assist-
ance provided under this subsection are
safe, high-quality systems that comply with
local building and safety codes and stand-
ards;

(iv) the provision of assistance under
this subsection establishes and fosters a
partnership between the Federal Govern-
ment and grant-eligible households and
loan-eligible entities, resulting in efficient
development of solar installations with—

(I) minimal governmental inter-
vention;

(II) limited governmental regula-
tion; and

(III) significant involvement by
nonprofit and private entities;

(v) solar projects installed using as-
sistance provided under this subsection—

(I) shall include job training; and
(II) may include community participation in which job trainees and volunteers assist in the development of solar projects;

(vi) assistance provided under this subsection prioritizes development in—

(I) areas with low photovoltaic penetration;

(II) rural areas;

(III) Indian tribal areas; and

(IV) other underserved areas, including Alaskan Native and Appalachian communities;

(vii) solar systems are developed using assistance provided under this subsection on a geographically diverse basis among the grant-eligible households and loan-eligible entities; and

(viii) to the maximum extent practicable, solar installation activities for which assistance is provided under this section leverage, or connect grant-eligible households to, federally or locally subsidized weatherization and energy effi-
ciency efforts that meet or exceed local energy efficiency standards.

(B) DETERMINATION.—If, at any time, the Secretary determines that the goals described in this paragraph cannot be met by providing assistance in accordance with this subsection, the Secretary shall immediately submit to the appropriate committees of Congress a written notice of that determination, including any proposed changes necessary to achieve the goals under this paragraph.

(4) COMMUNITY SOLAR FACILITIES.—

(A) IN GENERAL.—A community solar facility may use a loan provided under this subsection only to offset the costs of generation and provision of solar energy to low-income households that are subscribers of the community solar facility.

(B) TRANSFER AND ASSIGNMENT OF SUBSCRIPTIONS.—A subscription to a community solar facility that receives assistance under this subsection may be transferred or assigned by the subscriber to—

(i) any subscriber organization; or
(ii) any individual or entity who qualifies to be a subscriber to that community solar facility.

(C) Treatment.—

(i) In General.—No owner, operator, or subscriber of a community solar facility that receives assistance under this subsection shall be subject to regulation by the Federal Energy Regulatory Commission solely as a result of an interest in the community solar facility.

(ii) Price of Subscription.—The price paid for any subscription to a community solar facility shall not be subject to the regulation of any Federal department, agency, or commission.

(c) National Competition.—

(1) In General.—The Secretary shall select grant-eligible households and loan-eligible entities to receive loans or grants under this section through a nationwide competitive process, to be established by the Secretary.

(2) Applications.—To be eligible to receive a loan or grant under this section, a grant-eligible household or loan-eligible entity shall submit to the
Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

(3) REQUIREMENTS.—In selecting grant-eligible households and loan-eligible entities to receive loans or grants under this section, the Secretary shall, at a minimum—

(A) require that the grant-eligible household or loan-eligible entity—

(i) enter into a grant or loan agreement, as applicable, under subsection (d); and

(ii) has obtained financial commitments (or has demonstrated the capacity to obtain financial commitments) necessary to comply with that agreement;

(B) ensure that loans and grants are provided, and amounts are used, in a manner that results in geographical diversity throughout the United States and within States, territories, and Indian tribal land among photovoltaic solar electricity generating facilities installed using the assistance provided under this section;

(C) to the maximum extent practicable, expand photovoltaic solar energy availability to—
(i) geographical areas, throughout the
United States and within States, territories, and Indian tribal land, with—

(I) low photovoltaic solar penetration; or

(II) areas with a higher cost burden with respect to the deployment or
installation of photovoltaic solar electricity generating facilities;

(ii) rural communities;

(iii) Indian tribes; and

(iv) other underserved areas, including Appalachian and Alaska Native communities;

(D) take into account the warranty period
and quality of the applicable photovoltaic solar
electricity generating facility equipment and any
necessary interconnecting equipment; and

(E) ensure all calculations for estimated
household energy savings are based solely on
electricity offsets from the photovoltaic solar
electricity generating facilities.

(d) Loan and Grant Agreements.—

(1) In General.—As a condition of receiving a
loan or grant under this section, a grant-eligible
household or loan-eligible entity shall enter into a
loan or grant agreement, as applicable, with the Sec-
retary.

(2) REQUIREMENTS.—A loan or grant agree-
ment under this subsection shall—

(A) require the grant-eligible household or
loan-eligible entity—

(i) to use the assistance provided
under this section only in accordance with
this section;

(ii) to install such number of solar
systems with such defined capacity target
(expressed in megawatts) as may be estab-
lished by the Secretary, taking into con-
sideration the costs associated with car-
ying out loan or grant obligations in the
areas in which the solar systems will be de-
developed;

(iii) to use the assistance in a manner
that leverages other sources of funding
(other than loans or grants under this sec-
tion), including private or public funds, in
developing the solar projects; and

(iv) to establish loan terms, if applica-
ble, that maximize the benefit to the low-
income households receiving solar energy
from the loan-eligible entity;

(B) require the Secretary to rescind any
amounts provided to the grant-eligible house-
hold or loan-eligible entity that are not used
during the 2-year period beginning on the date
on which the amounts are initially distributed
to the grant-eligible household or loan-eligible
entity, except in any case in which the grant-
eligible household or loan-eligible entity has
demonstrated to the satisfaction of the Sec-
retary that a longer period, not to exceed 3
years after the date of initial distribution, is
necessary to deliver proposed services;

(C) for a loan provided under this section,
establish—

(i) an interest rate equal to the then-
current cost of funds to the Department of
the Treasury for obligations of comparable
maturity to the loan; and

(ii) a payout time that maximizes the
savings to customers during the effective
period of the agreement; and
(D) contain such other terms as the Secretary may require to ensure compliance with the requirements of this section.

(e) USE.—A grant-eligible household or loan-eligible entity shall use a loan or grant provided under this section only for the following activities, for the purpose of developing new photovoltaic solar projects in the United States for low-income households and individuals who otherwise would likely be unable to afford or purchase photovoltaic solar systems:

(1) PHOTOVOLTAIC SOLAR EQUIPMENT AND INSTALLATION.—To pay the costs of—

(A) solar equipment, including only photovoltaic solar equipment and storage and all hardware or software components relating to safely producing, monitoring, and connecting the system to the electric grid or onsite storage; and

(B) installation, including all direct labor associated with installing the photovoltaic solar equipment.

(2) JOB TRAINING.—To fund onsite job training and community or volunteer engagement, including—
(A) only job training costs directly associated with the solar projects funded under this section; and

(B) job training opportunities that may cover the full range of the solar value chain, such as marketing and outreach, customer acquisition, system design, and installation positions.

(3) Deployment Support.—To fund entities that have a demonstrated ability, as determined by the Secretary—

(A) to advise State and local entities regarding low-income solar policy, regulatory, and program design to continue and expand the work of the entities;

(B) to foster community outreach and education regarding the benefits of photovoltaic solar energy for low-income and disadvantaged communities; or

(C) to provide apprenticeship program opportunities registered and approved by—

   (i) the Office of Apprenticeship of the Department of Labor pursuant to part 29 of title 29, Code of Federal Regulations (or successor regulations); or
(ii) a State Apprenticeship Agency recognized by that Office.

(4) Administration.—To pay the administrative expenses of the grant-eligible household or loan-eligible entity, including preproject feasibility efforts, in carrying out the duties of the Secretary associated with delivering proposed services, subject to the requirement that not more than 15 percent of the total amount of the assistance provided to the grant-eligible household or loan-eligible entity under this section may be used for administrative expenses.

(f) Compliance.—

(1) Records and audits.—During the period beginning on the date of initial distribution to a grant-eligible household or loan-eligible entity of a loan or grant under this section and ending on the termination date of the loan or grant under subsection (g), the grant-eligible household or loan-eligible entity shall maintain such records and adopt such administrative practices as the Secretary may require to ensure compliance with the requirements of this section and the applicable loan or grant agreement.

(2) Determination by Secretary.—If the Secretary determines that a grant-eligible household
or loan-eligible entity that receives a grant or loan
under this section has not, during the 2-year period
beginning on the date of initial distribution to the
grant-eligible household or loan-eligible entity of the
assistance (or such longer period as is established
under subsection (d)(2)(B)), substantially fulfilled
the obligations of the grant-eligible household or
loan-eligible entity under the applicable loan or
grant agreement, the Secretary shall—

(A) rescind the balance of any funds dis-
tributed to, but not used by, the grant-eligible
household or loan-eligible entity under this sec-
tion; and

(B) use those amounts to provide other
loans or grants in accordance with this section.

(g) TERMINATION.—The Secretary shall terminate a
loan or grant provided under this section on a determina-
tion that the total amount of the loan or grant (excluding
any interest, fees, and other earnings of the loan or grant)
has been—

(1) fully expended by the grant-eligible house-
hold or loan-eligible entity; or

(2) returned to the Secretary.

(h) REGULATIONS.—Not later than 90 days after the
date of enactment of this Act, the Secretary shall promul-
gate such regulations as the Secretary determines to be necessary to carry out this section, to take effect on the date of promulgation.

(i) FUNDING.—There is authorized to be appropriated to the Secretary to carry out this section $200,000,000 for each of fiscal years 2016 through 2030, to remain available until expended.

Subtitle J—Local Energy Supply and Resiliency Act

SEC. 2121. DEFINITIONS.

In this subtitle:

(1) COMBINED HEAT AND POWER SYSTEM.—The term “combined heat and power system” means generation of electric energy and heat in a single, integrated system that meets the efficiency criteria in clauses (ii) and (iii) of section 48(e)(3)(A) of the Internal Revenue Code of 1986, under which heat that is conventionally rejected is recovered and used to meet thermal energy requirements.

(2) DEMAND RESPONSE.—The term “demand response” means changes in electric usage by electric utility customers from the normal consumption patterns of the customers in response to—

(A) changes in the price of electricity over time; or
(B) incentive payments designed to induce lower electricity use at times of high wholesale market prices or when system reliability is jeopardized.

(3) DISTRIBUTED ENERGY.—The term “distributed energy” means energy sources and systems that—

(A) produce electric or thermal energy close to the point of use using renewable energy resources or waste thermal energy;

(B) generate electricity using a combined heat and power system;

(C) distribute electricity in microgrids;

(D) store electric or thermal energy; or

(E) distribute thermal energy or transfer thermal energy to building heating and cooling systems through a district energy system.

(4) DISTRICT ENERGY SYSTEM.—The term “district energy system” means a system that provides thermal energy to buildings and other energy consumers from 1 or more plants to individual buildings to provide space heating, air conditioning, domestic hot water, industrial process energy, and other end uses.
(5) **ISLANDING.**—The term “islanding” means a distributed generator or energy storage device continuing to power a location in the absence of electric power from the primary source.

(6) **LOAN.**—The term “loan” has the meaning given the term “direct loan” in section 502 of the Federal Credit Reform Act of 1990 (2 U.S.C. 661a).

(7) **MICROGRID.**—The term “microgrid” means an integrated energy system consisting of interconnected loads and distributed energy resources, including generators and energy storage devices, within clearly defined electrical boundaries that—

(A) acts as a single controllable entity with respect to the grid; and

(B) can connect and disconnect from the grid to operate in both grid-connected mode and island mode.

(8) **RENEWABLE ENERGY SOURCE.**—The term “renewable energy source” includes—

(A) biomass;

(B) geothermal energy;

(C) hydropower;

(D) landfill gas;

(E) municipal solid waste;
(F) ocean (including tidal, wave, current, and thermal) energy;
(G) organic waste;
(H) photosynthetic processes;
(I) photovoltaic energy;
(J) solar energy; and
(K) wind.

(9) RENEWABLE THERMAL ENERGY.—The term “renewable thermal energy” means heating or cooling energy derived from a renewable energy resource.

(10) THERMAL ENERGY.—The term “thermal energy” means—

(A) heating energy in the form of hot water or steam that is used to provide space heating, domestic hot water, or process heat; or

(B) cooling energy in the form of chilled water, ice, or other media that is used to provide air conditioning, or process cooling.

(11) WASTE THERMAL ENERGY.—The term “waste thermal energy” means energy that—

(A) is contained in—

(i) exhaust gases, exhaust steam, condenser water, jacket cooling heat, or lubricating oil in power generation systems;
(ii) exhaust heat, hot liquids, or flared gas from any industrial process;

(iii) waste gas or industrial tail gas that would otherwise be flared, incinerated, or vented;

(iv) a pressure drop in any gas, excluding any pressure drop to a condenser that subsequently vents the resulting heat;

(v) condenser water from chilled water or refrigeration plants; or

(vi) any other form of waste energy, as determined by the Secretary; and

(B)(i) in the case of an existing facility, is not being used; or

(ii) in the case of a new facility, is not conventionally used in comparable systems.

SEC. 2122. DISTRIBUTED ENERGY LOAN PROGRAM.

(a) Loan Program.—

(1) In general.—Subject to the provisions of this subsection and subsections (b) and (c), the Secretary shall establish a program to provide to eligible entities—

(A) loans for the deployment of distributed energy systems in a specific project; and
(B) loans to provide funding for programs to finance the deployment of multiple distributed energy systems through a revolving loan fund, credit enhancement program, or other financial assistance program.

(2) ELIGIBILITY.—Entities eligible to receive a loan under paragraph (1) include—

(A) a State, territory, or possession of the United States;

(B) a State energy office;

(C) a tribal organization (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b));

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

(E) an electric utility, including—

(i) a rural electric cooperative;

(ii) a municipally owned electric utility; and

(iii) an investor-owned utility.

(3) SELECTION REQUIREMENTS.—In selecting eligible entities to receive loans under this section, the Secretary shall, to the maximum extent practicable, ensure—
(A) regional diversity among eligible entities to receive loans under this section, including participation by rural States and small States; and

(B) that specific projects selected for loans—

(i) expand on the existing technology deployment program of the Department of Energy; and

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

(4) OBJECTIVES.—Each deployment selected for a loan under paragraph (1) shall include 1 or more of the following objectives:

(A) Improved security and resiliency of energy supply in the event of disruptions caused by extreme weather events, grid equipment or software failure, or terrorist acts.

(B) Implementation of distributed energy in order to increase use of local renewable energy resources and waste thermal energy sources.

(C) Enhanced feasibility of microgrids, demand response, or islanding;
(D) Enhanced management of peak loads for consumers and the grid.

(E) Enhanced reliability in rural areas, including high energy cost rural areas.

(5) Restriction on use of funds.—Any eligible entity that receives a loan under paragraph (1) may only use the loan to fund programs relating to the deployment of distributed energy systems.

(b) Loan terms and conditions.—

(1) Terms and conditions.—Notwithstanding any other provision of law, in providing a loan under this section, the Secretary shall provide the loan on such terms and conditions as the Secretary determines, after consultation with the Secretary of the Treasury, in accordance with this section.

(2) Specific appropriation.—No loan shall be made unless an appropriation for the full amount of the loan has been specifically provided for that purpose.

(3) Repayment.—No loan shall be made unless the Secretary determines that there is reasonable prospect of repayment of the principal and interest by the borrower of the loan.

(4) Interest rate.—A loan provided under this section shall bear interest at a fixed rate that
is equal or approximately equal, in the determination of the Secretary, to the interest rate for Treasury securities of comparable maturity.

(5) Term.—The term of the loan shall require full repayment over a period not to exceed the lesser of—

(A) 20 years; or

(B) 90 percent of the projected useful life of the physical asset to be financed by the loan (as determined by the Secretary).

(6) Use of Payments.—Payments of principal and interest on the loan shall—

(A) be retained by the Secretary to support energy research and development activities; and

(B) remain available until expended, subject to such conditions as are contained in annual appropriations Acts.

(7) No Penalty on Early Repayment.—The Secretary may not assess any penalty for early repayment of a loan provided under this section.

(8) Return of Unused Portion.—In order to receive a loan under this section, an eligible entity shall agree to return to the general fund of the Treasury any portion of the loan amount that is unused by the eligible entity within a reasonable period
of time after the date of the disbursement of the loan, as determined by the Secretary.

(9) COMPARABLE WAGE RATES.—Each laborer and mechanic employed by a contractor or subcontractor in performance of construction work financed, in whole or in part, by the loan shall be paid wages at rates not less than the rates prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code.

(c) RULES AND PROCEDURES; DISBURSEMENT OF LOANS.—

(1) RULES AND PROCEDURES.—Not later than 180 days after the date of enactment of this Act, the Secretary shall adopt rules and procedures for carrying out the loan program under subsection (a).

(2) DISBURSEMENT OF LOANS.—Not later than 1 year after the date on which the rules and procedures under paragraph (1) are established, the Secretary shall disburse the initial loans provided under this section.

(d) REPORTS.—Not later than 2 years after the date of receipt of the loan, and annually thereafter for the term of the loan, an eligible entity that receives a loan under
this section shall submit to the Secretary a report describ-
ing the performance of each program and activity carried
out using the loan, including itemized loan performance
data.

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

SEC. 2123. TECHNICAL ASSISTANCE AND GRANT PROGRAM.

(a) Establishment.—

(1) IN GENERAL.—The Secretary shall establish
a technical assistance and grant program (referred
to in this section as the “program”)—

(A) to disseminate information and provide
technical assistance directly to eligible entities
so the eligible entities can identify, evaluate,
plan, and design distributed energy systems;

and

(B) to make grants to eligible entities so
that the eligible entities may contract to obtain
technical assistance to identify, evaluate, plan,
and design distributed energy systems.

(2) TECHNICAL ASSISTANCE.—The technical
assistance described in paragraph (1) shall include
assistance with 1 or more of the following activities
relating to distributed energy systems:
(A) Identification of opportunities to use distributed energy systems.

(B) Assessment of technical and economic characteristics.

(C) Utility interconnection.

(D) Permitting and siting issues.

(E) Business planning and financial analysis.

(F) Engineering design.

(3) INFORMATION DISSEMINATION.—The information disseminated under paragraph (1)(A) shall include—

(A) information relating to the topics described in paragraph (2), including case studies of successful examples;

(B) computer software and databases for assessment, design, and operation and maintenance of distributed energy systems; and

(C) public databases that track the operation and deployment of existing and planned distributed energy systems.

(b) ELIGIBILITY.—Any nonprofit or for-profit entity shall be eligible to receive technical assistance and grants under the program.

(c) APPLICATIONS.—
(1) IN GENERAL.—An eligible entity desiring technical assistance or grants under the program shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

(2) APPLICATION PROCESS.—The Secretary shall seek applications for technical assistance and grants under the program—

(A) on a competitive basis; and

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

(3) PRIORITIES.—In selecting eligible entities for technical assistance and grants under the program, the Secretary shall give priority to eligible entities with projects that have the greatest potential for—

(A) facilitating the use of renewable energy resources;

(B) strengthening the reliability and resiliency of energy infrastructure to the impact of extreme weather events, power grid failures, and interruptions in supply of fossil fuels;

(C) improving the feasibility of microgrids or islanding, particularly in rural areas, including high energy cost rural areas;
(D) minimizing environmental impact, including regulated air pollutants and greenhouse gas emissions; and

(E) maximizing local job creation.

(d) GRANTS.—On application by an eligible entity, the Secretary may award grants to the eligible entity to provide funds to cover not more than—

(1) 100 percent of the costs of the initial assessment to identify opportunities;

(2) 75 percent of the cost of feasibility studies to assess the potential for the implementation;

(3) 60 percent of the cost of guidance on overcoming barriers to implementation, including financial, contracting, siting, and permitting issues; and

(4) 45 percent of the cost of detailed engineering.

(e) RULES AND PROCEDURES.—

(1) RULES.—Not later than 180 days after the date of enactment of this Act, the Secretary shall adopt rules and procedures for carrying out the program.

(2) GRANTS.—Not later than 120 days after the date of issuance of the rules and procedures for the program, the Secretary shall issue grants under this subtitle.
(f) **REPORTS.**—The Secretary shall submit to Congress and make available to the public—

(1) not less frequently than once every 2 years, a report describing the performance of the program under this section, including a synthesis and analysis of the information provided in the reports submitted to the Secretary under section 2122(d); and

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

(g) **AUTHORIZATION OF APPROPRIATIONS.**—There is authorized to be appropriated to carry out this section $250,000,000 for the period of fiscal years 2016 through 2020, to remain available until expended.

**Subtitle K—Geothermal Energy Opportunities**

**SEC. 2131. NATIONAL GOALS FOR PRODUCTION AND SITE IDENTIFICATION.**

It is the sense of Congress that, not later than 10 years after the date of enactment of this Act—

(1) the Secretary of the Interior should seek to have approved more than 15,000 megawatts of new geothermal energy capacity on public land across a
geographically diverse set of States using the full range of available technologies; and

(2) the Director of the Geological Survey and the Secretary of Energy should identify sites capable of producing a total of 50,000 megawatts of geothermal power, using the full range of available technologies.

SEC. 2132. PRIORITY AREAS FOR DEVELOPMENT ON FEDERAL LAND.

The Director of the Bureau of Land Management, in consultation with other appropriate Federal officials, shall—

(1) identify high-priority areas for new geothermal development; and

(2) take any actions the Director determines necessary to facilitate that development, consistent with applicable laws.

SEC. 2133. FACILITATION OF COPRODUCTION OF GEOTHERMAL ENERGY ON OIL AND GAS LEASES.

Section 4(b) of the Geothermal Steam Act of 1970 (30 U.S.C. 1003(b)) is amended by adding at the end the following:

“(4) Land subject to oil and gas lease.—Land under an oil and gas lease issued pursuant to the Mineral Leasing Act (30 U.S.C. 181 et seq.) or
the Mineral Leasing Act for Acquired Lands (30
U.S.C. 351 et seq.) that is subject to an approved
application for permit to drill and from which oil
and gas production is occurring may be available for
noncompetitive leasing under this section to the
holder of the oil and gas lease—

“(A) on a determination that—

“(i) geothermal energy will be pro-
duced from a well producing or capable of
producing oil and gas; and

“(ii) national energy security will be
improved by the issuance of such a lease;

and

“(B) to provide for the coproduction of
gleothermal energy with oil and gas.”.

SEC. 2134. COST-SHARED EXPLORATION.

(a) In General.—To promote the goals described
in section 2131, the Secretary may conduct a federally
funded program of cost-shared drilling with industry part-
ners—

(1) to explore and document new geothermal re-
ources in the United States; and

(2) to develop improved tools and methods for
geothermal resource identification and extraction,
with the goal of achieving material reductions in the
cost of exploration with a corresponding increase in the likelihood of drilling success.

(b) Grants.—

(1) In general.—To carry out the program described in subsection (a), the Secretary may award cost-share grants on a competitive and merit basis to eligible applicants to support exploration drilling and related activities.

(2) Project criteria.—In selecting applicants to receive grants under paragraph (1), the Secretary shall—

(A) give preference to applicants proposing projects located in a variety of geological and geographical settings with previously unexplored, underexplored, or unproven geothermal resources; and

(B) consider—

(i) the potential that the unproven geothermal resources would be explored and developed under the proposed project;

(ii) the expertise and experience of an applicant in developing geothermal resources; and
(iii) the contribution the proposed project would make toward meeting the goals described in section 2131.

(c) DATA SHARING.—

(1) IN GENERAL.—Data from all exploratory wells that are carried out under the program described in subsection (a) shall be provided to the Secretary and the Secretary of the Interior for—

(A) use in mapping national geothermal resources; and

(B) other purposes, including—

(i) subsurface geological data;

(ii) metadata;

(iii) borehole temperature data; and

(iv) inclusion in the National Geothermal Data System of the Department.

(2) SHARING OF CONFIDENTIAL DATA.—Not later than 2 years after the date of enactment of this Act, confidential data from all exploratory wells that are carried out under the program described in subsection (a) shall be provided to the Secretary and the Secretary of the Interior for the purposes described in subparagraphs (A) and (B) of paragraph (1), to be available for a period of time to be deter-
mined by the Secretary and the Secretary of the Interior.

SEC. 2135. USE OF GEOTHERMAL LEASE REVENUES.

(a) Amounts Deposited.—Notwithstanding any other provision of law, beginning in the first full fiscal year after the date of enactment of this Act, any amounts received by the United States as rentals, royalties, and other payments required under leases pursuant to the Geothermal Steam Act of 1970 (30 U.S.C. 1001 et seq.) (excluding funds required to be paid to State and county governments) and from new geothermal leases issued after the date of enactment of this Act shall be deposited into a separate account in the Treasury.

(b) Use of Deposits.—Amounts deposited under subsection (a) shall be available to the Secretary for expenditure, without further appropriation or fiscal year limitation, to carry out section 2134.

(c) Transfer of Funds.—To promote the goals described in section 2131, the Secretary may authorize the expenditure or transfer of any funds that are necessary to other cooperating Federal agencies.
SEC. 2136. NONCOMPETITIVE LEASING OF ADJOINING AREAS FOR DEVELOPMENT OF GEOTHERMAL RESOURCES.

Section 4(b) of the Geothermal Steam Act of 1970 (30 U.S.C. 1003(b)) (as amended by section 2133) is amended by adding at the end the following:

“(5) ADJOINING LAND.—

“(A) DEFINITIONS.—In this paragraph:

“(i) FAIR MARKET VALUE PER ACRE.—The term ‘fair market value per acre’ means a dollar amount per acre that—

“(I) except as provided in this clause, shall be equal to the market value per acre (taking into account the determination under subparagraph (B)(iii) regarding a valid discovery on the adjoining land), as determined by the Secretary under regulations issued under this paragraph;

“(II) shall be determined by the Secretary with respect to a lease under this paragraph, by not later than the end of the 180-day period beginning on the date the Secretary
receives an application for the lease; and

“(III) shall be not less than the greater of—

“(aa) 4 times the median amount paid per acre for all land leased under this Act during the preceding year; and

“(bb) $50.

“(ii) INDUSTRY STANDARDS.—The term ‘industry standards’ means the standards by which a qualified geothermal professional assesses whether downhole or flowing temperature measurements with indications of permeability are sufficient to produce energy from geothermal resources, as determined through flow or injection testing or measurement of lost circulation while drilling.

“(iii) QUALIFIED FEDERAL LAND.—The term ‘qualified Federal land’ means land that is otherwise available for leasing under this Act.

“(iv) QUALIFIED GEOTHERMAL PROFESSIONAL.—The term ‘qualified geo-
1 thermal professional’ means an individual
2 who is an engineer or geoscientist in good
3 professional standing with at least 5 years
4 of experience in geothermal exploration,
5 development, or project assessment.
6 "(v) QUALIFIED LESSEE.—The term
7 ‘qualified lessee’ means a person that is el-
8 igible to hold a geothermal lease under this
9 Act (including applicable regulations).
10 "(vi) VALID DISCOVERY.—The term
11 ‘valid discovery’ means a discovery of a
12 geothermal resource by a new or existing
13 slim hole or production well, that exhibits
14 downhole or flowing temperature measure-
15 ments with indications of permeability that
16 are sufficient to meet industry standards.
17 "(B) AUTHORITY.—An area of qualified
18 Federal land that adjoins other land for which
19 a qualified lessee holds a legal right to develop
20 geothermal resources may be available for a
21 noncompetitive lease under this section to the
22 qualified lessee at the fair market value per
23 acre, if—
24 "(i) the area of qualified Federal
25 land—
“(I) consists of not less than 1 acre and not more than 640 acres; and

“(II) is not already leased under this Act or nominated to be leased under subsection (a);

“(ii) the qualified lessee has not previously received a noncompetitive lease under this paragraph in connection with the valid discovery for which data has been submitted under clause (iii)(I); and

“(iii) sufficient geological and other technical data prepared by a qualified geothermal professional has been submitted by the qualified lessee to the applicable Federal land management agency that would lead individuals who are experienced in the subject matter to believe that—

“(I) there is a valid discovery of geothermal resources on the land for which the qualified lessee holds the legal right to develop geothermal resources; and

“(II) that thermal feature extends into the adjoining areas.
“(C) Determination of fair market value.—

“(i) In general.—The Secretary shall—

“(I) publish a notice of any request to lease land under this paragraph;

“(II) determine fair market value for purposes of this paragraph in accordance with procedures for making those determinations that are established by regulations issued by the Secretary;

“(III) provide to a qualified lessee and publish, with an opportunity for public comment for a period of 30 days, any proposed determination under this subparagraph of the fair market value of an area that the qualified lessee seeks to lease under this paragraph; and

“(IV) provide to the qualified lessee and any adversely affected party the opportunity to appeal the final determination of fair market value in an
administrative proceeding before the applicable Federal land management agency, in accordance with applicable law (including regulations).

“(ii) LIMITATION ON NOMINATION.—After publication of a notice of request to lease land under this paragraph, the Secretary may not accept under subsection (a) any nomination of the land for leasing unless the request has been denied or withdrawn.

“(iii) ANNUAL RENTAL.—For purposes of section 5(a)(3), a lease awarded under this paragraph shall be considered a lease awarded in a competitive lease sale.

“(D) REGULATIONS.—Not later than 270 days after the date of enactment of this paragraph, the Secretary shall issue regulations to carry out this paragraph.”.

SEC. 2137. LARGE-SCALE GEOTHERMAL ENERGY.

Title VI of the Energy Independence and Security Act of 2007 is amended by inserting after section 616 (42 U.S.C. 17195) the following:

“SEC. 616A. LARGE-SCALE GEOTHERMAL ENERGY.

“(a) FINDINGS.—Congress finds that—
“(1) the Geothermal Technologies Program of the Office of Energy Efficiency and Renewable Energy of the Department has included a focus on direct use of geothermal energy in the low-temperature geothermal energy subprogram (including in the development of a research and development plan for the program);

“(2) the Building Technologies Program of the Office of Energy Efficiency and Renewable Energy of the Department—

“(A) is focused on the energy demand and energy efficiency of buildings; and

“(B) includes geothermal heat pumps as a component technology in the residential and commercial deployment activities of the program; and

“(3) geothermal heat pumps and direct use of geothermal energy, especially in large-scale applications, can make a significant contribution to the use of renewable energy but are underrepresented in research, development, demonstration, and commercialization.

“(b) PURPOSES.—The purposes of this section are—
“(1) to improve the components, processes, and systems used for geothermal heat pumps and the direct use of geothermal energy; and

“(2) to increase the energy efficiency, lower the cost, increase the use, and improve and demonstrate the applicability of geothermal heat pumps to, and the direct use of geothermal energy in, large buildings, commercial districts, residential communities, and large municipal, agricultural, or industrial projects.

“(c) DEFINITIONS.—In this section:

“(1) DIRECT USE OF GEOTHERMAL ENERGY.—The term ‘direct use of geothermal energy’ means systems that use water that is at a temperature between approximately 38 degrees Celsius and 149 degrees Celsius directly or through a heat exchanger to provide—

“(A) heating to buildings; or

“(B) heat required for industrial processes, agriculture, aquaculture, and other facilities.

“(2) GEOTHERMAL HEAT PUMP.—The term ‘geothermal heat pump’ means a system that provides heating and cooling by exchanging heat from shallow ground or surface water using—
“(A) a closed loop system, which transfers heat by way of buried or immersed pipes that contain a mix of water and working fluid; or

“(B) an open loop system, which circulates ground or surface water directly into the building and returns the water to the same aquifer or surface water source.

“(3) LARGE-SCALE APPLICATION.—The term ‘large-scale application’ means an application for space or process heating or cooling for large entities with a name-plate capacity, expected resource, or rating of 10 or more megawatts, such as a large building, commercial district, residential community, or a large municipal, agricultural, or industrial project.

“(4) SECRETARY.—The term ‘Secretary’ means the Secretary of Energy, acting through the Assistant Secretary for Energy Efficiency and Renewable Energy.

“(d) PROGRAM.—

“(1) IN GENERAL.—The Secretary shall establish a program of research, development, and demonstration for geothermal heat pumps and the direct use of geothermal energy.
“(2) AREAS.—The program may include research, development, demonstration, and commercial application of—

“(A) geothermal ground loop efficiency improvements through more efficient heat transfer fluids;

“(B) geothermal ground loop efficiency improvements through more efficient thermal grouts for wells and trenches;

“(C) geothermal ground loop installation cost reduction through—

“(i) improved drilling methods;

“(ii) improvements in drilling equipment;

“(iii) improvements in design methodology and energy analysis procedures; and

“(iv) improved methods for determination of ground thermal properties and ground temperatures;

“(D) installing geothermal ground loops near the foundation walls of new construction to take advantage of existing structures;

“(E) using gray or black wastewater as a method of heat exchange;
“(F) improving geothermal heat pump system economics through integration of geothermal systems with other building systems, including providing hot and cold water and rejecting or circulating industrial process heat through refrigeration heat rejection and waste heat recovery;

“(G) advanced geothermal systems using variable pumping rates to increase efficiency;

“(H) geothermal heat pump efficiency improvements;

“(I) use of hot water found in mines and mine shafts and other surface waters as the heat exchange medium;

“(J) heating of districts, neighborhoods, communities, large commercial or public buildings (including office, retail, educational, government, and institutional buildings and multifamily residential buildings and campuses), and industrial and manufacturing facilities;

“(K) geothermal system integration with solar thermal water heating or cool roofs and solar-regenerated desiccants to balance loads and use building hot water to store geothermal energy;
“(L) use of hot water coproduced from oil and gas recovery;

“(M) use of water sources at a temperature of less than 150 degrees Celsius for direct use;

“(N) system integration of direct use with geothermal electricity production; and

“(O) coproduction of heat and power, including on-site use.

“(3) ENVIRONMENTAL IMPACTS.—In carrying out the program, the Secretary shall identify and mitigate potential environmental impacts in accordance with section 614(c).

“(e) GRANTS.—

“(1) IN GENERAL.—The Secretary shall make grants available to State and local governments, institutions of higher education, nonprofit entities, utilities, and for-profit companies (including manufacturers of heat-pump and direct-use components and systems) to promote the development of geothermal heat pumps and the direct use of geothermal energy.

“(2) PRIORITY.—In making grants under this subsection, the Secretary shall give priority to proposals that apply to large buildings (including office,
retail, educational, government, institutional, and multifamily residential buildings and campuses and industrial and manufacturing facilities), commercial districts, and residential communities.

“(3) NATIONAL SOLICITATION.—Not later than 180 days after the date of enactment of this section, the Secretary shall conduct a national solicitation for applications for grants under this section.

“(f) REPORTS.—

“(1) IN GENERAL.—Not later than 2 years after the date of enactment of this section and annually thereafter, the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report on progress made and results obtained under this section to develop geothermal heat pumps and direct use of geothermal energy.

“(2) AREAS.—Each of the reports required under this subsection shall include—

“(A) an analysis of progress made in each of the areas described in subsection (d)(2); and

“(B)(i) a description of any relevant recommendations made during a review of the program; and
“(ii) any plans to address the recommenda-
ations under clause (i).”.

SEC. 2138. REPORT TO CONGRESS.

Not later than 3 years after the date of enactment of this Act and not less frequently than once every 5 years thereafter, the Secretary and the Secretary of the Interior shall submit to the appropriate committees of Congress a report describing the progress made towards achieving the goals described in section 2131.

SEC. 2139. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to carry out this subtitle such sums as are necessary.

Subtitle L—Clean Coal Technology Research

SEC. 2141. FOSSIL ENERGY.

Section 961(a) of the Energy Policy Act of 2005 (42 U.S.C. 16291(a)) is amended by adding at the end the following:

“(8) Improving the conversion, use, and storage of carbon dioxide produced from fossil fuels.”.
Subtitle M—Long-term Contracts

SEC. 2151. CONTRACTS FOR FEDERAL PURCHASES OF ENERGY.

Part 3 of title V of the National Energy Conservation Policy Act is amended by adding after section 553 (42 U.S.C. 8259b) the following:

"SEC. 554. LONG-TERM CONTRACTS FOR ENERGY.

“(a) IN GENERAL.—Notwithstanding section 501(b)(1)(B) of title 40, United States Code, a contract for the acquisition of renewable energy or energy from cogeneration facilities for the Federal Government may be made for a period not to exceed 30 years.

“(b) STANDARDIZED ENERGY PURCHASE AGREEMENT.—Not later than 90 days after the date of enactment of this section, the Secretary, acting through the Federal Energy Management Program, shall publish a standardized energy purchase agreement setting forth commercial terms and conditions that agencies may use to acquire renewable energy or energy from cogeneration facilities.

“(c) TECHNICAL ASSISTANCE.—The Secretary shall provide technical assistance to assist agencies in implementing this section.”.

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Subtitle N—Promoting Renewable Energy With Shared Solar

SEC. 2161. PROVISION OF INTERCONNECTION SERVICE AND NET BILLING SERVICE FOR COMMUNITY SOLAR FACILITIES.

(a) IN GENERAL.—Section 111(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)) (as amended by section 2020(a)) is amended by adding at the end the following:

“(21) COMMUNITY SOLAR FACILITIES.—

“(A) DEFINITIONS.—In this paragraph:

“(i) COMMUNITY SOLAR FACILITY.—

The term ‘community solar facility’ means a solar photovoltaic system that—

“(I) allocates electricity to multiple individual electric consumers of an electric utility;

“(II) has a nameplate rating of 2 megawatts or less; and

“(III) is—

“(aa) owned by the electric utility, jointly owned, or third-party-owned;
“(bb) connected to a local
distribution facility of the electric
utility; and
“(cc) located on or off the
property of a consumer of the
electricity.
“(ii) INTERCONNECTION SERVICE.—
The term ‘interconnection service’ means a
service provided by an electric utility to an
electric consumer, in accordance with the
standards described in paragraph (15),
through which a community solar facility is
connected to an applicable local distribu-
tion facility.
“(iii) NET BILLING SERVICE.—The
term ‘net billing service’ means a service
provided by an electric utility to an electric
consumer through which electric energy
generated for that electric consumer from
a community solar facility may be used to
offset electric energy provided by the elec-
tric utility to the electric consumer during
the applicable billing period.
“(B) REQUIREMENT.—On receipt of a re-
quest of an electric consumer served by the
electric utility, each electric utility shall make
available to the electric consumer interconnec-
tion service and net billing service for a commu-
nity solar facility.”.

(b) Compliance.—

(1) Time limitations.—Section 112(b) of the
Public Utility Regulatory Policies Act of 1978 (16
U.S.C. 2622(b)) (as amended by section 2020(b)(1))
is amended by adding at the end the following:

“(8)(A) Not later than 1 year after the date of
enactment of this paragraph, each State regulatory
authority (with respect to each electric utility for
which the State has ratemaking authority) and each
nonregulated utility shall commence consideration
under section 111, or set a hearing date for consid-
eration, with respect to the standard established by
paragraph (21) of section 111(d).

“(B) Not later than 2 years after the date of
enactment of this paragraph, each State regulatory
authority (with respect to each electric utility for
which the State has ratemaking authority), and each
nonregulated electric utility shall complete the con-
sideration and make the determination under section
111 with respect to the standard established by
paragraph (21) of section 111(d).”.
(2) FAILURE TO COMPLY.—

(A) IN GENERAL.—Section 112(c) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(c)) (as amended by section 2020(b)(2)) is amended—

(i) by striking “such paragraph (14)” and all that follows through “paragraphs (16)” and inserting “such paragraph (14). In the case of the standard established by paragraph (15) of section 111(d), the reference contained in this subsection to the date of enactment of this Act shall be deemed to be a reference to the date of enactment of that paragraph (15). In the case of the standards established by paragraphs (16)”;

(ii) by adding at the end the following: “In the case of the standard established by paragraph (21) of section 111(d), the reference contained in this subsection to the date of enactment of this Act shall be deemed to be a reference to the date of enactment of that paragraph (21).”.

(B) TECHNICAL CORRECTION.—
(i) IN GENERAL.—Section 1254(b) of the Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 971) is amended by striking paragraph (2).

(ii) TREATMENT.—The amendment made by paragraph (2) of section 1254(b) of the Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 971) (as in effect on the day before the date of enactment of this Act) is void, and section 112(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(d)) shall be in effect as if those amendments had not been enacted.

(3) PRIOR STATE ACTIONS.—

(A) IN GENERAL.—Section 112 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622) is amended by adding at the end the following:

“(g) PRIOR STATE ACTIONS.—Subsections (b) and (c) shall not apply to the standard established by paragraph (21) of section 111(d) in the case of any electric utility in a State if, before the date of enactment of this subsection—
“(1) the State has implemented for the electric utility the standard (or a comparable standard);

“(2) the State regulatory authority for the State or the relevant nonregulated electric utility has conducted a proceeding to consider implementation of the standard (or a comparable standard) for the electric utility; or

“(3) the State legislature has voted on the implementation of the standard (or a comparable standard) for the electric utility.”.

(B) CROSS-REFERENCE.—Section 124 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2634) is amended by adding at the end the following: “In the case of the standard established by paragraph (21) of section 111(d), the reference contained in this subsection to the date of enactment of this Act shall be deemed to be a reference to the date of enactment of that paragraph (21).”.

Subtitle O—Report on Low- and No-Carbon Energy Technologies

SEC. 2171. REPORT.

(a) IN GENERAL.—Not later than 1 year before the date on which the credits under sections 45L, 45S, 45T, 48E, 179D, and 179F of the Internal Revenue Code of
1986 expire, the Secretary, in consultation with the Sec-
retary of Treasury, shall submit to the Committees on Fi-
nance and Energy of the Senate and the Committees on
Natural Resources, Ways and Means, and Energy and
Commerce of the House of Representative a report on
whether continuation of the credits under sections 45L,
45S, 45T, 48E, 179D, and 179F of the Internal Revenue
Code of 1986 remains necessary to achieve the carbon sav-
ings goal described in section 3001(1).

(b) REQUIREMENTS.—In preparing the report re-
quired under subsection (a), the Secretary shall con-
sider—

(1) regional differences in energy prices;
(2) the innovation and diffusion of new tech-
nologies; and
(3) the interaction between the credits and
other Federal and State incentives for renewable and
conventional energy sources.

Subtitle P—Loan Programs

SEC. 2181. TERMS AND CONDITIONS FOR INCENTIVES FOR
INNOVATIVE TECHNOLOGIES.

(a) BORROWER PAYMENT OF SUBSIDY COST.—
(1) IN GENERAL.—Section 1702 of the Energy
Policy Act of 2005 (42 U.S.C. 16512) is amended
by adding at the end the following:
“(l) Borrower Payment of Subsidy Cost.—

“(1) In general.—In addition to the requirement in subsection (b)(1), no guarantee shall be made unless the Secretary has received from the borrower not less than 25 percent of the cost of the guarantee.

“(2) Estimate.—The Secretary shall provide to the borrower, as soon as practicable, an estimate or range of the cost of the guarantee under paragraph (1).”.

(2) Conforming Amendment.—Section 1702(b) of the Energy Policy Act of 2005 (42 U.S.C. 16512(b)) is amended—

(A) by striking “(1) In general.—No guarantee” and inserting the following: “Subject to subsection (l), no guarantee”;

(B) by redesignating subparagraphs (A), (B), and (C) as paragraphs (1), (2), and (3), respectively, and indenting appropriately; and

(C) in paragraph (3) (as so redesignated)—

(i) by striking “subparagraph (A)” and inserting “paragraph (1)”; and

(ii) by striking “subparagraph (B)” and inserting “paragraph (2)”. 
(b) Prohibition on Subordination of Debt.—

Section 1702(d)(3) of the Energy Policy Act of 2005 (42 U.S.C. 16512(d)(3)) is amended by striking “is not subordinate” and inserting “(including any reorganization, restructuring, or termination of the obligation) shall not at any time be subordinate”.

(c) Loan Program Transparency.—Section 1703 of the Energy Policy Act of 2005 (42 U.S.C. 16513) is amended by adding at the end the following:

“(f) Loan Status.—

“(1) Request.—If the Secretary does not make a final decision on an application for a loan guarantee under this section by the date that is 270 days after receipt of the application by the Secretary, on that date and every 90 days thereafter until the final decision is made, the applicant may request that the Secretary provide to the applicant a description of the status of the application.

“(2) Response.—Not later than 10 days after receiving a request from an applicant under paragraph (1), the Secretary shall provide to the applicant a response that includes—

“(A) a summary of any factors that are delaying a final decision on the application; and
“(B) an estimate of when review of the application will be completed.”.

(d) Temporary Program for Rapid Deployment of Renewable Energy and Electric Power Transmission Projects.—

(1) Repeal.—Section 1705 of the Energy Policy Act of 2005 (42 U.S.C. 16516) is repealed.

(2) Rescission.—There is rescinded the unobligated balance of amounts made available to carry out the loan guarantee program established under section 1705 of the Energy Policy Act of 2005 (42 U.S.C. 16516) (before the amendment made by paragraph (1)).

(3) Management.—The Secretary shall ensure rigorous continued management and oversight of all outstanding loans guaranteed under the program described in subsection (b) until those loans have been repaid in full.

SEC. 2182. STATE LOAN ELIGIBILITY.

(a) Definitions.—Section 1701 of the Energy Policy Act of 2005 (42 U.S.C. 16511) is amended by adding at the end the following:

“(6) State.—The term ‘State’ has the meaning given the term in section 202 of the Energy Conservation and Production Act (42 U.S.C. 6802).
“(7) **STATE ENERGY FINANCING INSTITUTION.**—

“(A) **IN GENERAL.**—The term ‘State energy financing institution’ means a quasi-independent entity or an entity within a State agency or financing authority established by a State—

“(i) to provide financing support or credit enhancements, including loan guarantees and loan loss reserves, for eligible projects; and

“(ii) to create liquid markets for eligible projects, including warehousing and securitization, or take other steps to reduce financial barriers to the deployment of existing and new eligible projects.

“(B) **INCLUSION.**—The term ‘State energy financing institution’ includes an entity or organization established to achieve the purposes described in clauses (i) and (ii) of subparagraph (A) by an Indian tribal entity or an Alaska Native Corporation.”.

(b) **TERMS AND CONDITIONS.**—Section 1702 of the Energy Policy Act of 2005 (42 U.S.C. 16512) (as amended by section 4001(a)(1)) is amended—
(1) in subsection (a), by inserting “or to a State energy financing institution” after “for projects”; and

(2) by adding at the end the following:

“(m) STATE ENERGY FINANCING INSTITUTIONS.—

“(1) ELIGIBILITY.—To be eligible for a guarantee under this title, a State energy financing institution—

“(A) shall meet the requirements of section 1703(a)(1); and

“(B) shall not be required to meet the requirements of section 1703(a)(2).

“(2) PARTNERSHIPS AUTHORIZED.—In carrying out a project receiving a loan guarantee under this title, State energy financing institutions may enter into partnerships with private entities, tribal entities, and Alaska Native corporations.”.

TITLE III—CUTTING POLLUTION AND WASTE

Subtitle A—Carbon Savings Goal

SEC. 3001. POLICY OF UNITED STATES ON ADDRESSING CLIMATE CHANGE.

It is the policy of the United States—

(1) to use appropriate authorities and available technologies to reduce the greenhouse gas emissions
of the United States by not less than 2 percent per
year on average through 2025;

(2) to make the investments necessary to im-
prove the resilience of vulnerable communities and
infrastructure in the United States to the impacts of
climate change that can no longer be prevented; and

(3) to exercise the international leadership posi-
tion of the United States to address climate change
by securing commitments from other major carbon-
emitting countries to meet their own carbon pollu-
tion reduction targets in a transparent and verifiable
manner.

Subtitle B—American Energy
Efficiency

SEC. 3011. ENERGY EFFICIENCY RESOURCE STANDARD FOR
RETAIL ELECTRICITY AND NATURAL GAS
SUPPLIERS.

(a) In General.—Title VI of the Public Utility Reg-
ulatory Policies Act of 1978 (16 U.S.C. 2601 et seq.) is
amended by adding at the end the following:

“SEC. 610. FEDERAL ENERGY EFFICIENCY RESOURCE
STANDARD FOR RETAIL ELECTRICITY AND
NATURAL GAS SUPPLIERS.

“(a) DEFINITIONS.—In this section:

“(1) BASE QUANTITY.—
“(A) IN GENERAL.—The term ‘base quantity’, with respect to a retail electricity supplier or retail natural gas supplier, means, for each calendar year for which a performance standard is established under subsection (c), the average annual quantity of electricity or natural gas delivered by the retail electricity supplier or retail natural gas supplier to retail customers during the 3 calendar years immediately preceding the first year that compliance is required under subsection (c)(1).

“(B) EXCLUSION.—The term ‘base quantity’, with respect to a retail natural gas supplier, does not include natural gas delivered for purposes of electricity generation.

“(2) CUSTOMER FACILITY SAVINGS.—The term ‘customer facility savings’ means a reduction in end-use electricity or natural gas consumption (including waste heat energy savings) at a facility of an end-use consumer of electricity or natural gas served by a retail electricity supplier or natural gas supplier, as compared to—

“(A) in the case of a new facility, consumption at a reference facility of average efficiency;
“(B) in the case of an existing facility, consumption at the facility during a base period of not less than 1 year;

“(C) in the case of new equipment that replaces existing equipment at the end of the useful life of the existing equipment, consumption by new equipment of average efficiency of the same equipment type, except that customer savings under this subparagraph shall not be counted towards customer savings under subparagraph (A) or (B); and

“(D) in the case of new equipment that replaces existing equipment with remaining useful life—

“(i) consumption of the existing equipment for the remaining useful life of the equipment; and

“(ii) thereafter, consumption of new equipment of average efficiency.

“(3) ELECTRICITY SAVINGS.—The term ‘electricity savings’ means reductions in electricity consumption achieved through measures implemented after the date of enactment of this section, as determined in accordance with regulations promulgated by the Secretary, that are limited to—
“(A) customer facility savings of electricity, adjusted to reflect any associated increase in fuel consumption at the facility;

“(B) reductions in distribution system losses of electricity achieved by a retail electricity supplier, as compared to losses attributable to new or replacement distribution system equipment of average efficiency, as defined in regulations promulgated by the Secretary;

“(C) CHP savings;

“(D) codes and standards savings of electricity; and

“(E) fuel switching energy savings that results in net savings of electricity.

“(4) NATURAL GAS SAVINGS.—The term ‘natural gas savings’ means reductions in natural gas consumption from measures implemented after the date of enactment of this section, as determined in accordance with regulations promulgated by the Secretary, that are limited to—

“(A) customer facility savings of natural gas, adjusted to reflect any associated increase in electricity consumption or consumption of other fuels at the facility;
“(B) reductions in leakage, operational losses, and consumption of natural gas fuel to operate a gas distribution system, achieved by a retail natural gas supplier, as compared to similar leakage, losses, and consumption during a base period of not less than 1 year;

“(C) codes and standards savings of natural gas; and

“(D) fuel switching energy savings that results in net savings of natural gas.

“(5) RETAIL ELECTRICITY SUPPLIER.—

“(A) IN GENERAL.—The term ‘retail electricity supplier’ means, for any given calendar year, an electric utility that sells not less than 1,000,000 megawatt hours of electric energy to electric consumers for purposes other than resale during the preceding calendar year.

“(B) INCLUSIONS AND LIMITATIONS.—For purposes of determining whether an electric utility qualifies as a retail electricity supplier under subparagraph (A)—

“(i) deliveries by any affiliate of an electric utility to electric consumers for purposes other than resale shall be consid-
ered to be deliveries by the electric utility;

and

“(ii) deliveries by any electric utility
to a lessee, tenant, or affiliate of the elec-
tric utility shall not be considered to be de-
 deliveries to electric consumers.

“(6) RETAIL NATURAL GAS SUPPLIER.—

“(A) IN GENERAL.—The term ‘retail nat-
ural gas supplier’ means, for any given calendar
year, a local distribution company (as defined
in section 2 of the Natural Gas Policy Act of
1978 (15 U.S.C. 3301)), that delivered to nat-
ural gas consumers more than 5,000,000,000
cubic feet of natural gas for purposes other
than resale during the preceding calendar year.

“(B) INCLUSIONS AND LIMITATIONS.—For
purposes of determining whether a person
qualifies as a retail natural gas supplier under
subparagraph (A)—

“(i) deliveries of natural gas by any
affiliate of a local distribution company to
consumers for purposes other than resale
shall be considered to be deliveries by the
local distribution company; and
“(ii) deliveries of natural gas to a lessee, tenant, or affiliate of a local distribution company shall not be considered to be deliveries to natural gas consumers.

“(b) ESTABLISHMENT OF PROGRAM.—

“(1) REGULATIONS.—Not later than 1 year after the date of enactment of this section, the Secretary shall, by regulation, establish a program to implement and enforce the requirements of this section, including by—


“(B) establishing measurement and verification procedures and standards that count only measures and savings that are additional to business-as-usual customer purchase practices;

“(C) establishing requirements under which retail electricity suppliers and retail natural gas suppliers shall—
“(i) demonstrate, document, and re-
port the compliance of the retail electricity
suppliers and retail natural gas suppliers
with the performance standards under sub-
section (c); and
“(ii) estimate the impact of the stand-
ards on current and future electricity and
natural gas use in the service territories of
the suppliers;
“(D) establishing requirements governing
applications for, and implementation of, dele-
gated State administration under subsection
(e); and
“(E) establishing rules to govern transfers
of electricity or natural gas savings between
suppliers and third-party efficiency providers
serving the same State and between suppliers
and third-party efficiency providers serving dif-
ferent States.
“(2) COORDINATION WITH STATE PROGRAMS.—
In establishing and implementing this section, the
Secretary shall, to the maximum extent practicable,
preserve the integrity and incorporate best practices
of existing State energy efficiency programs.
“(c) PERFORMANCE STANDARDS.—
“(1) Compliance obligation.—Not later than May 1 of the calendar year immediately following each reporting period—

“(A) each retail electricity supplier shall submit to the Secretary a report, in accordance with regulations promulgated by the Secretary, demonstrating that the retail electricity supplier has achieved cumulative electricity savings (adjusted to account for any attrition of savings measures implemented in prior years) in each calendar year that are equal to the applicable percentage of the base quantity of the retail electricity supplier; and

“(B) each retail natural gas supplier shall submit to the Secretary a report, in accordance with regulations promulgated by the Secretary, demonstrating that it has achieved cumulative natural gas savings (adjusted to account for any attrition of savings measures implemented in prior years) in each calendar year that are equal to the applicable percentage of the base quantity of such retail natural gas supplier.

“(2) Standards for 2017 through 2030.—

For each of calendar years 2017 through 2030, the applicable percentages are as follows:
“(3) Subsequent years.—

“(A) Calendar years 2031 through 2040.—Not later than December 31, 2028, the Secretary shall promulgate regulations establishing performance standards (expressed as applicable percentages of base quantity for both cumulative electricity savings and cumulative natural gas savings) for each of calendar years 2031 through 2040.

“(B) Requirements.—The Secretary shall establish standards under this paragraph at levels reflecting the maximum achievable
level of cost-effective energy efficiency potential, taking into account—

“(i) cost-effective energy savings achieved by leading retail electricity suppliers and retail natural gas suppliers;

“(ii) opportunities for new codes and standard savings;

“(iii) technology improvements; and

“(iv) other indicators of cost-effective energy efficiency potential including differences between States.

“(C) Minimum Percentage.—In no case shall the applicable percentages for any calendar year be less than the applicable percentages for calendar year 2030.

“(4) Delay of Submission for First Reporting Period.—

“(A) In General.—Notwithstanding paragraphs (1) and (2), for the 2017 reporting period, the Secretary may accept a request from a retail electricity supplier or a retail natural gas supplier to delay the required submission of documentation of all or part of the required savings for up to 2 years.
“(B) PLAN FOR COMPLIANCE.—The request for delay under subparagraph (A) shall include a plan for coming into full compliance by the end of the 2018–2019 reporting period.

“(5) APPLYING UNUSED SAVINGS TO FUTURE YEARS.—If savings achieved in a year exceed the performance standards specified in this subsection, any savings in excess of the performance standards may be applied toward performance standards specified for future years.

“(d) ENFORCEMENT AND JUDICIAL REVIEW.—

“(1) REVIEW OF RETAIL SUPPLIER REPORTS.—

“(A) IN GENERAL.—The Secretary shall review each report submitted to the Secretary by a retail electricity supplier or retail natural gas supplier under subsection (e) to verify that the applicable performance standards under subsection (e) have been met.

“(B) EXCLUSION.—In determining compliance with the applicable performance standards under subsection (e), the Secretary shall exclude reported electricity savings or natural gas savings that are not adequately demonstrated and documented, in accordance with the regula-
itions promulgated under subsections (b) and (c).

“(2) PENALTY FOR FAILURE TO DOCUMENT ADEQUATE SAVINGS.—If a retail electricity supplier or a retail natural gas supplier fails to demonstrate compliance with an applicable performance standard under subsection (c), or to pay to the State an applicable alternative compliance payment under subsection (e)(3), the Secretary shall assess against the retail electricity supplier or retail natural gas supplier a civil penalty for each failure in an amount equal to, as adjusted for inflation in accordance with such regulations as the Secretary may promulgate—

“(A) $100 per megawatt hour of electricity savings or alternative compliance payment that the retail electricity supplier failed to achieve or make, respectively; or

“(B) $10 per million Btu of natural gas savings or alternative compliance payment that the retail natural gas supplier failed to achieve or make, respectively.

“(3) OFFSETTING STATE PENALTIES.—The Secretary shall reduce the amount of any penalty under paragraph (2) by the amount paid by the relevant retail electricity supplier or retail natural gas supplier.
supplier to a State for failure to comply with the requirements of a State energy efficiency resource standard during the same compliance period.

“(4) Enforcement procedures.—The Secretary shall assess a civil penalty, as provided under paragraph (2), in accordance with the procedures described in section 333(d) of the Energy Policy and Conservation Act of 1954 (42 U.S.C. 6303).

“(e) State administration.—

“(1) In general.—On receipt of an application from the Governor of a State (including the Mayor of the District of Columbia), the Secretary may delegate to the State responsibility for administering this section within the territory of the State if the Secretary determines that the State will implement an energy efficiency program that meets or exceeds the requirements of this section.

“(2) Secretarial determination.—Not later than 180 days after the date on which a complete application is received by the Secretary, the Secretary shall make a substantive determination approving or disapproving a State application, after public notice and comment.

“(3) Alternative compliance payments.—
“(A) IN GENERAL.—As part of an application submitted under paragraph (1), a State may permit retail electricity suppliers or retail natural gas suppliers to pay to the State, by not later than May 1 of the calendar year immediately following the applicable reporting period, an alternative compliance payment in an amount equal to, as adjusted for inflation in accordance with such regulations as the Secretary may promulgate, not less than—

“(i) $50 per megawatt hour of electricity savings needed to make up any deficit with regard to a compliance obligation under the applicable performance standard; or

“(ii) $5 per million Btu of natural gas savings needed to make up any deficit with regard to a compliance obligation under the applicable performance standard.

“(B) USE OF PAYMENTS.—Alternative compliance payments collected by a State under subparagraph (A) shall be used by the State to administer the delegated authority of the State under this section and to implement cost-effective energy efficiency programs that—
“(i) to the maximum extent practicable, achieve electricity savings and natural gas savings in the State sufficient to make up the deficit associated with the alternative compliance payments; and

“(ii) can be measured and verified in accordance with the applicable procedures and standards under subsection (b)(1)(B).

“(4) Review of State Implementation.—

“(A) Periodic Review.—Every 2 years, the Secretary shall review State implementation of this section for conformance with the requirements of this section in approximately 1/2 of the States that have received approval under this subsection to administer the program, so that each State shall be reviewed at least every 4 years.

“(B) Report.—To facilitate the review under subparagraph (A), the Secretary may require the State to submit a report demonstrating the conformance of the State with the requirements of this section.

“(C) Deficiencies.—

“(i) In general.—In completing a review under this paragraph, if the Sec-
retary finds deficiencies, the Secretary shall—

“(I) notify the State of the deficiencies;

“(II) direct the State to correct the deficiencies; and

“(III) require the State to report to the Secretary on progress made by not later than 180 days after the date on which the State receives notice under subclause (I).

“(ii) Substantial deficiencies.—If the deficiencies are substantial, the Secretary shall—

“(I) disallow the reported electricity savings or natural gas savings that the Secretary determines are not credible due to deficiencies;

“(II) re-review the State not later than 2 years after the date on which the original review was completed; and

“(III) if substantial deficiencies remain uncorrected after the review provided for under subclause (II), re-
voke the authority of the State to administer the program established under this section.

“(f) INFORMATION AND REPORTS.—In accordance with section 13 of the Federal Energy Administration Act of 1974 (15 U.S.C. 772), the Secretary may require any retail electricity supplier, retail natural gas supplier, third-party efficiency provider, or any other entity that the Secretary determines appropriate, to provide any information the Secretary determines appropriate to carry out this section.

“(g) STATE LAW.—Nothing in this section diminishes or qualifies any authority of a State or political subdivision of a State to adopt or enforce any law or regulation respecting electricity savings or natural gas savings, including any law or regulation establishing energy efficiency requirements that are more stringent than those under this section, except that no State law or regulation shall relieve any person of any requirement otherwise applicable under this section.”.

(b) CONFORMING AMENDMENT.—The table of contents of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. pree. 2601) is amended by adding at the end of the items relating to title VI the following:

"Sec. 609. Rural and remote communities electrification grants.
"Sec. 610. Federal energy efficiency resource standard for retail electricity and natural gas suppliers.”.
Subtitle C—Energy Efficiency
Retrofit Program

SEC. 3021. ENERGY EFFICIENCY RETROFIT PILOT PROGRAM.

(a) Definitions.—In this section:

(1) Applicant.—The term “applicant” means a nonprofit organization that applies for a grant under this section.

(2) Energy-Efficiency Improvement.—

(A) In General.—The term “energy-efficiency improvement” means an installed measure (including a product, equipment, system, service, or practice) that results in a reduction in use by a nonprofit organization for energy or fuel supplied from outside the nonprofit building.

(B) Inclusions.—The term “energy-efficiency improvement” includes an installed measure described in subparagraph (A) involving—

(i) repairing, replacing, or installing—

(I) a roof or lighting system, or component of a roof or lighting system;

(II) a window;
(III) a door, including a security door; or

(IV) a heating, ventilation, or air conditioning system or component of the system (including insulation and wiring and plumbing improvements needed to serve a more efficient system);

(ii) a renewable energy generation or heating system, including a solar, photovoltaic, wind, geothermal, or biomass (including wood pellet) system or component of the system; and

(iii) any other measure taken to modernize, renovate, or repair a nonprofit building to make the nonprofit building more energy efficient.

(3) NONPROFIT BUILDING.—

(A) IN GENERAL.—The term “nonprofit building” means a building operated and owned by a nonprofit organization.

(B) INCLUSIONS.—The term “nonprofit building” includes a building described in subparagraph (A) that is—

(i) a hospital;
(ii) a youth center;

(iii) a school;

(iv) a social-welfare program facility;

(v) a faith-based organization; and

(vi) any other nonresidential and non-commercial structure.

(b) ESTABLISHMENT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall establish a pilot program to award grants for the purpose of retrofitting nonprofit buildings with energy-efficiency improvements.

(c) GRANTS.—

(1) IN GENERAL.—The Secretary may award grants under the program established under subsection (b).

(2) APPLICATION.—The Secretary may award a grant under this section if an applicant submits to the Secretary an application at such time, in such form, and containing such information as the Secretary may prescribe.

(3) CRITERIA FOR GRANT.—In determining whether to award a grant under this section, the Secretary shall apply performance-based criteria, which shall give priority to applications based on—

(A) the energy savings achieved;
(B) the cost-effectiveness of the energy-efficiency improvement;

(C) an effective plan for evaluation, measurement, and verification of energy savings;

(D) the financial need of the applicant; and

(E) the percentage of the matching contribution by the applicant.

(4) LIMITATION ON INDIVIDUAL GRANT AMOUNT.—Each grant awarded under this section shall not exceed—

(A) an amount equal to 50 percent of the energy-efficiency improvement; and

(B) $200,000.

(5) COST SHARING.—

(A) IN GENERAL.—A grant awarded under this section shall be subject to a minimum non-Federal cost-sharing requirement of 50 percent.

(B) IN-KIND CONTRIBUTIONS.—The non-Federal share may be provided in the form of in-kind contributions of materials or services.

(d) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $10,000,000 for each of fiscal years 2016 through 2020, to remain available until expended.
Subtitle D—Weatherization Enhancement and Local Energy Efficiency Investment and Accountability

SEC. 3031. FINDINGS.

Congress finds that—

(1) the State energy program established under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.) (referred to in this section as “SEP”) and the Weatherization Assistance Program for Low-Income Persons established under part A of title IV of the Energy Conservation and Production Act (42 U.S.C. 6861 et seq.) (referred to in this section as “WAP”) have proven to be beneficial, long-term partnerships among Federal, State, and local partners;

(2) the SEP and the WAP have been reauthorized on a bipartisan basis over many years to address changing national, regional, and State circumstances and needs, especially through—

   (A) the Energy Policy and Conservation Act (42 U.S.C. 6201 et seq.);
   
   (B) the Energy Conservation and Production Act (42 U.S.C. 6801 et seq.);
(C) the State Energy Efficiency Programs Improvement Act of 1990 (Public Law 101–440; 104 Stat. 1006);
(D) the Energy Policy Act of 1992 (42 U.S.C. 13201 et seq.);
(E) the Energy Policy Act of 2005 (42 U.S.C. 15801 et seq.); and
(F) the Energy Independence and Security Act of 2007 (42 U.S.C. 17001 et seq.);
(3) the SEP, also known as the “State energy conservation program”—
(A) was first created in 1975 to implement a State-based, national program in support of energy efficiency, renewable energy, economic development, energy emergency preparedness, and energy policy; and
(B) has come to operate in every sector of the economy in support of the private sector to improve productivity and has dramatically reduced the cost of government through energy savings at the State and local levels;
(4) Federal laboratory studies have concluded that, for every Federal dollar invested through the SEP, more than $7 is saved in energy costs and almost $11 in non-Federal funds is leveraged;
(5) the WAP—

(A) was first created in 1976 to assist low-income families in response to the first oil em-
bargo;

(B) has become the largest residential energy conservation program in the United States, with more than 7,100,000 homes weathered since the WAP was created;

(C) saves an estimated 35 percent of consumption in the typical weatherized home, yielding average annual savings of $437 per year in home energy costs;

(D) has created thousands of jobs in both the construction sector and in the supply chain of materials suppliers, vendors, and manufac-
turers who supply the WAP;

(E) returns $2.51 in energy savings for every Federal dollar spent in energy and non-
energy benefits over the life of weatherized homes;

(F) serves as a foundation for residential energy efficiency retrofit standards, technical skills, and workforce training for the emerging broader market and reduces residential and
power plant emissions of carbon dioxide by 2.65 metric tons each year per home; and

(G) has decreased national energy consumption by the equivalent of 24,100,000 barrels of oil annually;

(6) the WAP can be enhanced with the addition of a targeted portion of the Federal funds through an innovative program that supports projects performed by qualified nonprofit organizations that have a demonstrated capacity to build, renovate, repair, or improve the energy efficiency of a significant number of low-income homes, building on the success of the existing program without replacing the existing WAP network or creating a separate delivery mechanism for basic WAP services;

(7) the WAP has increased energy efficiency opportunities by promoting new, competitive public-private sector models of retrofitting low-income homes through new Federal partnerships;

(8) improved monitoring and reporting of the work product of the WAP has yielded benefits, and expanding independent verification of efficiency work will support the long-term goals of the WAP;

(9) reports of the Government Accountability Office in 2011, the Inspector General of the Depart-
ment, and State auditors have identified State-level deficiencies in monitoring efforts that can be addressed in a manner that will ensure that WAP funds are used more effectively;

(10) through the history of the WAP, the WAP has evolved with improvements in efficiency technology, including, in the 1990s, many States adopting advanced home energy audits, which has led to great returns on investment; and

(11) as the home energy efficiency industry has become more performance-based, the WAP should continue to use those advances in technology and the professional workforce.

SEC. 3032. REAUTHORIZATION OF WEATHERIZATION ASSISTANCE PROGRAM.

Section 422 of the Energy Conservation and Production Act (42 U.S.C. 6872) is amended by striking “appropriated—” and all that follows through the period at the end and inserting “appropriated $450,000,000 for each of fiscal years 2016 through 2020.”.
SEC. 3033. GRANTS FOR NEW, SELF-SUSTAINING LOW-INCOME, SINGLE-FAMILY, AND MULTIFAMILY HOUSING ENERGY RETROFIT MODEL PROGRAMS TO ELIGIBLE MULTI-STATE HOUSING AND ENERGY NONPROFIT ORGANIZATIONS.

The Energy Conservation and Production Act is amended by inserting after section 414B (42 U.S.C. 6864b) the following:

“SEC. 414C. GRANTS FOR NEW, SELF-SUSTAINING LOW-INCOME, SINGLE-FAMILY, AND MULTIFAMILY HOUSING ENERGY RETROFIT MODEL PROGRAMS TO ELIGIBLE MULTI-STATE HOUSING AND ENERGY NONPROFIT ORGANIZATIONS.

“(a) PURPOSES.—The purposes of this section are—

“(1) to expand the number of low-income, single-family and multifamily homes that receive energy efficiency retrofits;

“(2) to promote innovation and new models of retrofitting low-income homes through new Federal partnerships with covered organizations that leverage substantial donations, donated materials, volunteer labor, homeowner labor equity, and other private sector resources;

“(3) to assist the covered organizations in demonstrating, evaluating, improving, and replicating
widely the model low-income energy retrofit programs of the covered organizations; and

“(4) to ensure that the covered organizations make the energy retrofit programs of the covered organizations self-sustaining by the time grant funds have been expended.

“(b) DEFINITIONS.—In this section:

“(1) COVERED ORGANIZATION.—The term ‘covered organization’ means an organization that—

“(A) is described in section 501(c)(3) of the Internal Revenue Code of 1986 and exempt from taxation under 501(a) of that Code; and

“(B) has an established record of constructing, renovating, repairing, or making energy efficient a total of not less than 250 owner-occupied, single-family or multifamily homes per year for low-income households, either directly or through affiliates, chapters, or other direct partners (using the most recent year for which data are available).

“(2) LOW-INCOME.—The term ‘low-income’ means an income level that is not more than 200 percent of the poverty level (as determined in accordance with criteria established by the Director of the Office of Management and Budget) applicable to
a family of the size involved, except that the Secretary may establish a higher or lower level if the Secretary determines that a higher or lower level is necessary to carry out this section.

“(3) WEATHERIZATION ASSISTANCE PROGRAM FOR LOW-INCOME PERSONS.—The term ‘Weatherization Assistance Program for Low-Income Persons’ means the program established under this part (including part 440 of title 10, Code of Federal Regulations, or successor regulations).

“(c) COMPETITIVE GRANT PROGRAM.—The Secretary shall make grants to covered organizations through a national competitive process for use in accordance with this section.

“(d) AWARD FACTORS.—In making grants under this section, the Secretary shall consider—

“(1) the number of low-income homes the applicant—

“(A) has built, renovated, repaired, or made more energy efficient as of the date of the application; and

“(B) can reasonably be projected to build, renovate, repair, or make energy efficient during the 10-year period beginning on the date of the application;
“(2) the qualifications, experience, and past performance of the applicant, including experience successfully managing and administering Federal funds;

“(3) the number and diversity of States and climates in which the applicant works as of the date of the application;

“(4) the amount of non-Federal funds, donated or discounted materials, discounted or volunteer skilled labor, volunteer unskilled labor, homeowner labor equity, and other resources the applicant will provide;

“(5) the extent to which the applicant could successfully replicate the energy retrofit program of the applicant and sustain the program after the grant funds have been expended;

“(6) regional diversity;

“(7) urban, suburban, and rural localities; and

“(8) such other factors as the Secretary determines to be appropriate.

“(e) APPLICATIONS.—

“(1) IN GENERAL.—Not later than 180 days after the date of enactment of this section, the Secretary shall request proposals from covered organizations.
“(2) ADMINISTRATION.—To be eligible to receive a grant under this section, an applicant shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

“(3) AWARDS.—Not later than 90 days after the date of issuance of a request for proposals, the Secretary shall award grants under this section.

“(f) ELIGIBLE USES OF GRANT FUNDS.—A grant under this section may be used for—

“(1) energy efficiency audits, cost-effective retrofit, and related activities in different climatic regions of the United States;

“(2) energy efficiency materials and supplies;

“(3) organizational capacity—

“(A) to significantly increase the number of energy retrofits;

“(B) to replicate an energy retrofit program in other States; and

“(C) to ensure that the program is self-sustaining after the Federal grant funds are expended;

“(4) energy efficiency, audit and retrofit training, and ongoing technical assistance;
“(5) information to homeowners on proper maintenance and energy savings behaviors;

“(6) quality control and improvement;

“(7) data collection, measurement, and verification;

“(8) program monitoring, oversight, evaluation, and reporting;

“(9) management and administration (up to a maximum of 10 percent of the total grant);

“(10) labor and training activities; and

“(11) such other activities as the Secretary determines to be appropriate.

“(g) MAXIMUM AMOUNT.—

“(1) IN GENERAL.—The amount of a grant provided under this section shall not exceed—

“(A) if the amount made available to carry out this section for a fiscal year is $225,000,000 or more, $5,000,000; and

“(B) if the amount made available to carry out this section for a fiscal year is less than $225,000,000, $1,500,000.

“(2) TECHNICAL AND TRAINING ASSISTANCE.—

The total amount of a grant provided under this section shall be reduced by the cost of any technical
and training assistance provided by the Secretary that relates to the grant.

“(h) GUIDELINES.—

“(1) IN GENERAL.—Not later than 90 days after the date of enactment of this section, the Secretary shall issue guidelines to implement the grant program established under this section.

“(2) ADMINISTRATION.—The guidelines—

“(A) shall not apply to the Weatherization Assistance Program for Low-Income Persons, in whole or major part; but

“(B) may rely on applicable provisions of law governing the Weatherization Assistance Program for Low-Income Persons to establish—

“(i) standards for allowable expenditures;

“(ii) a minimum savings-to-investment ratio;

“(iii) standards—

“(I) to carry out training programs;

“(II) to conduct energy audits and program activities;
“(III) to provide technical assistance;
“(IV) to monitor program activities; and
“(V) to verify energy and cost savings;
“(iv) liability insurance requirements;
and
“(v) recordkeeping requirements, which shall include reporting to the Office of Weatherization and Intergovernmental Programs of the Department of Energy applicable data on each home retrofitted.

“(i) REVIEW AND EVALUATION.—The Secretary shall review and evaluate the performance of any covered organization that receives a grant under this section (which may include an audit), as determined by the Secretary.

“(j) COMPLIANCE WITH STATE AND LOCAL LAW.—Nothing in this section or any program carried out using a grant provided under this section supersedes or otherwise affects any State or local law, to the extent that the State or local law contains a requirement that is more stringent than the applicable requirement of this section.

“(k) ANNUAL REPORTS.—The Secretary shall submit to Congress annual reports that provide—
“(1) findings;

“(2) a description of energy and cost savings achieved and actions taken under this section; and

“(3) any recommendations for further action.

“(l) FUNDING.—Of the amount of funds that are made available to carry out the Weatherization Assistance Program for each of fiscal years 2016 through 2020 under section 422, the Secretary shall use to carry out this section for each of fiscal years 2016 through 2020—

“(1) 2 percent of the amount if the amount is less than $225,000,000;

“(2) 5 percent of the amount if the amount is $225,000,000 or more but less than $260,000,000;

“(3) 10 percent of the amount if the amount is $260,000,000 or more but less than $400,000,000; and

“(4) 20 percent of the amount if the amount is $400,000,000 or more.”.

SEC. 3034. STANDARDS PROGRAM.

Section 415 of the Energy Conservation and Production Act (42 U.S.C. 6865) is amended by adding at the end the following:

“(f) STANDARDS PROGRAM.—

“(1) CONTRACTOR QUALIFICATION.—Effective beginning January 1, 2016, to be eligible to carry
out weatherization using funds made available under this part, a contractor shall be selected through a competitive bidding process and be—

“(A) accredited by the Building Performance Institute;

“(B) an Energy Smart Home Performance Team accredited under the Residential Energy Services Network; or

“(C) accredited by an equivalent accreditation or program accreditation-based State certification program approved by the Secretary.

“(2) Grants for Energy Retrofit Model Programs.—

“(A) In general.—To be eligible to receive a grant under section 414C, a covered organization (as defined in section 414C(b)) shall use a crew chief who—

“(i) is certified or accredited in accordance with paragraph (1); and

“(ii) supervises the work performed with grant funds.

“(B) Volunteer labor.—A volunteer who performs work for a covered organization that receives a grant under section 414C shall not be required to be certified under this sub-
section if the volunteer is not directly installing
or repairing mechanical equipment or other
items that require skilled labor.

“(C) Training.—The Secretary shall use
training and technical assistance funds available
to the Secretary to assist covered organizations
under section 414C in providing training to ob-
tain certification required under this subsection,
including provisional or temporary certification.

“(3) Minimum Efficiency Standards.—Ef-
f ective beginning October 1, 2016, the Secretary
shall ensure that—

“(A) each retrofit for which weatherization
assistance is provided under this part meets
minimum efficiency and quality of work stand-
ards established by the Secretary after weather-
ization of a dwelling unit;

“(B) at least 10 percent of the dwelling
units are randomly inspected by a third party
accredited under this subsection to ensure com-
pliance with the minimum efficiency and quality
of work standards established under subpara-
graph (A); and

“(C) the standards established under this
subsection meet or exceed the industry stand-
ar ds for home performance work that are in ef-
fect on the date of enactment of this subsection,
as determined by the Secretary.”.

SEC. 3035. REAUTHORIZATION OF STATE ENERGY PRO-
GRAM.

Section 365(f) of the Energy Policy and Conservation
Act (42 U.S.C. 6325(f)) is amended by striking
“$125,000,000 for each of fiscal years 2007 through
2012” and inserting “$75,000,000 for each of fiscal years
2016 through 2020”.

Subtitle E—Utility Energy Service
Contracts Improvement

SEC. 3041. FINDINGS.

Congress finds that—

(1) the Federal Government is the largest con-
sumer of energy in the United States;

(2) Federal agencies are expected to meet, by
law, Executive order, and mandate, stringent energy
efficiency and conservation targets;

(3) the utility energy service contract (referred
to in this section as “UESC”) was developed to pro-
vide Federal agencies an effective means to imple-
ment energy efficiency, renewable energy and water
efficiency projects, and has been used successfully to
invest nearly $2,700,000,000 in property at Federal facilities;

(4) the General Services Administration, which manages more than 9,600 Federal properties and is the lead agency for procuring utility services for the Federal Government, has determined that UESCs may extend beyond a 10-year period under the law;

(5) the Federal Energy Management Program, which oversees the UESC program and is a principal office guiding agencies to use funding more effectively in meeting Federal and agency-specific energy and resource management objectives, has determined that UESCs may extend beyond a 10-year period under the law;

(6) extensive precedent exists for Federal agencies to contract for energy saving services using contracts with term limits of more than 10 years but not to exceed 25 years;

(7) a number of Federal agencies, contrary to congressional intent, have sought to limit UESC term limits to periods of less than 10 years; and

(8) greater flexibility with UESCs will help reduce the operational cost of Federal agencies, ultimately saving money for taxpayers.
SEC. 3042. UTILITY ENERGY SERVICE CONTRACTS.

Part 3 of title V of the National Energy Conservation Policy Act (as amended by section 2151) is amended by adding after section 554 the following:

“SEC. 555. UTILITY ENERGY SERVICE CONTRACTS.

“(a) IN GENERAL.—Each Federal agency may use, to the maximum extent practicable, measures provided by law to meet energy efficiency and conservation mandates and laws, including through utility energy service contracts.

“(b) CONTRACT PERIOD.—The term of a utility energy service contract entered into by a Federal agency may have a contract period that extends beyond 10 years, but not to exceed 25 years.

“(c) REQUIREMENTS.—The conditions of a utility energy service contract entered into by a Federal agency shall include requirements for measurement, verification, and performance assurances or guarantees of the savings.”.

Subtitle F—State Residential Building Energy Efficiency Loan Pilot Program

SEC. 3051. STATE RESIDENTIAL BUILDING ENERGY EFFICIENCY UPGRADES LOAN PILOT PROGRAM.

(a) LOANS FOR RESIDENTIAL BUILDING ENERGY EFFICIENCY UPGRADES.—Part D of title III of the En-
ergy Policy and Conservation Act (42 U.S.C. 6321 et seq.) is amended by adding at the end the following:

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“SEC. 367. LOANS FOR RESIDENTIAL BUILDING ENERGY EFFICIENCY UPGRADES.

“(a) DEFINITIONS.—In this section:

“(1) CONSUMER-FRIENDLY.—The term ‘consumer-friendly’, with respect to a loan repayment approach, means a loan repayment approach that—

“(A) emphasizes convenience for customers;

“(B) is of low cost to consumers; and

“(C) emphasizes simplicity and ease of use for consumers in the billing process.

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

“(A) a State or territory of the United States; and

“(B) a tribal organization (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b)).

“(3) ENERGY ADVISOR PROGRAM.—

“(A) IN GENERAL.—The term ‘energy advisor program’ means any program to provide advice, information, and support in the identi-
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"(B) Inclusions.—The term ‘energy advisor program’ includes a program that provides—

"(i) interpretation of energy audit reports;

"(ii) assistance in the prioritization of improvements;

"(iii) assistance in finding qualified contractors;

"(iv) assistance in contractor bid reviews;

"(v) education on energy conservation and energy efficiency;

"(vi) explanations of available incentives and tax credits;

"(vii) assistance in completion of rebate and incentive paperwork; and

"(viii) any other similar type of support.

"(4) Energy efficiency.—The term ‘energy efficiency’ means a decrease in homeowner or residential tenant consumption of energy (including elec-
tricity and thermal energy) that is achieved without reducing the quality of energy services through—

“(A) a measure or program that targets customer behavior;

“(B) equipment or energy systems;

“(C) a device; or

“(D) other material.

“(5) ENERGY EFFICIENCY UPGRADE.—

“(A) IN GENERAL.—The term ‘energy efficiency upgrade’ means any project or activity—

“(i) the primary purpose of which is increasing energy efficiency; and

“(ii) that is carried out on a residential building.

“(B) INCLUSIONS.—The term ‘energy efficiency upgrade’ includes the installation or improvement of a renewable energy facility for heating or electricity generation serving a residential building carried out in conjunction with an energy efficiency project or activity.

“(6) PROGRAM ENTITY.—The term ‘program entity’ means a local government, utility, or other entity that carries out a financing program under subsection (c)(2)(A) pursuant to a contract or other agreement with an eligible entity.
“(7) Recipient household.—The term ‘recipient household’ means the owner or tenant of a residential building who receives financing under this section for an energy efficiency upgrade of the residential building.

“(8) Residential building.—

“(A) In general.—The term ‘residential building’ means a building used for residential purposes.

“(B) Inclusions.—The term ‘residential building’ includes—

“(i) a single-family residence;

“(ii) a multifamily residence composed not more than 4 units; and

“(iii) a mixed-use building that includes not more than 4 residential units.

“(b) Establishment of Program.—

“(1) In general.—The Secretary shall establish a program under this part under which the Secretary shall make available to eligible entities loans for the purpose of establishing or expanding programs that provide to recipient households financing for energy efficiency upgrades of residential buildings.
“(2) Consultation.—In establishing the program under paragraph (1), the Secretary shall consult, as the Secretary determines to be appropriate, with stakeholders and the public.

“(3) No requirement to participate.—No eligible entity shall be required to participate in any manner in the program established under paragraph (1).

“(4) Deadlines.—The Secretary shall—

“(A) not later than 1 year after the date of enactment of this section, implement the program established under paragraph (1) (including soliciting applications from eligible entities in accordance with subsection (c)); and

“(B) not later than 2 years after the date of enactment of this section, disburse the initial loans provided under this section.

“(c) Applications.—

“(1) In general.—To be eligible to receive a loan under this section, an eligible entity shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

“(2) Selection date.—Not later than 21 months after the date of enactment of this section,
the Secretary shall select eligible entities to receive the initial loans provided under this section, in accordance with the requirements described in paragraph (3).

“(3) REQUIREMENTS.—In selecting eligible entities to receive loans under this section, the Secretary shall—

“(A) to the maximum extent practicable, ensure—

“(i) that both innovative and established approaches to the challenges of financing energy efficiency upgrades are supported;

“(ii) that energy efficiency upgrades are conducted and validated to comply with best practices for work quality, as determined by the Secretary;

“(iii) regional diversity among eligible entities that receive the loans, including participation by rural States and small States;

“(iv) significant participation by families with income levels at or below the median income level for the applicable geo-
graphical region, as determined by the Secretary; and

“(v) the incorporation of an energy advisor program by, as applicable—

“(I) eligible entities; or

“(II) program entities;

“(B) evaluate applications based primarily on—

“(i) the projected reduction in energy use, as determined in accordance with such specific and commonly available methodology as the Secretary shall establish, by regulation;

“(ii) the creditworthiness of the eligible entity; and

“(iii) the incorporation of measures for making the loan repayment system for recipient households as consumer-friendly as practicable;

“(C) evaluate applications based secondarily on—

“(i) the extent to which the proposed financing program of the eligible entity incorporates best practices for such a program, as determined by the Secretary;
“(ii)(I) whether the eligible entity has created a plan for evaluating the effectiveness of the proposed financing program; and

“(II) whether that plan includes—

“(aa) a robust strategy for collecting, managing, and analyzing data, as well as making the data available to the public; and

“(bb) experimental studies, which may include investigations of how human behavior impacts the effectiveness of efficiency improvements;

“(iii) the extent to which Federal funds are matched by funding from State, local, philanthropic, private sector, and other sources;

“(iv) the extent to which the proposed financing program will be coordinated and marketed with other existing or planned energy efficiency or energy conservation programs administered by—

“(I) utilities and rural cooperatives;
“(II) State, tribal, territorial, or local governments; or
“(III) community development financial institutions; and
“(v) such other factors as the Secretary determines to be appropriate; and
“(D) not provide an advantage or disadvantage to applications that include renewable energy in the program.
“(d) Administrative Provisions.—
“(1) Term.—The Secretary shall establish terms for loans provided to eligible entities under this section—
“(A) in a manner that—
“(i) provides for a high degree of cost recovery; and
“(ii) ensures that, with respect to all loans provided to or by eligible entities under this section, the loans are competitive with, or superior to, other forms of financing for similar purposes; and
“(B) subject to the condition that the term of a loan provided to an eligible entity under this section shall not exceed 35 years.
“(2) Interest rates.—
“(A) IN GENERAL.—Subject to subparagraph (B), the Secretary, at the discretion of the Secretary, shall charge interest on a loan provided to an eligible entity under this section at a fixed rate equal, or approximately equal, to the interest rate charged on Treasury securities of comparable maturity.

“(B) LEVERAGED LOANS.—The interest rate and other terms of the loans provided to eligible entities under this section shall be established in a manner that ensures that the total amount of the loans is equal to not less than 20 times, and not more than 50 times, an amount equivalent to 80 percent of the amount appropriated for administrative and general financial support costs pursuant to subsection (g)(2).

“(3) NO PENALTY ON EARLY REPAYMENT.—The Secretary shall not assess any penalty for early repayment by an eligible entity of a loan provided under this section.

“(4) RETURN OF UNUSED PORTION.—As a condition of receipt of a loan under this section, an eligible entity shall agree to return to the general fund of the Treasury any portion of the loan amount that
is unused by the eligible entity within a reasonable period after the date of receipt of the loan, as determined by the Secretary.

“(e) USE OF FUNDS.—

“(1) IN GENERAL.—An eligible entity shall use a loan provided under this section to establish or expand 1 or more financing programs—

“(A) the purpose of which is to enable recipient households to undertake energy efficiency upgrades of residential buildings;

“(B) that may, at the sole discretion of the eligible entity, require an outlay of capital by recipient households in accordance with the goals of the program under this section; and

“(C) that incorporate a consumer-friendly loan repayment approach.

“(2) STRUCTURE OF FINANCING PROGRAM.—A financing program of an eligible entity may—

“(A) consist—

“(i) primarily or entirely of a financing program administered by—

“(I) the applicable State; or

“(II) a program entity; or

“(ii) of a combination of programs described in clause (i);
“(B) rely on financing provided by—

“(i) the eligible entity; or

“(ii) a third party, acting through the eligible entity; and

“(C) include a provision pursuant to which a recipient household shall agree to return to the eligible entity any portion of the assistance that is unused by the recipient household within a reasonable period after the date of receipt of the assistance, as determined by the eligible entity.

“(3) Form of Assistance.—Assistance from an eligible entity under this subsection may be provided in any form, or in accordance with any program, authorized by Federal law (including regulations), including in the form of—

“(A) a revolving loan fund;

“(B) a credit enhancement structure designed to mitigate the effects of default; or

“(C) a program that—

“(i) adopts any other approach for providing financing for energy efficiency upgrades producing significant energy efficiency gains; and
“(ii) incorporates measures for making the loan repayment system for recipient households as consumer-friendly as practicable.

“(4) Scope of assistance.—Assistance provided by an eligible entity under this subsection may be used to pay for costs associated with carrying out an energy efficiency upgrade, including materials and labor.

“(5) Additional assistance.—In addition to the amount of the loan provided to an eligible entity by the Secretary under subsection (b), the eligible entity or program entity, as applicable, may provide to recipient households such assistance under this subsection as the eligible entity or program entity considers to be appropriate from any other funds of the eligible entity or program entity, including funds provided to the eligible entity by the Secretary for administrative costs pursuant to this section.

“(6) Limitations.—

“(A) Interest rates.—

“(i) Interest charged by eligible entities.—The interest rate charged by an eligible entity on assistance provided under this subsection—
“(I) shall be fixed; and

“(II) shall not exceed the interest rate paid by the eligible entity to the Secretary under subsection (d)(2).

“(ii) INTEREST CHARGED BY PROGRAM ENTITIES.—A program entity that receives funding from an eligible entity under this subsection for the purpose of capitalizing a residential energy efficiency financing program may charge interest on any loan provided by the program entity at a fixed rate that is as low as practicable, but not more than 5 percent more than the applicable interest rate paid by the eligible entity to the Secretary under subsection (d)(2).

“(B) NO PENALTY ON EARLY REPAYMENT.—An eligible entity or program entity, as applicable, shall not assess any penalty for early repayment by any recipient household to the eligible entity or program entity, as applicable.

“(f) REPORTS.—

“(1) ELIGIBLE ENTITIES.—

“(A) IN GENERAL.—Not later than 2 years after the date of receipt of the loan, and annu-
ally thereafter for the term of the loan, an eligible entity that receives a loan under this section shall submit to the Secretary a report describing the performance of each program and activity carried out using the loan, including anonymized loan performance data.

“(B) REQUIREMENTS.—The Secretary, in consultation with eligible entities and other stakeholders (such as lending institutions and the real estate industry), shall establish such requirements for the reports under this paragraph as the Secretary determines to be appropriate—

“(i) to ensure that the reports are clear, consistent, and straightforward; and

“(ii) taking into account the reporting requirements for similar programs in which the eligible entities are participating, if any.

“(2) SECRETARY.—The Secretary shall submit to Congress and make available to the public—

“(A) not less frequently than once each year, a report describing the performance of the program under this section, including a synthesis and analysis of the information provided
in the reports submitted to the Secretary under paragraph (1)(A); and

“(B) on termination of the program under this section, an assessment of the success of, and education provided by, the measures carried out by eligible entities during the term of the program.

“(g) Authorization of Appropriations.—There are authorized to be appropriated to the Secretary to carry out this section—

“(1) $37,500,000 for energy advisor programs;
“(2) $25,000,000 for administrative and general financial support costs to the Secretary of carrying out this section; and
“(3) $37,500,000 for administrative costs to States in carrying out this section.”.

(b) Reorganization.—

(1) In General.—Part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.) is amended—

(A) by redesignating sections 362, 363, 364, 365, and 366 as sections 364, 365, 366, 363, and 362, respectively, and moving the sections so as to appear in numerical order;

(B) in section 362 (as so redesignated)—
(i) in paragraph (3)(B)(i), by striking “section 367, and” and inserting “section 367 (as in effect on the day before the date of enactment of the State Energy Efficiency Programs Improvement Act of 1990 (42 U.S.C. 6201 note; Public Law 101–440)); and”; and

(ii) in each of paragraphs (4) and (6), by striking “section 365(e)(1)” each place it appears and inserting “section 363(e)(1)”;

(C) in section 363 (as so redesignated)—

(i) in subsection (b), by striking “the provisions of sections 362 and 364 and subsection (a) of section 363” and inserting “sections 364, 365(a), and 366”; and

(ii) in subsection (g)(1)(A), in the second sentence, by striking “section 362” and inserting “section 364”; and

(D) in section 365 (as so redesignated)—

(i) in subsection (a)—

(I) in paragraph (1), by striking “section 362,” and inserting “section 364,”; and
(II) in paragraph (2), by striking “section 362(b) or (e)” and inserting “subsection (b) or (e) of section 364”;

and

(ii) in subsection (b)(2), in the matter preceding subparagraph (A), by striking “section 362(b) or (e)” and inserting “subsection (b) or (e) of section 364”.

(2) CONFORMING AMENDMENTS.—Section 391 of the Energy Policy and Conservation Act (42 U.S.C. 6371) is amended—

(A) in paragraph (2)(M), by striking “section 365(e)(2)” and inserting “section 363(e)(2)”;

and

(B) in paragraph (10), by striking “section 362 of this Act” and inserting “section 364”.

(3) CLERICAL AMENDMENT.—The table of contents of the Energy Policy and Conservation Act (42 U.S.C. 6201 note; Public Law 94–163) is amended by striking the items relating to part D of title III and inserting the following:

“PART D—STATE ENERGY CONSERVATION PROGRAMS

“Sec. 361. Findings and purpose.
“Sec. 362. Definitions.
“Sec. 363. General provisions.
“Sec. 364. State energy conservation plans.
“Sec. 365. Federal assistance to States.
“Sec. 366. State energy efficiency goals.
“Sec. 367. Loans for residential building energy efficiency upgrades.”.
Subtitle G—Smart Energy and Water Efficiency

SEC. 3061. SMART ENERGY AND WATER EFFICIENCY PILOT PROGRAM.

Subtitle A of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16191 et seq.) is amended by adding at the end the following:

“SEC. 918. SMART ENERGY AND WATER EFFICIENCY PILOT PROGRAM.

“(a) DEFINITIONS.—In this section:

“(1) ELIGIBLE ENTITY.—The term ‘eligible entity’ means—

“(A) a utility;

“(B) a municipality;

“(C) a water district;

“(D) an Indian tribe or Alaska Native village; and

“(E) any other authority that provides water, wastewater, or water reuse services.

“(2) SMART ENERGY AND WATER EFFICIENCY PILOT PROGRAM.—The term ‘smart energy and water efficiency pilot program’ or ‘pilot program’ means the pilot program established under subsection (b).
“(b) Smart Energy and Water Efficiency Pilot Program.—

“(1) In general.—The Secretary shall establish and carry out a smart energy and water efficiency pilot program in accordance with this section.

“(2) Purpose.—The purpose of the smart energy and water efficiency pilot program is to award grants to eligible entities to demonstrate unique, advanced, or innovative technology-based solutions that will—

“(A) increase the energy efficiency of water, wastewater, and water reuse systems;

“(B) improve energy efficiency of water, wastewater, and water reuse systems to help communities across the United States make measurable progress in conserving water, saving energy, and reducing costs;

“(C) support the implementation of innovative and unique processes and the installation of established advanced automated systems that provide real-time data on energy and water; and

“(D) improve energy-water conservation and quality and predictive maintenance through technologies that utilize internet connected...
technologies, including sensors, intelligent gateways, and security embedded in hardware.

“(3) Project selection.—

“(A) In general.—The Secretary shall make competitive, merit-reviewed grants under the pilot program to not less than 3, but not more than 5, eligible entities.

“(B) Selection criteria.—In selecting an eligible entity to receive a grant under the pilot program, the Secretary shall consider—

“(i) energy and cost savings;

“(ii) the uniqueness, commercial viability, and reliability of the technology to be used;

“(iii) the degree to which the project integrates next-generation sensors software, analytics, and management tools;

“(iv) the anticipated cost-effectiveness of the pilot project through measurable energy efficiency savings, water savings or reuse, and infrastructure costs averted;

“(v) whether the technology can be deployed in a variety of geographic regions and the degree to which the technology can be implemented in a wide range of applica-
tions ranging in scale from small towns to large cities, including tribal communities;

“(vi) whether the technology has been successfully deployed elsewhere;

“(vii) whether the technology was sourced from a manufacturer based in the United States; and

“(viii) whether the project will be completed in 5 years or less.

“(C) APPLICATIONS.—

“(i) IN GENERAL.—Subject to clause (ii), an eligible entity seeking a grant under the pilot program shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary determines to be necessary.

“(ii) CONTENTS.—An application under clause (i) shall, at a minimum, include—

“(I) a description of the project;

“(II) a description of the technology to be used in the project;
“(III) the anticipated results, including energy and water savings, of the project;

“(IV) a comprehensive budget for the project;

“(V) the names of the project lead organization and any partners;

“(VI) the number of users to be served by the project;

“(VII) a description of the ways in which the proposal would meet performance measures established by the Secretary; and

“(VIII) any other information that the Secretary determines to be necessary to complete the review and selection of a grant recipient.

“(4) Administration.—

“(A) In general.—Not later than 300 days after the date of enactment of this section, the Secretary shall select grant recipients under this section.

“(B) Evaluations.—

“(i) Annual evaluations.—The Secretary shall annually carry out an eval-
uation of each project for which a grant is provided under this section that meets performance measures and benchmarks developed by the Secretary, consistent with the purposes of this section.

“(ii) Requirements.—Consistent with the performance measures and benchmarks developed under clause (i), in carrying out an evaluation under that clause, the Secretary shall—

“(I) evaluate the progress and impact of the project; and

“(II) assesses the degree to which the project is meeting the goals of the pilot program.

“(C) Technical and policy assistance.—On the request of a grant recipient, the Secretary shall provide technical and policy assistance.

“(D) Best practices.—The Secretary shall make available to the public through the Internet and other means the Secretary considers to be appropriate—

“(i) a copy of each evaluation carried out under subparagraph (B); and
“(ii) a description of any best practices identified by the Secretary as a result of those evaluations.

“(E) REPORT TO CONGRESS.—The Secretary shall submit to Congress a report containing the results of each evaluation carried out under subparagraph (B).

“(c) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $15,000,000, to remain available until expended.”.

Subtitle H—Regional Energy Partnerships

SEC. 3071. DEFINITIONS.

In this subtitle:

(1) COOPERATIVE AGREEMENT.—The term “cooperative agreement” has the meaning given the term in sections 6302 and 6305 of title 31, United States Code.

(2) SECRETARIES.—The term “Secretaries” means—

(A) the Secretary, acting through the Assistant Secretary of the Office of Electricity Delivery and Energy Reliability in consultation with the Assistant Secretary of Energy Efficiency and Renewable Energy, the Assistant
Secretary of Fossil Energy, and the Director of
the Office of Nuclear Energy, Science, and
Technology Programs; and

(B) the Secretary of the Interior, acting
through the Assistant Secretary for Land and
Minerals Management in consultation with the
Director of the Bureau of Land Management,
the Director of the Bureau of Ocean Energy
Management, the Assistant Secretary for In-
dian Affairs, and the Assistant Secretary for
Fish and Wildlife and Parks.

(3) STATE.—The term “State” means—

(A) a State;

(B) the District of Columbia;

(C) the Commonwealth of Puerto Rico;

and

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

SEC. 3072. REGIONAL ENERGY PARTNERSHIPS.

(a) IN GENERAL.—The Secretaries shall provide as-
sistance in accordance with this section for the purpose
of developing energy strategies and plans that help har-
monize and promote national, regional, and State energy
goals, including goals for advancing resilient energy sys-
tems to mitigate risks and prepare for emerging energy challenges.

(b) TECHNICAL ASSISTANCE.—The Secretaries may provide such technical assistance to States, political subdivisions of States, substate regional organizations (including organizations that cross State boundaries), multistate regional organizations, Indian tribes, and nonprofit organizations as the Secretaries determine appropriate to promote—

(1) the development and improvement of regional energy strategies, where appropriate, and plans that sustain and promote energy system modernization across the United States;

(2) investment in energy infrastructure, technological capacity, innovation, and workforce development to keep pace with the changing energy ecosystem;

(3) structural transformation of the financial, regulatory, legal, and institutional systems that govern energy planning, production, and delivery within States and regions; and

(4) public-private partnerships for the implementation of regional energy strategies and plans.

(c) COOPERATIVE AGREEMENTS.—
(1) **IN GENERAL.**—The Secretaries may enter into cooperative agreements with one or more States and Indian tribes, on a regional basis, to develop and implement strategies and plans to address the energy challenges of States, Indian tribes, and regions.

(2) **REQUIREMENTS.**—A cooperative agreement entered into under this subsection shall include provisions covering or providing—

(A) the purpose and goals of the cooperative agreement, such as advancing energy efficiency, clean energy, fuel and supply diversity, energy system resiliency, economic development, or other goals to make measurable, significant progress toward specified metrics and objectives that are agreed to by the States or Indian tribes and the Secretaries;

(B) the roles and responsibilities of the States or Indian tribes and the Secretaries for various functions of the cooperative agreement, including outreach, communication, resources, and capabilities;

(C) a comprehensive framework for the development of energy strategies and plans for States, Indian tribes, or regions;
(D) timeframes with associated metrics and objectives;

(E) a governance structure to resolve conflicts and facilitate decisionmaking consistent with underlying authorities; and

(F) other provisions determined necessary by the Secretaries, in consultation with the States or Indian tribes, to achieve the purposes described in paragraph (1).

(d) **STAFF.**—

(1) **IN GENERAL.**—Not later than 30 days after the date of the entering into a cooperative agreement under subsection (c), the Secretaries shall, as appropriate, assign or employ individuals who have expertise in the technical and regulatory issues relating to the cooperative agreement, including particular expertise in (as applicable)—

(A) energy systems integration;

(B) renewable energy and energy efficiency;

(C) innovative financing mechanisms;

(D) utility regulatory policy;

(E) modeling and analysis;

(F) facilitation and arbitration;
(G) energy assurance and emergency preparedness; and

(H) cyber and physical security of energy systems.

(2) DUTIES.—Each individual assigned to carry out a cooperative agreement under paragraph (1) shall—

(A) report to a location in the applicable State, Indian tribe, or region not later than 90 days after the date of assignment;

(B) be responsible for issues and technical assistance relating to the cooperative agreement;

(C) participate as part of the team of personnel working on developing and implementing the applicable regional energy strategy and plan; and

(D) build capacity within the State, Indian tribe, or region to continue to implement the goals of this subtitle after the expiration of the cooperative agreement.

(e) COMPREHENSIVE FRAMEWORK.—Under a cooperative agreement, a comprehensive framework shall be developed that identifies opportunities and actions across
various energy sectors and cross-cutting issue areas, including—

(1) end-use efficiency;

(2) energy supply, including electric generation and fuels;

(3) energy storage and delivery;

(4) transportation;

(5) technical integration, including standards and interdependencies;

(6) institutional structures;

(7) regulatory policies;

(8) financial incentives; and

(9) market mechanisms.

(f) AWARDS.—

(1) DEFINITIONS.—In this subsection:

(A) APPLICATION GROUP.—The term “application group” means a group of States or Indian tribes that have—

(i) entered into a cooperative agreement, on a regional basis, with the Secretaries under subsection (c); and

(ii) submitted an application for an award under paragraph (2)(A).
(B) PARTNER STATE.—The term “partner State” means a State or Indian tribe that is part of an application group.

(2) APPLICATIONS.—

(A) IN GENERAL.—Subject to subparagraph (B), an application group may apply to the Secretaries for awards under this subsection.

(B) INDIVIDUAL STATES.—An individual State or Indian tribe that has entered into a cooperative agreement with the Secretaries under subsection (c) may apply to the Secretaries for an award under this subsection if the State or Indian tribe demonstrates to the Secretaries the uniqueness of the energy challenges facing the State or Indian tribe.

(3) BASE AMOUNT.—Subject to paragraph (4), the Secretaries shall provide 6 awards under this subsection, with a base amount of $20,000,000 for each award.

(4) BONUS AMOUNT FOR APPLICATION GROUPS.—

(A) IN GENERAL.—Subject to subparagraph (B), the Secretaries shall increase the amount of an award provided under this sub-
section to an application group for a successful application under paragraph (2)(A) by the quotient obtained by dividing—

(i) the product obtained by multiplying—

(I) the number of partner States in the application group; and

(II) $100,000,000; by

(ii) the total number of partner States of all successful applications under this subsection.

(B) MAXIMUM AMOUNT.—The amount of a bonus determined under subparagraph (A) shall not exceed an amount that represents $5,000,000 for each partner State that is a member of the relevant application group.

(5) LIMITATION.—A State or Indian tribe shall not be part of more than 1 award under this subsection.

(6) SELECTION CRITERIA.—In selecting applications for awards under this subsection, the Secretaries shall consider—

(A) existing commitments from States or Indian tribes, such as memoranda of understanding;
(B) for States that are part of the contiguous 48 States, the number of contiguous States involved that cover a region;

(C) the diversity of the regions represented by all applications;

(D) the amount of cost-share or in-kind contributions from States or Indian tribes;

(E) the scope and focus of regional and State programs and strategies, with an emphasis on energy system resiliency and grid modernization, efficiency, and clean energy;

(F) a management and oversight plan to ensure that objectives are met;

(G) an outreach plan for the inclusion of stakeholders in the process for developing and implementing State or regional energy strategies and plans;

(H) the inclusion of tribal entities;

(I) plans to fund and sustain activities identified in regional energy strategies and plans; and

(J) the clarity of roles and responsibilities of each State and the Secretaries.

(7) USE OF AWARDS.—
(A) IN GENERAL.—Awards provided under this subsection shall be used to achieve the purpose of this section, including by—

(i) conducting technical analyses, resource studies, and energy system baselines;

(ii) convening and providing education to stakeholders on emerging energy issues;

(iii) building decision support and planning tools; and

(iv) improving communication between and participation of stakeholders.

(B) LIMITATION.—Awards provided under this subsection shall not be used for—

(i) capitalization of green banks or loan guarantees; or

(ii) building facilities or funding capital projects.

SEC. 3073. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—There is authorized to be appropriated to carry out this subtitle $250,000,000, to remain available until expended.

(b) ALLOCATION.—Of the amount authorized to be appropriated under subsection (a)—
(1) $120,000,000 shall be used for the base amount of awards under section 3072(f)(3);

(2) $100,000,000 shall be used for the bonus amount of awards under section 3072(f)(4); and

(3) $30,000,000 shall be for the administration of this subtitle, including—

(A) the assignment of staff under section 3072(d); and

(B) if the Secretaries determine appropriate, the sharing of best practices from regional partnerships by parties to cooperative agreements entered into under this subtitle.

(e) STATE ENERGY OFFICES.—Funds provided to a State under this subtitle shall be provided to the office within the State that is responsible for developing the State energy plan for the State under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.).

(d) MAINTENANCE OF FUNDING.—The funding provided to States under this subtitle shall supplement (and not supplant) funding provided under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.).
Subtitle I—Energy Productivity

Innovation Challenge

SEC. 3081. DEFINITIONS.

In this subtitle:

(1) ENERGY PRODUCTIVITY.—The term “energy productivity” means, in the case of a State or Indian tribe, the gross State or tribal product per British thermal unit of energy consumed in the State or tribal land of the Indian tribe, respectively.

(2) INDIAN TRIBE.—The term “Indian tribe” has the meaning given the term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b).

(3) STATE.—The term “State” has the meaning given the term in section 3 of the Energy Policy and Conservation Act (42 U.S.C. 6202).

SEC. 3082. PHASE 1: INITIAL ALLOCATION OF GRANTS TO STATES.

(a) IN GENERAL.—Not later than 30 days after the date of enactment of this Act, the Secretary shall issue an invitation to States to submit plans to participate in an electric and thermal energy productivity challenge in accordance with this section.

(b) GRANTS.—
(1) IN GENERAL.—Subject to section 3085, the Secretary shall use funds made available under section 3086(b)(1) to provide an initial allocation of grants to not more than 25 States.

(2) AMOUNT.—The amount of a grant provided to a State under this section shall be not less than $500,000 nor more than $1,750,000.

(c) SUBMISSION OF PLANS.—To receive a grant under this section, not later than 90 days after the date of issuance of the invitation under subsection (a), a State (in consultation with energy utilities, regulatory bodies, and others) shall submit to the Secretary an application to receive the grant by submitting a revised State energy conservation plan under section 362 of the Energy Policy and Conservation Act (42 U.S.C. 6322).

(d) DECISION BY SECRETARY.—

(1) BASIS.—The Secretary shall base the decision of the Secretary on an application submitted under this section on—

(A) plans for improvement in electric and thermal energy productivity consistent with this subtitle; and

(B) other factors determined appropriate by the Secretary, including geographic diversity.

(2) RANKING.—The Secretary shall—
(A) rank revised plans submitted under this section in order of the greatest to least likely contribution to improving energy productivity in the State; and

(B) provide grants under this section in accordance with the ranking and the scale and scope of a plan.

(c) PLAN REQUIREMENTS.—A plan submitted under subsection (e) shall provide—

(1) a description of the manner in which—

(A) energy savings will be monitored and verified and energy productivity improvements will be calculated using inflation-adjusted dollars;

(B) a statewide baseline of energy use and potential resources for calendar year 2010 will be established to measure improvements;

(C) the plan will promote achievement of energy savings and demand reduction goals;

(D) public and private sector investments in energy efficiency will be leveraged with available Federal funding; and

(E) the plan will not cause cost-shifting among utility customer classes or negatively impact low-income populations; and
(2) an assurance that—

(A) the State energy office required to submit the plan, the energy utilities in the State participating in the plan, and the State public service commission are cooperating and coordinating programs and activities under this subtitle;

(B) the State is cooperating with local units of government, Indian tribes, and energy utilities to expand programs as appropriate; and

(C) grants provided under this subtitle will be used to supplement and not supplant Federal, State, or ratepayer-funded programs or activities in existence on the date of enactment of this Act.

(f) Uses.—A State may use grants provided under this section to promote—

(1) the expansion of policies and programs that will advance industrial energy efficiency, waste heat recovery, combined heat and power, and waste heat-to-power utilization;

(2) the expansion of policies and programs that will advance energy efficiency construction and retrofits for public and private commercial buildings
(including schools, hospitals, and residential buildings, including multifamily buildings) such as through expanded energy service performance contracts, equivalent utility energy service contracts, zero net-energy buildings, and improved building energy efficiency codes;

(3) the expansion of residential policies and programs designed to implement best practice policies and tools for residential retrofit programs that—

(A) reduce administrative and delivery costs for energy efficiency projects;

(B) encourage streamlining and automation to support contractor engagement; and

(C) implement systems that encourage private investment and market innovation;

(4) the establishment or expansion of incentives in the electric utility sector to enhance demand response and energy efficiency, including consideration of additional incentives to promote the purposes of section 111(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)), such as appropriate, cost-effective policies regarding rate structures, grid improvements, behavior change, combined heat and power and waste heat-to-power incentives,
financing of energy efficiency programs, data use incentives, district heating, and regular energy audits; and

(5) leadership by example, in which State activities involving both facilities and vehicle fleets can be a model for other action to promote energy efficiency and can be expanded with Federal grants provided under this subtitle.

SEC. 3083. PHASE 2: SUBSEQUENT ALLOCATION OF GRANTS TO STATES.

(a) Reports.—Not later than 18 months after the receipt of grants under section 3082, each State (in consultation with other parties described in subsection (b)(3)(F)) that received grants under section 3082 may submit to the Secretary a report that describes—

(1) the performance of the programs and activities carried out with the grants; and

(2) in consultation with other parties described in subsection (b)(3)(F), the manner in which additional funds would be used to carry out programs and activities to promote the purposes of this subtitle.

(b) Grants.—

(1) In general.—Not later than 180 days after the date of the receipt of the reports required
under subsection (a), subject to section 3085, the
Secretary shall use amounts made available under
section 3086(b)(2) to provide grants to not more
than 6 States to carry out the programs and activi-
ties described in subsection (a)(2).

(2) AMOUNT.—The amount of a grant provided
to a State under this section shall be not more than
$15,000,000.

(3) BASIS.—The Secretary shall base the deci-
sion of the Secretary to provide grants under this
section on—

(A) the performance of the State in the
programs and activities carried out with grants
provided under section 3082;

(B) the potential of the programs and ac-
tivities described in subsection (a)(2) to achieve
the purposes of this subtitle;

(C) the desirability of maintaining a total
project portfolio that is geographically and
functionally diverse;

(D) the amount of non-Federal funds that
are leveraged as a result of the grants to ensure
that Federal dollars are leveraged effectively;
(E) plans for continuation of the improvements after the receipt of grants under this subtitle; and

(F) demonstrated effort by the State to involve diverse groups, including—

(i) investor-owned, cooperative, and public power utilities;

(ii) local governments; and

(iii) nonprofit organizations.

SEC. 3084. ALLOCATION OF GRANTS TO INDIAN TRIBES.

(a) In general.—Not later than 30 days after the date of enactment of this Act, the Secretary shall invite Indian tribes to submit plans to participate in an electric and thermal energy productivity challenge in accordance with this section.

(b) Submission of plans.—To receive a grant under this section, not later than 90 days after the date of issuance of the invitation under subsection (a), an Indian tribe shall submit to the Secretary a plan to increase electric and thermal energy productivity by the Indian tribe.

(c) Decision by Secretary.—

(1) In general.—Not later than 90 days after the submission of plans under subsection (b), the
Secretary shall make a final decision on the allocation of grants under this section.

(2) Basis.—The Secretary shall base the decision of the Secretary under paragraph (1) on—

(A) plans for improvement in electric and thermal energy productivity consistent with this subtitle;

(B) plans for continuation of the improvements after the receipt of grants under this subtitle; and

(C) other factors determined appropriate by the Secretary, including—

(i) geographic diversity; and

(ii) size differences among Indian tribes.

(3) Limitation.—An individual Indian tribe shall not receive more than 20 percent of the total amount available to carry out this section.

SEC. 3085. ADMINISTRATION.

(a) Independent Evaluation.—To evaluate program performance and effectiveness under this subtitle, the Secretary shall consult with the National Research Council regarding requirements for data and evaluation for recipients of grants under this subtitle.
(b) Coordination With State Energy Conservation Programs.—

(1) In General.—Grants to States under this subtitle shall be provided through additional funding to carry out State energy conservation programs under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.).

(2) Relationship to State Energy Conservation Programs.—

(A) In General.—A grant provided to a State under this subtitle shall be used to supplement (and not supplant) funds provided to the State under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.).

(B) Minimum Funding.—A grant shall not be provided to a State for a fiscal year under this subtitle if the amount of funding provided to all State grantees under the base formula for the fiscal year under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.) is less than $50,000,000.
(c) VOLUNTARY PARTICIPATION.—The participation of a State in a challenge established under this subtitle shall be voluntary.

SEC. 3086. AUTHORIZATION OF APPROPRIATIONS.

(a) In General.—There is authorized to be appropriated to carry out this subtitle $100,000,000 for the period of fiscal years 2016 and 2017.

(b) Allocation.—Of the total amount of funds made available under subsection (a)—

(1) 30 percent shall be used to provide an initial allocation of grants to States under section 3082;

(2) 61 percent shall be used to provide a subsequent allocation of grants to States under section 3083;

(3) 4 percent shall be used to make grants to Indian tribes under section 3084; and

(4) 5 percent shall be available to the Secretary for the cost of administration and technical support to carry out this subtitle.

Subtitle J—Smart Buildings

SEC. 3091. DEFINITIONS.

(a) Definitions.—In this section:
(1) PROGRAM.—The term “program” means the Federal Smart Building Program established under subsection (b)(1).

(2) SMART BUILDING.—The term “smart building” means a building, or collection of buildings, with an energy system that—

(A) is flexible and automated;

(B) has extensive operational monitoring and communication connectivity, allowing remote monitoring and analysis of all building functions;

(C) takes a systems-based approach in integrating the overall building operations for control of energy generation, consumption, and storage;

(D) communicates with utilities and other third-party commercial entities, if appropriate; and

(E) is cybersecure.

(3) SMART BUILDING ACCELERATOR.—The term “smart building accelerator” means an initiative that is designed to demonstrate specific innovative policies and approaches—

(A) with clear goals and a clear timeline; and
(B) that, on successful demonstration, would accelerate investment in energy efficiency.

(b) **Federal Smart Building Program.**—

(1) **Establishment.**—Not later than 1 year after the date of enactment of this Act, the Secretary shall establish a program to be known as the “Federal Smart Building Program”—

(A) to implement smart building technology; and

(B) to demonstrate the costs and benefits of smart buildings.

(2) **Selection.**—

(A) **In general.**—The Secretary shall coordinate the selection of not fewer than 1 building from among each of several key Federal agencies, as described in paragraph (4), to compose an appropriately diverse set of smart buildings based on size, type, and geographic location.

(B) **Inclusion of commercially operated buildings.**—In making selections under subparagraph (A), the Secretary may include buildings that are owned by the Federal Government but are commercially operated.
(3) **TARGETS.**—Not later than 18 months after the date of enactment of this Act, the Secretary shall establish targets for the number of smart buildings to be commissioned and evaluated by key Federal agencies by 3 years and 6 years after the date of enactment of this Act.

(4) **FEDERAL AGENCY DESCRIBED.**—The key Federal agencies referred to in this subsection shall include buildings operated by—

(A) the Department of the Army;

(B) the Department of the Navy;

(C) the Department of the Air Force;

(D) the Department;

(E) the Department of the Interior;

(F) the Department of Veterans Affairs; and

(G) the General Services Administration.

(5) **REQUIREMENT.**—In implementing the program, the Secretary shall leverage existing financing mechanisms including energy savings performance contracts, utility energy service contracts, and annual appropriations.

(6) **EVALUATION.**—Using the guidelines of the Federal Energy Management Program relating to whole-building evaluation, measurement, and
verification, the Secretary shall evaluate the costs and benefits of the buildings selected under para- graph (2), including an identification of—

(A) which advanced building technologies—

(i) are most cost-effective; and

(ii) show the most promise for—

(I) increasing building energy savings;

(II) increasing service performance to building occupants;

(III) reducing environmental impacts; and

(IV) establishing cybersecurity;

and

(B) any other information the Secretary determines to be appropriate.

(7) AWARDS.—The Secretary may expand awards made under the Federal Energy Management Program and the Better Building Challenge to recognize specific agency achievements in accelerating the adoption of smart building technologies.

(e) SURVEY OF PRIVATE SECTOR SMART BUILD- INGS.—
(1) SURVEY.—The Secretary shall conduct a survey of privately owned smart buildings throughout the United States, including commercial buildings, laboratory facilities, hospitals, multifamily residential buildings, and buildings owned by nonprofit organizations and institutions of higher education.

(2) SELECTION.—From among the smart buildings surveyed under paragraph (1), the Secretary shall select not fewer than 1 building each from an appropriate range of building sizes, types, and geographic locations.

(3) EVALUATION.—Using the guidelines of the Federal Energy Management Program relating to whole-building evaluation, measurement, and verification, the Secretary shall evaluate the costs and benefits of the buildings selected under paragraph (2), including an identification of—

(A) which advanced building technologies and systems—

(i) are most cost-effective; and

(ii) show the most promise for—

(I) increasing building energy savings;

(II) increasing service performance to building occupants;
(III) reducing environmental impacts; and

(IV) establishing cybersecurity;

and

(B) any other information the Secretary determines to be appropriate.

(d) LEVERAGING EXISTING PROGRAMS.—

(1) BETTER BUILDING CHALLENGE.—As part of the Better Building Challenge of the Department, the Secretary, in consultation with major private sector property owners, shall develop smart building accelerators to demonstrate innovative policies and approaches that will accelerate the transition to smart buildings in the public, institutional, and commercial buildings sectors.

(2) RESEARCH AND DEVELOPMENT.—

(A) IN GENERAL.—The Secretary shall conduct research and development to address key barriers to the integration of advanced building technologies and to accelerate the transition to smart buildings.

(B) INCLUSION.—The research and development conducted under subparagraph (A) shall include research and development on—
(i) achieving whole-building, systems-level efficiency through smart system and component integration;

(ii) improving physical components, such as sensors and controls, to be adaptive, anticipatory, and networked;

(iii) reducing the cost of key components to accelerate the adoption of smart building technologies;

(iv) data management, including the capture and analysis of data and the interoperability of the energy systems;

(v) protecting against cybersecurity threats and addressing security vulnerabilities of building systems or equipment;

(vi) business models, including how business models may limit the adoption of smart building technologies and how to support transactive energy;

(vii) integration and application of combined heat and power systems and energy storage for resiliency;

(viii) characterization of buildings and components;
(ix) consumer and utility protections;

(x) continuous management, including

the challenges of managing multiple energy systems and optimizing systems for dis-

parate stakeholders; and

(xi) other areas of research and develop-

ment, as determined appropriate by the Secretary.

(e) REPORT.—Not later than 2 years after the date of enactment of this Act, and every 2 years thereafter until a total of 3 reports have been made, the Secretary shall submit to the Committee on Energy and Natural Re-

gources of the Senate and the Committee on Energy and Commerce of the House of Representatives a report on—

(1) the establishment of the Federal Smart Building Program and the evaluation of Federal smart buildings under subsection (b);

(2) the survey and evaluation of private sector smart buildings under subsection (c); and

(3) any recommendations of the Secretary to further accelerate the transition to smart buildings.
Subtitle K—Energy Study

SEC. 3101. ENERGY INFORMATION STUDY.

(a) In General.—Not later than 2 years after the date of enactment of this Act, the Secretary shall complete a study, with opportunity for public comment—

(1) on the impact of—

(A) State and local performance benchmarking and disclosure policies, and any associated building efficiency policies, for commercial and multifamily buildings; and

(B) programs and systems in which utilities provide aggregated information regarding whole building energy consumption and usage information to owners of multitenant commercial, residential, and mixed-use buildings;

(2) that identifies best practice policy approaches studied under paragraph (1) that have resulted in the greatest improvements in building energy efficiency; and

(3) that considers—

(A) compliance rates and the benefits and costs of the policies and programs on building owners, utilities, tenants, and other parties;

(B) utility practices, programs, and systems that provide aggregated energy consump-
tion information to multitenant building ow-
ners, and the impact of public utility commis-
sions and State privacy laws on those practices,
programs, and systems;

(C) exceptions to compliance in existing
laws where building owners are not able to
gather or access whole building energy informa-
tion from tenants or utilities;

(D) the treatment of buildings with—

(i) multiple uses;

(ii) uses for which baseline informa-
tion is not available; and

(iii) uses that require high levels of
energy intensities, such as data centers,
trading floors, and television studios;

(E) implementation practices, including
disclosure methods and phase-in of compliance;

(F) the safety and security of
benchmarking tools offered by government
agencies, and the resiliency of those tools
against cyber attacks; and

(G) international experiences with regard
to building benchmarking and disclosure laws
and data aggregation for multitenant buildings.
(b) Submission to Congress.—At the conclusion of the study, the Secretary shall submit to Congress a report on the results of the study.

SEC. 3102. GRANTS TO UTILITIES.

(a) Grants to Utilities.—Based on the results of the research for the portion of the study described in section 3101(a)(1)(B), and with criteria developed following public notice and comment, the Secretary may make competitive awards to utilities, utility regulators, and utility partners to develop and implement effective and promising programs to provide aggregated whole building energy consumption information to multitenant building owners.

(b) Authorization of Appropriations.—There is authorized to be appropriated to carry out this section $5,000,000 for each of fiscal years 2016 through 2020, to remain available until expended.

SEC. 3103. GRANTS TO STATES AND UNITS OF LOCAL GOVERNMENT.

(a) Grants to Utilities.—Based on the results of the research for the portion of the study described in section 3101(a)(1)(B), and with criteria developed following public notice and comment, the Secretary may make competitive awards to States and units of local government to develop and implement effective and promising benchmarking and disclosure policies, and any associated
building efficiency policies, for commercial and multi-
family buildings.

(b) **AUTHORIZATION OF APPROPRIATIONS.**—There is
authorized to be appropriated to carry out this section
$5,000,000 for each of fiscal years 2016 through 2020,
to remain available until expended.

**SEC. 3104. INPUT FROM STAKEHOLDERS.**

The Secretary shall seek input from stakeholders to
maximize the effectiveness of the actions taken under this
subtitle.

**SEC. 3105. REPORT.**

Not later than 2 years after the date of enactment
of this Act, and every 2 years thereafter, the Secretary
shall submit to Congress a report on the progress made
in complying with this subtitle.

**Subtitle L—Alternative Fueled Vehicles**

**SEC. 3111. ALTERNATIVE FUELED VEHICLE FLEETS AND IN-
FRASTRUCTURE.**

(a) **UTILITY INCENTIVE PROGRAMS.**—Section
546(c)(1) of the National Energy Conservation Policy Act
(42 U.S.C. 8256(c)(1)) is amended by inserting “(including
measures to support the use of alternative fueled vehi-
cles (as defined in section 400AA(g) of the Energy Policy
and Conservation Act (42 U.S.C. 6374(g))) or the fueling
(b) **Energy Savings Performance Contracts.**—

(1) **Authority to enter contracts.**—Section 801(a)(2)(B) of the National Energy Conservation Policy Act (42 U.S.C. 8287(a)(2)(B)) is amended in the first sentence by inserting “or petroleum” after “utilities”.

(2) **Payment of costs.**—Section 802 of the National Energy Conservation Policy Act (42 U.S.C. 8287a) is amended by inserting “petroleum,” after “water,”.

(3) **Definitions.**—Section 804 of the National Energy Conservation Policy Act (42 U.S.C. 8287c) is amended—

   (A) in paragraph (2)—

   (i) in subparagraph (C), by striking “and” after the semicolon;

   (ii) in subparagraph (D), by striking the period at the end and inserting “; or”;

   and

   (iii) by adding at the end the following:

   “(E) a reduction in the use of petroleum through the use of alternative fueled vehicles or
the fueling or charging infrastructure necessary
for alternative fueled vehicles, including the use
of contracts to support alternative fueled vehi-
cles or infrastructure.”;

(B) in paragraph (4)—

(i) in subparagraph (A), by striking
“or” after the semicolon;

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

and

(iii) by adding at the end the fol-
lowing:

“(C) a measure to support the use of alter-
native fueled vehicles or the fueling or charging
infrastructure necessary for alternative fueled
vehicles, including the use of contracts to sup-
port alternative fueled vehicles or infrastruc-
ture.”;

(C) by redesignating paragraphs (1), (2),
(3), and (4), as paragraphs (5), (3), (4), and
(2), respectively, and moving so as to appear in
numerical order; and

(D) by inserting before paragraph (2) (as
so redesignated) the following:
“(1) ALTERNATIVE FUELED VEHICLE.—The term ‘alternative fueled vehicle’ has the meaning given the term in section 400AA(g) of the Energy Policy and Conservation Act (42 U.S.C. 6374(g)).”.

Subtitle M—Outer Continental Shelf

SEC. 3121. REPEAL OF OUTER CONTINENTAL SHELF DEEP WATER AND DEEP GAS ROYALTY RELIEF.

(a) IN GENERAL.—Sections 344 and 345 of the Energy Policy Act of 2005 (42 U.S.C. 15904, 15905) are repealed.

(b) ADMINISTRATION.—The Secretary of the Interior shall not be required to provide for royalty relief in the lease sale terms beginning with the first lease sale held on or after the date of enactment of this Act for which a final notice of sale has not been published.

SEC. 3122. DISPOSITION OF QUALIFIED OUTER CONTINENTAL SHELF REVENUES FROM 181 AREA, 181 SOUTH AREA, AND 2002-2007 PLANNING AREAS OF GULF OF MEXICO.

Section 105 of the Gulf of Mexico Energy Security Act of 2006 (43 U.S.C. 1331 note) is amended to read as follows:
“SEC. 105. DISPOSITION OF QUALIFIED OUTER CONTINENTAL SHELF REVENUES FROM 181 AREA, 181 SOUTH AREA, AND 2002–2007 PLANNING AREAS OF GULF OF MEXICO.

“Notwithstanding section 9 of the Outer Continental Shelf Lands Act (43 U.S.C. 1338) and subject to the other provisions of this section, for each applicable fiscal year, the Secretary of the Treasury shall deposit—

“(1) 87.5 percent of qualified outer Continental Shelf revenues in the general fund of the Treasury; and

“(2) 12.5 percent of qualified outer Continental Shelf revenues in a special account in the Land and Water Conservation Fund established under section 200302 of title 54, United States Code, from which the Secretary shall disburse, without further appropriation, 100 percent to provide financial assistance to States in accordance with section 200305 of that title, which shall be considered income to the Land and Water Conservation Fund for purposes of section 200302 of that title.”.
Subtitle N—Venting and Flaring of Gas

SEC. 3131. REGULATIONS TO PREVENT OR MINIMIZE VENTING AND FLARING OF GAS.

(a) In General.—Not later than 180 days after the date of enactment of this Act, the Secretary of the Interior shall issue regulations under this subtitle—

(1) to prevent or minimize the venting and flaring of gas in oil and gas production operations on Federal land onshore and offshore in the United States; and

(2) to promote the capture and beneficial use or reinjection of gas in the operations referred to in paragraph (1).

(b) Royalties.—A regulation issued under this section shall include provisions that treat gas that is flared or vented in operations under a lease under this subtitle as production for which royalty is required to be paid to the United States.

(e) Limitation on Application to Existing Leases.—Regulations issued under subsection (a) shall not apply with respect to production under a lease in effect on the date of enactment of this Act to the extent such application would constitute a breach of the terms of the lease by the United States.
SEC. 3132. ASSESSMENT OF VENTING AND FLARING OF GAS IN PRODUCTION OPERATIONS IN UNITED STATES.

Not later than 18 months after the date of enactment of this Act, the Comptroller General of the United States shall—

(1) assess the venting and flaring of gas in oil and gas production operations on Federal land onshore and offshore in the United States; and

(2) submit to Congress a report on the venting and flaring of gas in oil and gas production operations on Federal land onshore and offshore in the United States, including an estimate of the volume of gas that is vented or flared in such operations each year.

SEC. 3133. REGULATIONS.

The Secretary of the Interior shall issue regulations that define the terms “vent”, “venting”, “flare”, and “flaring” for purposes of this subtitle.

Subtitle O—Production Incentive Fee

SEC. 3141. PRODUCTION INCENTIVE FEE.

(a) ESTABLISHMENT.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary of the Interior (referred to in this section as...
the “Secretary” shall issue regulations to establish an annual production incentive fee with respect to Federal onshore and offshore land that is subject to a lease for production of oil or natural gas under which production is not occurring.

(2) APPLICATION.—The annual production incentive fee described in paragraph (1) shall apply with respect to land that is subject to a lease described in paragraph (1) that is—

(A) in effect on the date on which final regulations are issued pursuant to this subsection; or

(B) executed after that date.

(b) AMOUNT.—For each acre of land from which oil or natural gas is produced for less than 90 days in a calendar year, the amount of the fee shall be—

(1) in the case of onshore land—

(A) for each of the first 3 years of the lease, $4 per acre (in 2015 dollars);

(B) for the fourth year of the lease, $6 per acre (in 2015 dollars); and

(C) for the fifth year of the lease and each year thereafter for which the lease is otherwise in effect, $8 per acre (in 2015 dollars); and

(2) in the case of offshore land—
(A) for each of the third, fourth, and fifth years of the lease, $4 per acre (in 2015 dollars);

(B) for the sixth year of the lease, $6 per acre (in 2015 dollars); and

(C) for the seventh year of the lease and each year thereafter for which the lease is otherwise in effect, $8 per acre (in 2015 dollars).

(e) ASSESSMENT AND COLLECTION.—The Secretary shall assess and collect the fee established under this section.

(d) DEPOSIT.—Amounts received by the Secretary for the fee under this section shall be reserved for the Secretary for expenditures on inspection, enforcement, and permitting relating to oil and gas.

(e) REGULATIONS.—The Secretary may issue regulations to prevent evasion of the fee under this section.

Subtitle P—Reauthorization of Desalination Act

Sec. 3151. REAUTHORIZATION OF DESALINATION ACT.

(a) DEFINITIONS.—Section 2 of the Water Desalination Act of 1996 (42 U.S.C. 10301 note; Public Law 104–298) is amended—

(1) by redesignating paragraphs (1), (2), (3), (4), and (5) as paragraphs (2), (3), (5), (6), and
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(4), respectively, and moving the paragraphs so as
to appear in numerical order; and

(2) by inserting before paragraph (2) (as so re-
designated) the following:

“(1) ADMINISTRATOR.—The term ‘Adminis-
trator’ means the Administrator of the Environ-
mental Protection Agency.”.

(b) AUTHORIZATION OF RESEARCH AND STUDIES.—
Section 3 of the Water Desalination Act of 1996 (42
U.S.C. 10301 note; Public Law 104–298) is amended by
adding at the end the following:

“(e) PRIORITY.—In carrying out this section,
the Secretary of the Interior shall prioritize funding for
research—

“(1) to reduce energy consumption and lower
the cost of seawater and brackish water desalination;

“(2) to reduce the environmental impacts of
seawater desalination and develop technology and
strategies to minimize those impacts;

“(3) to improve existing reverse osmosis and
membrane technology;

“(4) to carry out basic and applied research on
next generation desalination technologies, including
graphene membranes, forward osmosis, hybrid mem-
brane-thermal desalination, improved energy recov-
ery systems, and renewable energy-powered desalination systems that could significantly reduce desalination costs; and

“(5) to develop portable or modular desalination units capable of providing temporary emergency water supplies for domestic or military deployment purposes.”.

(c) DESALINATION DEMONSTRATION AND DEVELOPMENT.—Section 4 of the Water Desalination Act of 1996 (42 U.S.C. 10301 note; Public Law 104–298) is amended by adding at the end the following:

“(c) PRIORITIZATION.—In carrying out demonstration and development activities under this section, the Secretary shall prioritize projects—

“(1) in drought-stricken States and communities;

“(2) in States that have authorized funding for research and development of desalination technologies and projects; and

“(3) that can reduce reliance on imported water supplies that have an impact on species listed under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.).”.
(d) Authorization of Appropriations.—Section 8 of the Water Desalination Act of 1996 (42 U.S.C. 10301 note; Public Law 104–298) is amended—

(1) in subsection (a), in the first sentence—

(A) by striking "$5,000,000" and inserting "$10,000,000"; and

(B) by striking "2013" and inserting "2020"; and

(2) in subsection (b), by striking "for each of fiscal years 2012 through 2013" and inserting "for each of fiscal years 2016 through 2020".

(e) Consultation.—Section 9 of the Water Desalination Act of 1996 (42 U.S.C. 10301 note; Public Law 104–298) is amended—

(1) by striking the section designation and heading and all that follows through "In carrying out" in the first sentence and inserting the following:

"SEC. 9. Consultation and Coordination.

“(a) Consultation.—In carrying out”;

(2) in the second sentence, by striking “The authorization” and inserting the following:

“(c) Other Desalination Programs.—The authorization”; and
(3) by inserting after subsection (a) (as designated by paragraph (1)) the following:

“(b) COORDINATION OF FEDERAL DESALINATION RESEARCH AND DEVELOPMENT.—

“(1) IN GENERAL.—The White House Office of Science and Technology Policy shall develop a coordinated strategic plan that—

“(A) establishes priorities for future Federal investments in desalination; and

“(B) coordinates the activities of Federal agencies involved in desalination, including the Bureau of Reclamation, the National Science Foundation, the Office of Naval Research of the Department of Defense, the National Laboratories of the Department of Energy, the United States Geological Survey, the Environmental Protection Agency, and the National Oceanic and Atmospheric Administration.”.

(f) DESALINATION PROJECT ASSISTANCE.—The Water Desalination Act of 1996 (42 U.S.C. 10301 note; Public Law 104–298) is amended by adding at the end the following:

“SEC. 10. FEASIBILITY STUDY AND DESIGN ASSISTANCE.

“(a) IN GENERAL.—In order to facilitate the development of water desalination projects, the Administrator
shall develop and implement a program to provide finan-
cial assistance to study the feasibility and support the de-
sign of desalination facilities (including associated water
distribution infrastructure) that provide usable water.

“(b) Feasibility Studies.—

“(1) In general.—The Administrator may
provide grant assistance to a non-Federal project
sponsor to evaluate and determine the feasibility of
a public or public-private desalination project.

“(2) Federal share.—The Federal share for
a feasibility study under paragraph (1) shall not ex-
ceed 50 percent of the cost of the study.

“(3) Criteria for eligibility.—In carrying
out this subsection, the Administrator shall establish
criteria to determine projects eligible for grant fund-
ing based on the ability of the projects to provide re-
geonal water supply benefits, including—

“(A) improving water supply reliability in
regions subject to frequent and severe drought;

“(B) enhancement of public health, safety,
ecosystems, and watershed sustainability;

“(C) preservation of groundwater through
reduction of withdrawals from aquifers;
“(D) offsetting demand for water conveyed from environmentally sensitive areas outside service area of the project; and

“(E) mitigation of saltwater intrusion to aquifers.

“(c) PROJECT DESIGN.—

“(1) IN GENERAL.—The Administrator may provide grant assistance to a non-Federal project sponsor for the design of a public or public-private desalination project.

“(2) FEDERAL SHARE.—The Federal share for project design under paragraph (1) shall not exceed 25 percent of the cost of project design of the project.

“(3) CRITERIA FOR ELIGIBILITY.—In carrying out this subsection, the Administrator shall establish criteria to determine projects eligible for grant funding, including—

“(A) completion of a feasibility study described in subsection (b);

“(B) demonstration of technical feasibility and cost effectiveness;

“(C) completion of all required State and Federal environmental impact analyses;
“(D) receipt of all necessary local, State, and Federal permits;

“(E) demonstration of financial capability of non-Federal project sponsors;

“(F) quantification and net cost of water produced by the project; and

“(G) identification of users of produced water supply, including water purchase agreements and other contractually binding mechanisms.

“(d) GUIDANCE.—Not later than 180 days after the date of enactment of this section, the Administrator shall publish appropriate guidance to implement this section.

“(e) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $10,000,000 for each of fiscal years 2016 through 2020, to remain available until expended.

“(f) REPORT ON DESALINATION TECHNOLOGY.—Not later than 90 days after the date of enactment of this section, the Secretary of the Navy shall submit to Congress a report on the application of desalination technology for defense and national security purposes to provide drought relief to areas impacted by sharp declines in water supply.”.
SEC. 3152. PROMOTING WATER EFFICIENCY WITH WATERSENSE.

(a) In General.—There is established within the Environmental Protection Agency a program, to be known as the “WaterSense Program”, to identify and promote water efficient products, buildings, landscapes, facilities, processes, and services—

(1) to reduce water use;

(2) to reduce the strain on water, wastewater, and stormwater infrastructure;

(3) to conserve energy used to pump, heat, transport, and treat water; and

(4) to preserve water resources for future generations through voluntary labeling of, or other forms of communications regarding, products, buildings, landscapes, facilities, processes, and services that meet the highest water efficiency and performance criteria.

(b) Duties.—The Administrator of the Environmental Protection Agency (referred to in this section as the “Administrator”) shall—

(1) establish—

(A) a WaterSense label to be used for certain items; and

(B) the procedure by which an item may be certified to display the WaterSense label;
(2) promote WaterSense-labeled products, buildings, landscapes, facilities, processes, and services in the marketplace as the preferred technologies and services for—

(A) reducing water use; and

(B) ensuring product and service performance;

(3) work to enhance public awareness of the WaterSense label through public outreach, education, and other means;

(4) preserve the integrity of the WaterSense label by—

(A) establishing and maintaining performance criteria so that products, buildings, landscapes, facilities, processes, and services labeled with the WaterSense label perform as well as, or better than, less water-efficient counterparts;

(B) overseeing WaterSense certifications made by third parties;

(C) conducting reviews of the use of the WaterSense label in the marketplace and taking corrective action in any case in which misuse of the label is identified; and

(D) carrying out such other measures as the Administrator determines to be appropriate;
(5) at least once every 6 years, review and, if appropriate, update WaterSense criteria for categories of products, buildings, landscapes, facilities, processes, and services;

(6) to the maximum extent practicable, at least annually estimate and make available to the public the production and relative market shares of, and the savings of water, energy, and capital costs of water, wastewater, and stormwater infrastructure attributable to the use of WaterSense-labeled products, buildings, landscapes, facilities, processes, and services;

(7) solicit comments from interested parties and the public prior to establishing or revising a WaterSense category, specification, installation criterion, or other criterion;

(8) provide reasonable notice to interested parties and the public of any changes (including effective dates), on the adoption of a new or revised category, specification, installation criterion, or other criterion, along with—

(A) an explanation of the changes; and

(B) as appropriate, responses to comments submitted by interested parties and the public;
(9) provide appropriate lead time (as determined by the Administrator) prior to the applicable effective date for a new or significant revision to a category, specification, installation criterion, or other criterion, taking into account the timing requirements of the manufacturing, marketing, training, and distribution process for the specific product, building and landscape, or service category addressed;

(10) identify and, if appropriate, implement other voluntary approaches in commercial, institutional, residential, industrial, and municipal sectors to encourage recycling and reuse technologies to improve water efficiency or lower water use; and

(11) if appropriate, authorize the WaterSense label for use on products that are labeled by the Energy Star program implemented by the Administrator and the Secretary of Energy.

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

(1) $5,000,000 for fiscal year 2016;
(2) $5,000,000 for fiscal year 2017;
(3) $5,000,000 for fiscal year 2018;
(4) $5,000,000 for fiscal year 2019; and
(5) for each fiscal year thereafter, the applicable amount for the preceding fiscal year, as adjusted to reflect changes for the 12-month period ending the preceding November 30 in the Consumer Price Index for All Urban Consumers published by the Bureau of Labor Statistics of the Department of Labor.

SEC. 3153. INCREASING OPPORTUNITIES FOR AGRICULTURAL CONSERVATION.

(a) IN GENERAL.—The Secretary of the Interior (referred to in this section as the "Secretary") shall offer to enter into voluntary agreements with public water agencies or other entities that receive water from any project operated by the Bureau of Reclamation to implement water conservation programs.

(b) USES OF CONSERVED WATER.—

(1) IN GENERAL.—Except as provided in paragraph (2), of the quantity of water conserved as a result of an agreement entered into pursuant to subsection (a)—

(A) 25 percent shall be retained by the public water agency or entity with which the Secretary has entered into the agreement; and

(B) 75 percent shall be retained by the Secretary, of which—
(i) 33 percent shall be used or marketed on an annual basis for purposes that will promote groundwater recharge and conservation; and

(ii) 67 percent shall be used on an annual basis for refuge water supply or other authorized project purposes.

(2) EXCEPTIONS.—For good reason in a particular instance, the Secretary and the public water agency or entity with which the Secretary has entered into an agreement may agree to modify the percentages referred to in paragraph (1).

(c) CONTRIBUTED FUNDS.—

(1) IN GENERAL.—Any existing water service or repayment contractor within the project service area of a water conservation agreement under this section may contribute funds for the implementation of the agreement.

(2) ACTION BY SECRETARY.—The Secretary shall provide to each contractor that contributes funds under paragraph (1) such portion of the water described in subsection (b)(1)(B)(ii) as the Secretary determines to be appropriate, but not to exceed the proportion of funds contributed by the contractor.
(3) ADDITIONAL WATER.—If a contractor contributes more than 50 percent of the cost of a project carried out under an agreement under this section, the Secretary may enter into an agreement with the contractor to provide to the contractor such portion of the water described in subsection (b)(1)(B)(i) for groundwater recharge and conservation as the Secretary determines to be appropriate, subject to the condition that the contractor shall not receive a higher proportion of the water conserved than the proportion of funds contributed by the contractor.

SEC. 3154. SUPPORT FOR INNOVATIVE WATER SUPPLY AND CONSERVATION TECHNOLOGIES.

(a) IN GENERAL.—To promote the development of innovative water supply and conservation technologies, the Administrator of the Environmental Protection Agency (referred to in this section as the “Administrator”) may award, on a competitive basis, grants and enter into contracts to assist in the financing of research and demonstration projects for those innovative technologies.

(b) ELIGIBLE ENTITIES.—To be eligible to receive an award under this section, an entity shall be—

(1) a local entity;
(2) a public nonprofit institution or organization;

(3) a commercial entity;

(4) a federally recognized Indian tribe; or

(5) a nonprofit institution or organization.

(c) ELIGIBILITY CRITERIA.—The Administrator shall establish criteria for an entity described in subsection (b) to be eligible to receive a grant from, or enter into a contract with, the Administrator under this section, including—

(1) demonstration of the technical feasibility of the proposal and the qualifications of the entity to carry out the proposal;

(2) demonstration of the financial capability and creditworthiness of non-Federal project sponsors;

(3) compliance with all applicable laws and receipt of all necessary local, State, and Federal permits; and

(4) quantification of the estimated water to be produced or saved by the project and the net cost of the project.

(d) EVALUATION CRITERIA.—The Administrator shall establish criteria for evaluating on a competitive
basis eligible applicants under this section, including the degree to which the proposed technology—

(1) proposes an innovation that has broad, fundamental implications for water savings or water supply;

(2) is economically feasible;

(3) could reduce the costs of water supply, including reductions in associated energy costs;

(4) would solve environmental concerns or provide environmental benefits;

(5) has a proof of concept, and a likely path to success within a reasonable timeframe; and

(6) is aimed at the development of a specific water saving or water supply application, as opposed to basic research aimed at discovery and fundamental knowledge generation.

(e) AUTHORITY TO ENGAGE OTHERS.—

(1) IN GENERAL.—In carrying out research under this section, the Administrator may engage such personnel, industrial or engineering entities, Federal laboratories, water resources research and technology institutions, other facilities, and educational institutions as the Administrator determines to be necessary.
(2) TECHNICAL AND ADMINISTRATIVE ASSISTANCE.—The Administrator may—

(A) accept technical and administrative assistance from States and public or private agencies in connection with studies, surveys, location, construction, operation, and other work relating to the desalting of water; and

(B) enter into contracts or agreements that—

(i) establish the purposes for which the assistance is contributed; and

(ii) provide for the sharing of costs between the Administrator and any such agency.

(f) COST SHARING.—

(1) FEDERAL COST SHARE.—Subject to paragraph (2), the Federal share of the cost of a project under this section shall not exceed 25 percent, unless the Administrator determines that the project is not feasible without an increased Federal contribution.

(2) MAXIMUM FEDERAL COST SHARE.—Notwithstanding paragraph (1), the Federal share of the cost of a project under this section shall not exceed 50 percent of the total project cost.
(3) Procedures for Allocating Costs.—

(A) In General.—The Administrator shall prescribe appropriate procedures to implement this section.

(B) Non-Federal Costs.—The costs of operation, maintenance, repair, and rehabilitation of any facility funded under this section shall be a non-Federal responsibility.

(g) Authorization of Appropriations.—There is authorized to be appropriated to carry out this section $35,000,000 for the period of fiscal years 2016 through 2020.

**TITLE IV—INVESTING IN RESEARCH AND DEVELOPMENT**

**SEC. 4001. BASIC RESEARCH.**

Section 971(b) of the Energy Policy Act of 2005 (42 U.S.C. 16311(b)) is amended—

(1) in paragraph (6), by striking “and” at the end;

(2) in paragraph (7), by striking the period at the end and inserting “; and”; and

(3) by adding at the end the following:

“(8) $15,000,000,000 for each of fiscal years 2016 through 2020.”.
SEC. 4002. ADVANCED RESEARCH PROJECTS AGENCY-ENERGY.

Section 5012 of the America COMPETES Act (42 U.S.C. 16538) is amended—

(1) in subsection (a)(3), by striking “subsection (n)(1)” and inserting “subsection (o)(1)”;

(2) in subsection (i), by striking paragraph (1) and inserting the following:

“(1) IN GENERAL.—To the maximum extent practicable, the Director shall ensure that—

“(A) the activities of ARPA–E are coordinated with, and do not duplicate the efforts of, programs and laboratories within the Department and other relevant research agencies; and

“(B) ARPA–E does not provide funding for a project unless the prospective grantee demonstrates sufficient attempts to secure private financing or indicates that the project is not independently commercially viable.”;

(3) by redesignating subsection (n) as subsection (o);

(4) by inserting after subsection (m) the following:

“(n) PROTECTION OF INFORMATION.—The following types of information collected by the ARPA–E from recipients of financial assistance awards shall be considered
privilege and confidential and not subject to disclosure under section 552 of title 5, United States Code:

“(1) Plans for commercialization of technologies developed under the award, including business plans, technology-to-market plans, market studies, and cost and performance models.

“(2) Investments provided to an awardee from third parties (such as venture capital firms, hedge funds, and private equity firms), including amounts and the percentage of ownership of the awardee provided in return for the investments.

“(3) Additional financial support that the awardee—

“(A) plans to or has invested into the technology developed under the award; or

“(B) is seeking from third parties.

“(4) Revenue from the licensing or sale of new products or services resulting from research conducted under the award.”; and

(5) in subsection (o) (as redesignated by paragraph (3))—

(A) in paragraph (2)—

(i) in the matter preceding subparagraph (A), by striking “paragraphs (4) and (5)” and inserting “paragraph (4)”;
(ii) in subparagraph (D), by striking “and” at the end;

(iii) in subparagraph (E), by striking the period at the end and inserting “; and”;

(iv) by adding at the end the following:

“(F) $1,000,000,000 for each of fiscal years 2016 through 2020.”; and

(B) in paragraph (4)(B), by striking “(c)(2)(D)” and inserting “(c)(2)(C)”.

**TITLE V—INVESTING IN CLEAN ENERGY**

**SEC. 5001. AMENDMENT OF 1986 CODE.**

Except as otherwise expressly provided, whenever in this title an amendment or repeal is expressed in terms of an amendment to, or repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of the Internal Revenue Code of 1986.
Subtitle A—Clean Energy Tax Credits

SEC. 5011. CLEAN ENERGY PRODUCTION CREDIT.

(a) In General.—Subpart D of part IV of subchapter A of chapter 1 is amended by adding at the end the following new section:

"SEC. 45S. CLEAN ENERGY PRODUCTION CREDIT.

"(a) AMOUNT OF CREDIT.—

"(1) IN GENERAL.—For purposes of section 38, the clean energy production credit for any taxable year is an amount equal to the product of—

"(A) the applicable credit rate (as determined under paragraph (2)), multiplied by

"(B) the kilowatt hours of electricity—

"(i) produced by the taxpayer at a qualified facility, and

"(ii)(I) sold by the taxpayer to an unrelated person during the taxable year, or

"(II) in the case of a qualified facility which is equipped with a metering device which is owned and operated by an unrelated person, sold, consumed, or stored by the taxpayer during the taxable year.

"(2) APPLICABLE CREDIT RATE.—

"(A) IN GENERAL.—
“(i) Maximum credit rate.—Except as provided in clause (ii), the applicable credit rate is 1.5 cents.

“(ii) Reduction of credit based on greenhouse gas emission rate.—The applicable credit rate shall be reduced (but not below zero) by an amount which bears the same ratio to the amount in effect under clause (i) as the greenhouse gas emissions rate for the qualified facility bears to 372 grams of CO$_2$e per KWh.

“(B) Rounding.—If any amount determined under subparagraph (A)(ii) is not a multiple of 0.1 cent, such amount shall be rounded to the nearest multiple of 0.1 cent.

“(b) Greenhouse gas emissions rate.—

“(1) In general.—For purposes of this section, the term ‘greenhouse gas emissions rate’ means the amount of greenhouse gases emitted into the atmosphere by a qualified facility in the production of electricity, expressed as grams of CO$_2$e per KWh.

“(2) Non-fossil fuel combustion and gasification.—In the case of a qualified facility which produces electricity through combustion or gasification of a non-fossil fuel, the greenhouse gas emis-
sions rate for such facility shall be equal to the net rate of greenhouse gases emitted into the atmosphere by such facility in the production of electricity, expressed as grams of CO\textsubscript{2}e per KWh.

“(3) Establishment of Safe Harbor for Qualified Facilities.—

“(A) In General.—The Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall, by regulation, establish safe-harbor greenhouse gas emissions rates for types or categories of qualified facilities, which a taxpayer may elect to use for purposes of this section.

“(B) Rounding.—In establishing the safe-harbor greenhouse gas emissions rates for qualified facilities, the Secretary may round such rates to the nearest multiple of 37.2 grams of CO\textsubscript{2}e per KWh (or, in the case of a greenhouse gas emissions rate which is less than 18.6 grams of CO\textsubscript{2}e per KWh, by rounding such rate to zero).

“(4) Carbon Capture and Sequestration Equipment.—For purposes of this subsection, the amount of greenhouse gases emitted into the atmosphere by a qualified facility in the production of
electricity shall not include any qualified carbon di-
oxide (as defined in section 48E(e)(3)(A)) that is
captured and disposed of by the taxpayer.

“(c) INFLATION ADJUSTMENT.—

“(1) IN GENERAL.—In the case of a calendar
year beginning after 2018, the 1.5 cent amount in
clause (i) of subsection (a)(2)(A) shall be adjusted
by multiplying such amount by the inflation adjust-
ment factor for the calendar year in which the sale
or use of the electricity occurs. If any amount as in-
creased under the preceding sentence is not a mul-
tiple of 0.1 cent, such amount shall be rounded to
the nearest multiple of 0.1 cent.

“(2) ANNUAL COMPUTATION.—The Secretary
shall, not later than April 1 of each calendar year,
determine and publish in the Federal Register the
inflation adjustment factor for such calendar year in
accordance with this subsection.

“(3) INFLATION ADJUSTMENT FACTOR.—The
term ‘inflation adjustment factor’ means, with re-
spect to a calendar year, a fraction the numerator
of which is the GDP implicit price deflator for the
preceding calendar year and the denominator of
which is the GDP implicit price deflator for the cal-
endar year 1992. The term ‘GDP implicit price
deflator’ means the most recent revision of the implicit price deflator for the gross domestic product as computed and published by the Department of Commerce before March 15 of the calendar year.

“(d) CREDIT PHASE-OUT.—

“(1) IN GENERAL.—Subject to paragraph (3), if the Secretary, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency, determines that the annual greenhouse gas emissions from electrical production in the United States are equal to or less than 72 percent of the annual greenhouse gas emissions from electrical production in the United States for calendar year 2005, the amount of the clean energy production credit under subsection (a) for any qualified facility placed in service during a calendar year described in paragraph (2) shall be equal to the product of—

“(A) the amount of the credit determined under subsection (a) without regard to this subsection, multiplied by

“(B) the phase-out percentage under paragraph (2).

“(2) PHASE-OUT PERCENTAGE.—The phase-out percentage under this paragraph is equal to—
“(A) for a facility placed in service during the first calendar year following the calendar year in which the determination described in paragraph (1) is made, 75 percent,

“(B) for a facility placed in service during the second calendar year following such determination year, 50 percent,

“(C) for a facility placed in service during the third calendar year following such determination year, 25 percent, and

“(D) for a facility placed in service during any calendar year subsequent to the year described in subparagraph (C), 0 percent.

“(3) DEADLINE TO BEGIN PHASE-OUT.—If the Secretary, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency, determines that the annual greenhouse gas emissions from electrical production in the United States for each year before calendar year 2026 are greater than the percentage specified in paragraph (1), then the determination described in such paragraph shall be deemed to have been made for calendar year 2025.

“(e) DEFINITIONS.—In this section:
“(1) \(\text{CO}_2\text{e per kWh.}\) — The term ‘\(\text{CO}_2\text{e per kWh.}\)’ means, with respect to any greenhouse gas, the equivalent carbon dioxide per kilowatt hour of electricity produced.

“(2) \text{GREENHOUSE GAS.} — The term ‘greenhouse gas’ has the same meaning given such term under section 211(o)(1)(G) of the Clean Air Act (42 U.S.C. 7545(o)(1)(G)), as in effect on the date of the enactment of this section.

“(3) \text{QUALIFIED FACILITY.} —

“(A) \text{IN GENERAL.} — Subject to subparagraphs (B) and (C), the term ‘qualified facility’ means a facility which is—

“(i) used for the generation of electricity, and

“(ii) originally placed in service after December 31, 2017.

“(B) \text{10-YEAR PRODUCTION CREDIT.} — For purposes of this section, a facility shall only be treated as a qualified facility during the 10-year period beginning on the date the facility was originally placed in service.

“(C) \text{EXPANSION OF FACILITY; INCREMENTAL PRODUCTION.} — A qualified facility shall include either of the following in connec-
tion with a facility described in subparagraph (A)(i) that was previously placed in service, but only to the extent of the increased amount of electricity produced at the facility by reason of the following:


“(ii) Any efficiency improvements or additions of capacity placed in service after December 31, 2017.

“(D) COORDINATION WITH OTHER CREDITS.—The term ‘qualified facility’ shall not include any facility for which—

“(i) a renewable electricity production credit determined under section 45 is allowed under section 38 for the taxable year or any prior taxable year,

“(ii) an energy credit determined under section 48 is allowed under section 38 for the taxable year or any prior taxable year, or

“(iii) a clean energy investment credit determined under section 48E is allowed under section 38 for the taxable year or any prior taxable year.
“(f) Final Guidance.—Not later than January 1, 2017, the Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall issue final guidance regarding implementation of this section, including calculation of greenhouse gas emission rates for qualified facilities and determination of clean energy production credits under this section.

“(g) Special Rules.—

“(1) Only production in the United States taken into account.—Consumption or sales shall be taken into account under this section only with respect to electricity the production of which is within—

“(A) the United States (within the meaning of section 638(1)), or

“(B) a possession of the United States (within the meaning of section 638(2)).

“(2) Combined heat and power system property.—

“(A) In general.—For purposes of subsection (a)(1)(B), the kilowatt hours of electricity produced by a taxpayer at a qualified facility shall include any production in the form of useful thermal energy by any combined heat and power system property within such facility.
"(B) Combined heat and power system property.—For purposes of this paragraph, the term ‘combined heat and power system property’ has the same meaning given such term by section 48(e)(3) (without regard to subparagraphs (A)(iv), (B), and (D) thereof).

“(C) Conversion from BTU to KWH.—

“(i) In general.—For purposes of subparagraph (A), the amount of kilowatt hours of electricity produced in the form of useful thermal energy shall be equal to the quotient of—

“(I) the total useful thermal energy produced by the combined heat and power system property within the qualified facility, divided by

“(II) the heat rate for such facility.

“(ii) Heat rate.—For purposes of this subparagraph, the term ‘heat rate’ means the amount of energy used by the qualified facility to generate 1 kilowatt hour of electricity, expressed as British thermal units per net kilowatt hour generated.
“(3) Production attributable to the taxpayer.—In the case of a qualified facility in which more than 1 person has an ownership interest, except to the extent provided in regulations prescribed by the Secretary, production from the facility shall be allocated among such persons in proportion to their respective ownership interests in the gross sales from such facility.

“(4) Related persons.—Persons shall be treated as related to each other if such persons would be treated as a single employer under the regulations prescribed under section 52(b). In the case of a corporation which is a member of an affiliated group of corporations filing a consolidated return, such corporation shall be treated as selling electricity to an unrelated person if such electricity is sold to such a person by another member of such group.

“(5) Pass-thru in the case of estates and trusts.—Under regulations prescribed by the Secretary, rules similar to the rules of subsection (d) of section 52 shall apply.

“(6) Allocation of credit to patrons of agricultural cooperative.—

“(A) Election to allocate.—
“(i) IN GENERAL.—In the case of an eligible cooperative organization, any portion of the credit determined under subsection (a) for the taxable year may, at the election of the organization, be apportioned among patrons of the organization on the basis of the amount of business done by the patrons during the taxable year.

“(ii) FORM AND EFFECT OF ELECTION.—An election under clause (i) for any taxable year shall be made on a timely filed return for such year. Such election, once made, shall be irrevocable for such taxable year. Such election shall not take effect unless the organization designates the apportionment as such in a written notice mailed to its patrons during the payment period described in section 1382(d).

“(B) TREATMENT OF ORGANIZATIONS AND PATRONS.—The amount of the credit apportioned to any patrons under subparagraph (A)—

“(i) shall not be included in the amount determined under subsection (a)
with respect to the organization for the taxable year, and

“(ii) shall be included in the amount determined under subsection (a) for the first taxable year of each patron ending on or after the last day of the payment period (as defined in section 1382(d)) for the taxable year of the organization or, if earlier, for the taxable year of each patron ending on or after the date on which the patron receives notice from the cooperative of the apportionment.

“(C) SPECIAL RULES FOR DECREASE IN CREDITS FOR TAXABLE YEAR.—If the amount of the credit of a cooperative organization determined under subsection (a) for a taxable year is less than the amount of such credit shown on the return of the cooperative organization for such year, an amount equal to the excess of—

“(i) such reduction, over

“(ii) the amount not apportioned to such patrons under subparagraph (A) for the taxable year,
shall be treated as an increase in tax imposed by this chapter on the organization. Such increase shall not be treated as tax imposed by this chapter for purposes of determining the amount of any credit under this chapter.

“(D) Eligible cooperative defined.—

For purposes of this section, the term ‘eligible cooperative’ means a cooperative organization described in section 1381(a) which is owned more than 50 percent by agricultural producers or by entities owned by agricultural producers. For this purpose an entity owned by an agricultural producer is one that is more than 50 percent owned by agricultural producers.”.

(b) Conforming Amendments.—

(1) Section 38(b) is amended—

(A) in paragraph (35), by striking “plus” at the end,

(B) in paragraph (36), by striking the period at the end and inserting “, plus”, and

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

“(37) the clean energy production credit determined under section 45S(a).”.
(2) The table of sections for subpart D of part
IV of subchapter A of chapter 1 is amended by add-
ing at the end the following new item:

“Sec. 45S. Clean energy production credit.”.

c) EFFECTIVE DATE.—The amendments made by
this section shall apply to facilities placed in service after
December 31, 2017.

SEC. 5012. CLEAN ENERGY INVESTMENT CREDIT.

(a) BUSINESS CREDIT.—

(1) IN GENERAL.—Subpart E of part IV of
subchapter A of chapter 1 is amended by inserting
after section 48D the following new section:

“SEC. 48E. CLEAN ENERGY INVESTMENT CREDIT.

“(a) INVESTMENT CREDIT FOR QUALIFIED PRO-
PERTY.—

“(1) IN GENERAL.—For purposes of section 46,
the clean energy investment credit for any taxable
year is an amount equal to the sum of—

“(A) the clean energy percentage of the
qualified investment for such taxable year with
respect to any qualified facility, plus

“(B) 30 percent of the qualified invest-
ment for such taxable year with respect to
qualified carbon capture and sequestration
equipment, plus
“(C) 30 percent of the qualified investment for such taxable year with respect to energy storage property.

“(2) CLEAN ENERGY PERCENTAGE.—

“(A) IN GENERAL.—

“(i) MAXIMUM PERCENTAGE.—Except as provided in clause (ii), the clean energy percentage is 30 percent.

“(ii) REDUCTION OF PERCENTAGE BASED ON GREENHOUSE GAS EMISSIONS RATE.—The clean energy percentage shall be reduced (but not below zero) by an amount which bears the same ratio to 30 percent as the anticipated greenhouse gas emissions rate for the qualified facility bears to 372 grams of CO$_2$e per KWh.

“(B) ROUNDING.—If any amount determined under subparagraph (A)(ii) is not a multiple of 1 percent, such amount shall be rounded to the nearest multiple of 1 percent.

“(3) COORDINATION WITH REHABILITATION CREDIT.—The clean energy percentage shall not apply to that portion of the basis of any property which is attributable to qualified rehabilitation expenditures (as defined in section 47(c)(2)).
“(b) Qualified Investment With Respect To Any Qualified Facility.—

“(1) In General.—For purposes of subsection (a)(1)(A), the qualified investment with respect to any qualified facility for any taxable year is the basis of any qualified property placed in service by the taxpayer during such taxable year which is part of a qualified facility.

“(2) Qualified Property.—The term ‘qualified property’ means property—

“(A) which is—

“(i) tangible personal property, or

“(ii) other tangible property (not including a building or its structural components), but only if such property is used as an integral part of the qualified facility,

“(B) with respect to which depreciation (or amortization in lieu of depreciation) is allowable,

“(C) which is constructed, reconstructed, erected, or acquired by the taxpayer, and

“(D) the original use of which commences with the taxpayer.

“(3) Qualified Facility.—The term ‘qualified facility’ has the same meaning given such term
by section 45S(e)(3) (without regard to subparagraphs (B) and (D) thereof). Such term shall not include any facility for which a renewable electricity production credit under section 45 or an energy credit determined under section 48 is allowed under section 38 for the taxable year or any prior taxable year.

“(c) QUALIFIED INVESTMENT WITH RESPECT TO QUALIFIED CARBON CAPTURE AND SEQUESTRATION EQUIPMENT.—

“(1) IN GENERAL.—For purposes of subsection (a)(1)(B), the qualified investment with respect to qualified carbon capture and sequestration equipment for any taxable year is the basis of any qualified carbon capture and sequestration equipment placed in service by the taxpayer during such taxable year.

“(2) QUALIFIED CARBON CAPTURE AND SEQUESTRATION EQUIPMENT.—The term ‘qualified carbon capture and sequestration equipment’ means property—

“(A) installed in a facility placed in service before January 1, 2018, which produces electricity,
“(B) which results in at least a 50 percent reduction in the carbon dioxide emissions rate at the facility, as compared to such rate before installation of such equipment, through the capture and disposal of qualified carbon dioxide (as defined in paragraph (3)(A)),

“(C) with respect to which depreciation is allowable,

“(D) which is constructed, reconstructed, erected, or acquired by the taxpayer, and

“(E) the original use of which commences with the taxpayer.

“(3) QUALIFIED CARBON DIOXIDE.—

“(A) IN GENERAL.—The term ‘qualified carbon dioxide’ means carbon dioxide captured from an industrial source which—

“(i) would otherwise be released into the atmosphere as industrial emission of greenhouse gas,

“(ii) is measured at the source of capture and verified at the point of disposal or injection,

“(iii) is disposed of by the taxpayer in secure geological storage, and
“(iv) is captured and disposed of within the United States (within the meaning of section 638(1)) or a possession of the United States (within the meaning of section 638(2)).

“(B) Secure geological storage.— The term ‘secure geological storage’ has the same meaning given to such term under section 45Q(d)(2).

“(d) Qualified investment with respect to energy storage property.—

“(1) In general.—For purposes of subsection (a)(1)(C), the qualified investment with respect to energy storage property for any taxable year is the basis of any energy storage property placed in service by the taxpayer during such taxable year.

“(2) Energy storage property.—The term ‘energy storage property’ means property—

“(A) installed at or near a facility which produces electricity,

“(B) which receives, stores, and delivers electricity or energy for conversion to electricity which is sold by the taxpayer to an unrelated person (or, in the case of a facility which is equipped with a metering device which is owned
and operated by an unrelated person, sold or consumed by the taxpayer), which may include—

“(i) hydroelectric pumped storage,
“(ii) compressed air energy storage,
“(iii) regenerative fuel cells,
“(iv) batteries,
“(v) superconducting magnetic energy storage,
“(vi) thermal energy storage systems,
“(vii) fuel cells (as defined in section 48(c)(1)),
“(viii) any other relevant technology identified by the Secretary (in consultation with the Secretary of Energy), and
“(ix) any combination of the properties described in clauses (i) through (viii),
“(C) with respect to which depreciation is allowable,
“(D) which is constructed, reconstructed, erected, or acquired by the taxpayer,
“(E) the original use of which commences with the taxpayer, and
“(F) which is placed in service after December 31, 2017.

“(e) GREENHOUSE GAS EMISSIONS RATE.—

“(1) IN GENERAL.—For purposes of this section, the term ‘greenhouse gas emissions rate’ has the same meaning given such term under subsection (b) of section 45S.

“(2) ESTABLISHMENT OF SAFE HARBOR FOR QUALIFIED PROPERTY.—

“(A) IN GENERAL.—The Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall, by regulation, establish safe-harbor greenhouse gas emissions rates for types or categories of qualified property which are part of a qualified facility, which a taxpayer may elect to use for purposes of this section.

“(B) ROUNDING.—In establishing the safe-harbor greenhouse gas emissions rates for qualified property, the Secretary may round such rates to the nearest multiple of 37.2 grams of CO$_2$e per KWh (or, in the case of a greenhouse gas emissions rate which is less than 18.6 grams of CO$_2$e per KWh, by rounding such rate to zero).
“(f) Certain Progress Expenditure Rules Made Applicable.—Rules similar to the rules of subsection (c)(4) and (d) of section 46 (as in effect on the day before the date of the enactment of the Revenue Reconciliation Act of 1990) shall apply for purposes of subsection (a).

“(g) Credit Phase-out.—

“(1) In general.—Subject to paragraph (3), if the Secretary, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency, determines that the annual greenhouse gas emissions from electrical production in the United States are equal to or less than 72 percent of the annual greenhouse gas emissions from electrical production in the United States for calendar year 2005, the amount of the clean energy investment credit under subsection (a) for any qualified facility, qualified carbon capture and sequestration equipment, or energy storage property placed in service during a calendar year described in paragraph (2) shall be equal to the product of—

“(A) the amount of the credit determined under subsection (a) without regard to this subsection, multiplied by
“(B) the phase-out percentage under paragraph (2).

“(2) PHASE-OUT PERCENTAGE.—The phase-out percentage under this paragraph is equal to—

“(A) for a facility or property placed in service during the first calendar year following the calendar year in which the determination described in paragraph (1) is made, 75 percent,

“(B) for a facility or property placed in service during the second calendar year following such determination year, 50 percent,

“(C) for a facility or property placed in service during the third calendar year following such determination year, 25 percent, and

“(D) for a facility or property placed in service during any calendar year subsequent to the year described in subparagraph (C), 0 percent.

“(3) DEADLINE TO BEGIN PHASE-OUT.—If the Secretary, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency, determines that the annual greenhouse gas emissions from electrical production in the United States for each year before calendar year 2026 are greater than the percentage specified
in paragraph (1), then the determination described in such paragraph shall be deemed to have been made for calendar year 2025.

“(h) DEFINITIONS.—In this section:

“(1) CO$_2$e PER KWH.—The term ‘CO$_2$e per KWh’ has the same meaning given such term under section 45S(e)(1).

“(2) GREENHOUSE GAS.—The term ‘greenhouse gas’ has the same meaning given such term under section 45S(e)(2).

“(i) RECAPTURE OF CREDIT.—For purposes of section 50, if the Administrator of the Environmental Protection Agency determines that—

“(1) the greenhouse gas emissions rate for a qualified facility is significantly higher than the anticipated greenhouse gas emissions rate claimed by the taxpayer for purposes of the clean energy investment credit under this section, or

“(2) with respect to any qualified carbon capture and sequestration equipment installed in a facility, the carbon dioxide emissions from such facility cease to be captured or disposed of in a manner consistent with the requirements of subsection (c),
the facility or equipment shall cease to be investment cred-
ity property in the taxable year in which the determination
is made.

“(j) **Final Guidance.**—Not later than January 1,
2017, the Secretary, in consultation with the Adminis-
trator of the Environmental Protection Agency, shall issue
final guidance regarding implementation of this section,
including calculation of greenhouse gas emission rates for
qualified facilities and determination of clean energy in-
vestment credits under this section.”.

(2) **Conforming Amendments.**—

(A) Section 46 is amended by inserting a
comma at the end of paragraph (4), by striking
“and” at the end of paragraph (5), by striking
the period at the end of paragraph (6) and in-
serting “, and”, and by adding at the end the
following new paragraph:

“(7) the clean energy investment credit.”.

(B) Section 49(a)(1)(C) is amended by
striking “and” at the end of clause (v), by
striking the period at the end of clause (vi) and
inserting a comma, and by adding at the end
the following new clauses:
“(vii) the basis of any qualified property which is part of a qualified facility under section 48E,
“(viii) the basis of any qualified carbon capture and sequestration equipment under section 48E, and
“(ix) the basis of any energy storage property under section 48E.”.

(C) Section 50(a)(2)(E) is amended by inserting “or 48E(e)” after “section 48(b)”.

(D) The table of sections for subpart E of part IV of subchapter A of chapter 1 is amended by inserting after the item relating to section 48D the following new item:

“48E. Clean energy investment credit.”.

(3) EFFECTIVE DATE.—The amendments made by this subsection shall apply to property placed in service after December 31, 2017, 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 date of the enactment of the Revenue Reconciliation Act of 1990).

(b) INDIVIDUAL CREDIT.—

(1) IN GENERAL.—Section 25D is amended to read as follows:
“SEC. 25D. CLEAN RESIDENTIAL ENERGY CREDIT.

“(a) ALLOWANCE OF CREDIT.—

“(1) IN GENERAL.—In the case of an individual, there shall be allowed as a credit against the tax imposed by this chapter for the taxable year an amount equal to the sum of—

“(A) the clean energy percentage of the expenditures made by the taxpayer for qualified property which is—

“(i) installed in a dwelling unit which is located in the United States and used as a residence by the taxpayer, and

“(ii) placed in service during such taxable year, plus

“(B) 30 percent of the expenditures made by the taxpayer for energy storage property which is—

“(i) installed in a dwelling unit which is located in the United States and used as a residence by the taxpayer, and

“(ii) placed in service during such taxable year.

“(2) CLEAN ENERGY PERCENTAGE.—

“(A) IN GENERAL.—
“(i) Maximum percentage.—Except as provided in clause (ii), the clean energy percentage is 30 percent.

“(ii) Reduction of percentage based on greenhouse gas emissions rate.—The clean energy percentage shall be reduced (but not below zero) by an amount which bears the same ratio to 30 percent as the anticipated greenhouse gas emissions rate for the qualified property bears to 372 grams of CO$_2$e per KWh.

“(B) Rounding.—If any amount determined under subparagraph (A)(ii) is not a multiple of 1 percent, such amount shall be rounded to the nearest multiple of 1 percent.

“(C) Definitions.—For purposes of this section, the terms ‘greenhouse gas emissions rate’ and ‘CO$_2$e per KWh’ have the same meanings given such terms under subsections (b) and (e)(1) of section 45S, respectively.

“(3) Establishment of safe harbor for qualified property.—

“(A) In general.—The Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall, by regula-
tion, establish safe-harbor greenhouse gas emissions rates for types or categories of qualified property which are installed in a dwelling unit, which a taxpayer may elect to use for purposes of this section.

“(B) ROUNding.—In establishing the safe-harbor greenhouse gas emissions rates for qualified property, the Secretary may round such rates to the nearest multiple of 37.2 grams of CO$_2$e per KWh (or, in the case of a greenhouse gas emissions rate which is less than 18.6 grams of CO$_2$e per KWh, by rounding such rate to zero).

“(b) QUALIFIED PROPERTY.—The term ‘qualified property’ means property—

“(1) which is tangible personal property,

“(2) which is used for the generation of electricity,

“(3) which is constructed, reconstructed, erected, or acquired by the taxpayer,

“(4) the original use of which commences with the taxpayer, and

“(5) which is originally placed in service after December 31, 2017.
“(c) Energy Storage Property.—The term ‘energy storage property’ means property which receives, stores, and delivers electricity or energy for conversion to electricity which is consumed by the taxpayer, which may include—

“(1) batteries,
“(2) thermal energy storage systems,
“(3) fuel cells,
“(4) any other relevant technology identified by the Secretary (in consultation with the Secretary of Energy), and
“(5) any combination of the properties described in paragraphs (1) through (4).

“(d) Carryforward of Unused Credit.—If the credit allowable under subsection (a) exceeds the limitation imposed by section 26(a) for such taxable year reduced by the sum of the credits allowable under this subpart (other than this section), such excess shall be carried to the succeeding taxable year and added to the credit allowable under subsection (a) for such succeeding taxable year.

“(e) Credit Phase-out.—

“(1) In General.—Subject to paragraph (3), if the Secretary determines that the annual greenhouse gas emissions from electrical production in the
United States are equal to or less than the percentage specified in section 48E(g), the amount of the credit allowable under subsection (a) for any qualified property or energy storage property placed in service during a calendar year described in paragraph (2) shall be equal to the product of—

“(A) the amount of the credit determined under subsection (a) without regard to this subsection, multiplied by

“(B) the phase-out percentage under paragraph (2).

“(2) PHASE-OUT PERCENTAGE.—The phase-out percentage under this paragraph is equal to—

“(A) for property placed in service during the first calendar year following the calendar year in which the determination described in paragraph (1) is made, 75 percent,

“(B) for property placed in service during the second calendar year following such determination year, 50 percent,

“(C) for property placed in service during the third calendar year following such determination year, 25 percent, and
“(D) for property placed in service during any calendar year subsequent to the year described in subparagraph (C), 0 percent.

“(3) DEADLINE TO BEGIN PHASE-OUT.—If the Secretary, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency, determines that the annual greenhouse gas emissions from electrical production in the United States for each year before calendar year 2026 are greater than the percentage specified in section 48E(g), then the determination described in paragraph (1) shall be deemed to have been made for calendar year 2025.

“(f) SPECIAL RULES.—For purposes of this section:

“(1) LABOR COSTS.—Expenditures for labor costs properly allocable to the onsite preparation, assembly, or original installation of the qualified property or energy storage property and for piping or wiring to interconnect such property to the dwelling unit shall be taken into account for purposes of this section.

“(2) TENANT-STOCKHOLDER IN COOPERATIVE HOUSING CORPORATION.—In the case of an individual who is a tenant-stockholder (as defined in section 216) in a cooperative housing corporation (as
defined in such section), such individual shall be treated as having made his tenant-stockholder’s proportionate share (as defined in section 216(b)(3)) of any expenditures of such corporation.

“(3) CONDOMINIUMS.—

“(A) IN GENERAL.—In the case of an individual who is a member of a condominium management association with respect to a condominium which the individual owns, such individual shall be treated as having made the individual’s proportionate share of any expenditures of such association.

“(B) CONDOMINIUM MANAGEMENT ASSOCIATION.—For purposes of this paragraph, the term ‘condominium management association’ means an organization which meets the requirements of paragraph (1) of section 528(c) (other than subparagraph (E) thereof) with respect to a condominium project substantially all of the units of which are used as residences.

“(4) ALLOCATION IN CERTAIN CASES.—If less than 80 percent of the use of a property is for non-business purposes, only that portion of the expenditures for such property which is properly allocable to
use for nonbusiness purposes shall be taken into account.

“(g) BASIS ADJUSTMENT.—For purposes of this subtitle, if a credit is allowed under this section for any expenditures with respect to any property, the increase in the basis of such property which would (but for this subsection) result from such expenditures shall be reduced by the amount of the credit so allowed.

“(h) FINAL GUIDANCE.—Not later than January 1, 2017, the Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall issue final guidance regarding implementation of this section, including calculation of greenhouse gas emission rates for qualified property and determination of residential clean energy property credits under this section.”.

(2) CONFORMING AMENDMENTS.—

(A) Paragraph (1) of section 45(d) is amended by striking “Such term” and all that follows through the period and inserting the following: “Such term shall not include any facility with respect to which any expenditures for qualified property (as defined in subsection (b) of section 25D) which uses wind to produce electricity is taken into account in determining the credit under such section.”.
(B) Paragraph (34) of section 1016(a) is amended by striking “section 25D(f)” and inserting “section 25D(h)”.

(C) The item relating to section 25D in the table of contents for subpart A of part IV of subchapter A of chapter 1 is amended to read as follows:

“Sec. 25D. Clean residential energy credit.”.

(3) EFFECTIVE DATE.—The amendments made by this section shall apply to property placed in service after December 31, 2017.

SEC. 5013. EXTENSIONS AND MODIFICATIONS OF VARIOUS ENERGY PROVISIONS.

(a) NONBUSINESS ENERGY PROPERTY.—

(1) IN GENERAL.—Paragraph (2) of section 25C(g) is amended by striking “December 31, 2014” and inserting “December 31, 2017”.

(2) EFFECTIVE DATE.—The amendments made by this subsection shall apply to property placed in service after December 31, 2014.

(b) RESIDENTIAL ENERGY EFFICIENT PROPERTY.—

Subsection (g) of section 25D is amended by striking “December 31, 2016” and inserting “December 31, 2017”.

(e) ALTERNATIVE FUEL VEHICLE REFUELING PROPERTY CREDIT.—
(1) IN GENERAL.—Paragraph (1) of section 30C(g) is amended by striking “December 31, 2014” and inserting “December 31, 2017”.

(2) EFFECTIVE DATE.—The amendments made by this subsection shall apply to property placed in service after December 31, 2014.

(d) 2- AND 3-WHEELED PLUG-IN ELECTRIC VEHICLES.—

(1) IN GENERAL.—Subparagraph (E) of section 30D(g) is amended to read as follows:

“(E) is acquired—

“(i) after December 31, 2011, and before January 1, 2014, or

“(ii) after December 31, 2014, and before January 1, 2018.”.

(2) EFFECTIVE DATE.—The amendments made by this subsection shall apply to vehicles acquired after December 31, 2014.

(e) ELECTRICITY PRODUCED FROM CERTAIN RENEWABLE RESOURCES.—

(1) IN GENERAL.—The following provisions of section 45(d) are each amended by striking “January 1, 2015” each place it appears and inserting “January 1, 2018”:

(A) Paragraph (1).
(B) Paragraph (2)(A).

(C) Paragraph (3)(A).

(D) Paragraph (4)(B).

(E) Paragraph (6).

(F) Paragraph (7).

(G) Paragraph (9).

(H) Paragraph (11)(B).

(2) EFFECTIVE DATE.—The amendments made by this subsection shall take effect on January 1, 2015.

(f) CREDIT FOR PRODUCTION FROM ADVANCED NUCLEAR POWER FACILITIES.—Section 45J(d)(1)(B) is amended by striking “2021” and inserting “2018”.

(g) NEW ENERGY EFFICIENT HOME CREDIT.—

(1) IN GENERAL.—Subsection (g) of section 45L is amended by striking “December 31, 2014” and inserting “December 31, 2017”.

(2) EFFECTIVE DATE.—The amendments made by this subsection shall apply to any qualified new energy efficient home acquired after December 31, 2014.

(h) REPEAL OF ENERGY EFFICIENT APPLIANCE CREDIT.—
(1) IN GENERAL.—Subpart D of part IV of subchapter A of chapter 1 of subtitle A is amended by striking section 45M.

(2) CONFORMING AMENDMENTS.—

(A) Section 38(b) is amended by striking paragraph (24).

(B) The table of sections for subpart D of part IV of subchapter A of chapter 1 of subtitle A is amended by striking the item relating to section 45M.

(3) EFFECTIVE DATE.—The amendments made by this subsection shall take effect on the date of the enactment of this Act.

(i) CREDIT FOR CARBON DIOXIDE SEQUESTRATION.—Section 45Q(c) is amended—

(1) in paragraph (2), by striking “and” at the end,

(2) in paragraph (3), by striking the period at the end and inserting “, and”, and

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

“(4) which is placed in service before January 1, 2018.”.

(j) ENERGY CREDIT.—
(1) QUALIFIED INVESTMENT CREDIT FACILITY.—

(A) IN GENERAL.—Section 48(a)(5)(C)(ii) is amended by striking “January 1, 2015” and inserting “January 1, 2018”.

(B) EFFECTIVE DATE.—The amendments made by this paragraph shall take effect on January 1, 2015.

(2) SOLAR ENERGY PROPERTY.—Section 48(a) is amended—

(A) in paragraphs (2)(A)(i)(II) and (3)(A)(ii), by striking “January 1, 2017” each place it appears and inserting “January 1, 2018”, and

(B) in paragraph (3)(A)(i), by inserting “but only with respect to periods ending before January 1, 2018” after “swimming pool,”.

(3) GEOTHERMAL ENERGY PROPERTY.—Section 48(a)(3)(A)(iii) is amended by inserting “with respect to periods ending before January 1, 2018, and” after “but only”.

(4) THERMAL ENERGY PROPERTY.—Section 48(a)(3)(A)(vii) is amended by striking “January 1, 2017” and inserting “January 1, 2018”.
(5) Qualified fuel cell property.—Section 48(c)(1)(D) is amended by striking “December 31, 2016” and inserting “December 31, 2017”.

(6) Qualified microturbine property.—Section 48(c)(2)(D) is amended by striking “December 31, 2016” and inserting “December 31, 2017”.

(7) Combined heat and power system property.—Section 48(c)(3)(A)(iv) is amended by striking “January 1, 2017” and inserting “January 1, 2018”.

(8) Qualified small wind energy property.—Section 48(c)(4)(C) is amended by striking “December 31, 2016” and inserting “December 31, 2017”.

(k) Qualifying advanced energy project credit.—

(1) In general.—Section 48C is amended—

(A) by redesignating subsection (e) as subsection (f), and

(B) by inserting after subsection (d) the following new subsection:

“(e) Additional qualifying advanced energy program.—

“(1) Establishment.—
“(A) IN GENERAL.—Not later than 180 days after the date of enactment of this subsection, the Secretary, in consultation with the Secretary of Energy, shall establish an additional qualifying advanced energy project program to consider and award certifications for qualified investments eligible for credits under this section to qualifying advanced energy project sponsors.

“(B) LIMITATION.—The total amount of credits that may be allocated under the program described in subparagraph (A) shall not exceed $5,000,000,000.

“(2) CERTIFICATION.—

“(A) APPLICATION PERIOD.—Each applicant for certification under this paragraph shall submit an application containing such information as the Secretary may require during the 2-year period beginning on the date the Secretary establishes the program under paragraph (1).

“(B) TIME TO MEET CRITERIA FOR CERTIFICATION.—Each applicant for certification shall have 1 year from the date of acceptance by the Secretary of the application during which to provide to the Secretary evidence that
the requirements of the certification have been met.

“(C) Period of issuance.—An applicant which receives a certification shall have 3 years from the date of issuance of the certification in order to place the project in service and if such project is not placed in service by that time period, then the certification shall no longer be valid.

“(3) Selection criteria.—In determining which qualifying advanced energy projects to certify under this section, the Secretary shall consider the same criteria described in subsection (d)(3).

“(4) Review and redistribution.—

“(A) Review.—Not later than 4 years after the date of enactment of this subsection, the Secretary shall review the credits allocated pursuant to this subsection as of such date.

“(B) Redistribution.—The Secretary may reallocate credits awarded under this section if the Secretary determines that—

“(i) there is an insufficient quantity of qualifying applications for certification pending at the time of the review, or
“(ii) any certification made pursuant to paragraph (2) has been revoked pursuant to paragraph (2)(B) because the project subject to the certification has been delayed as a result of third party opposition or litigation to the proposed project.

“(C) REALLOCATION.—If the Secretary determines that credits under this section are available for reallocation pursuant to the requirements set forth in paragraph (2), the Secretary is authorized to conduct an additional program for applications for certification.

“(5) DISCLOSURE OF ALLOCATIONS.—The Secretary shall, upon making a certification under this subsection, publicly disclose the identity of the applicant and the amount of the credit with respect to such applicant.”.

(2) EFFECTIVE DATE.—The amendments made by this subsection shall apply to periods after the date of the enactment of this Act, 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 date of the enactment of the Revenue Reconciliation Act of 1990).
(1) ENERGY EFFICIENT COMMERCIAL BUILDINGS

DEDUCTION.—

(1) IN GENERAL.—Subsection (h) of section 179D is amended by striking “December 31, 2014” and inserting “December 31, 2017”.

(2) EFFECTIVE DATE.—The amendments made by this section shall apply to property placed in service after December 31, 2014.

Subtitle B—Clean Fuel Tax Credits

SEC. 5021. CLEAN FUEL PRODUCTION CREDIT.

(a) IN GENERAL.—Subpart D of part IV of subchapter A of chapter 1, as amended by section __01, is amended by adding at the end the following new section:

“SEC. 45T. CLEAN FUEL PRODUCTION CREDIT.

“(a) AMOUNT OF CREDIT.—

“(1) IN GENERAL.—For purposes of section 38, the clean fuel production credit for any taxable year is an amount equal to the product of—

“(A) $1.00 per energy equivalent of a gallon of gasoline with respect to any transportation fuel which is—

“(i) produced by the taxpayer at a qualified facility, and

“(ii) sold or used by the taxpayer in a manner described in paragraph (2), and
“(B) the emissions factor for such fuel (as determined under subsection (b)(2)).

“(2) Sale or use.—For purposes of paragraph (1)(A)(ii), the transportation fuel is sold or used in a manner described in this paragraph if such fuel is—

“(A) sold by the taxpayer to an unrelated person—

“(i) for use by such person in the production of a fuel mixture that will be used as a transportation fuel,

“(ii) for use by such person as a transportation fuel in a trade or business, or

“(iii) who sells such fuel at retail to another person and places such fuel in the fuel tank of such other person, or

“(B) used or sold by the taxpayer for any purpose described in subparagraph (A).

“(3) Rounding.—If any amount determined under paragraph (1) is not a multiple of 0.1 cent, such amount shall be rounded to the nearest multiple of 0.1 cent.

“(b) Emissions Factors.—

“(1) Emissions factor.—
“(A) IN GENERAL.—The emissions factor of a transportation fuel shall be an amount equal to the quotient of—

“(i) an amount (not less than zero) equal to —

“(I) 77.23, minus

“(II) the emissions rate for such fuel, divided by

“(ii) 77.23.

“(B) ESTABLISHMENT OF SAFE HARBOR EMISSIONS RATE.—The Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall establish the safe harbor emissions rate for similar types and categories of transportation fuels based on the amount of lifecycle greenhouse gas emissions (as described in section 211(o)(1)(H) of the Clean Air Act (42 U.S.C. 7545(o)(1)(H)), as in effect on the date of the enactment of this section) for such fuels, expressed as kilograms of CO₂e per mmBTU, which a taxpayer may elect to use for purposes of this section.

“(C) ROUNDING OF SAFE HARBOR EMISSIONS RATE.—The Secretary may round the safe harbor emissions rates under subparagraph
(B) to the nearest multiple of 7.723 kilograms of CO$_2$ per mmBTU, except that, in the case of an emissions rate that is less than 3.862 kilograms of CO$_2$ per mmBTU, the Secretary may round such rate to zero.

“(D) Provisional safe harbor emissions rate.—

“(i) In general.—In the case of any transportation fuel for which a safe harbor emissions rate has not been established by the Secretary, a taxpayer producing such fuel may file a petition with the Secretary for determination of the safe harbor emissions rate with respect to such fuel.

“(ii) Establishment of provisional and final safe harbor emissions rate.—In the case of a transportation fuel for which a petition described in clause (i) has been filed, the Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall—

“(I) not later than 12 months after the date on which the petition was filed, provide a provisional safe harbor emissions rate for such fuel
which a taxpayer may use for purposes of this section, and

“(II) not later than 24 months after the date on which the petition was filed, establish the safe harbor emissions rate for such fuel.

“(E) ROUN丁NG.—If any amount determined under subparagraph (A) is not a multiple of 0.1, such amount shall be rounded to the nearest multiple of 0.1.

“(2) Publishing safe harbor emissions rate.—The Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall publish a table that sets forth the safe harbor emissions rate (as established pursuant to paragraph (1)) for similar types and categories of transportation fuels.

“(c) Inflation adjustment.—

“(1) In general.—In the case of calendar years beginning after 2018, the $1.00 amount in subsection (a)(1)(A) shall be adjusted by multiplying such amount by the inflation adjustment factor for the calendar year in which the sale or use of the transportation fuel occurs. If any amount as increased under the preceding sentence is not a mul-

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tiple of 1 cent, such amount shall be rounded to the
nearest multiple of 1 cent.

“(2) INFLATION ADJUSTMENT FACTOR.—For
purposes of paragraph (1), the inflation adjustment
factor shall be the inflation adjustment factor deter-
mined and published by the Secretary pursuant to
section 45S(c), determined by substituting ‘calendar
year 2017’ for ‘calendar year 1992’ in paragraph (3)
thereof.

“(d) CREDIT PHASE-OUT.—

“(1) IN GENERAL.—Subject to paragraph (3),
if the Secretary, in consultation with the Secretary
of Energy and the Administrator of the Environ-
mental Protection Agency, determines that the
greenhouse gas emissions from transportation fuel
produced and sold at retail annually in the United
States are equal to or less than 72 percent of the
greenhouse gas emissions from transportation fuel
produced and sold at retail in the United States dur-
ing calendar year 2005, the amount of the clean fuel
production credit under this section for any qualified
facility placed in service during a calendar year de-
scribed in paragraph (2) shall be equal to the prod-
uct of—
“(A) the amount of the credit determined under subsection (a) without regard to this subsection, multiplied by

“(B) the phase-out percentage under paragraph (2).

“(2) PHASE-OUT PERCENTAGE.—The phase-out percentage under this paragraph is equal to—

“(A) for a facility placed in service during the first calendar year following the calendar year in which the determination described in paragraph (1) is made, 75 percent,

“(B) for a facility placed in service during the second calendar year following such determination year, 50 percent,

“(C) for a facility placed in service during the third calendar year following such determination year, 25 percent, and

“(D) for a facility placed in service during any calendar year subsequent to the year described in subparagraph (C), 0 percent.

“(3) DEADLINE TO BEGIN PHASE-OUT.—If the Secretary, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency, determines that the greenhouse gas emissions from transportation fuel produced and
sold at retail annually in the United States are, for each year before calendar year 2026, greater than the percentage specified in paragraph (1), then the determination described in such paragraph shall be deemed to have been made for calendar year 2025.

“(e) DEFINITIONS.—In this section:

“(1) mmBTU.—The term ‘mmBTU’ means 1,000,000 British thermal units.

“(2) CO₂e.—The term ‘CO₂e’ means, with respect to any greenhouse gas, the equivalent carbon dioxide.

“(3) GREENHOUSE GAS.—The term ‘greenhouse gas’ has the same meaning given that term under section 211(o)(1)(G) of the Clean Air Act (42 U.S.C. 7545(o)(1)(G)), as in effect on the date of the enactment of this section.

“(4) QUALIFIED FACILITY.—

“(A) IN GENERAL.—Subject to subparagraphs (B) and (C), the term ‘qualified facility’ means a facility used for the production of transportation fuels.

“(B) 10-YEAR PRODUCTION CREDIT.—For purposes of this section, a facility shall only qualify as a qualified facility—
“(i) in the case of a facility that is originally placed in service after December 31, 2017, for the 10-year period beginning on the date such facility is placed in service, or

“(ii) in the case of a facility that is originally placed in service before January 1, 2018, for the 10-year period beginning on January 1, 2018.

“(5) TRANSPORTATION FUEL.—The term ‘transportation fuel’ means a fuel which is suitable for use as a fuel in a highway vehicle or aircraft.

“(f) FINAL GUIDANCE.—Not later than January 1, 2017, the Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall issue final guidance regarding implementation of this section, including calculation of emissions factors for transportation fuel, the table described in subsection (b)(2), and the determination of clean fuel production credits under this section.

“(g) SPECIAL RULES.—

“(1) ONLY REGISTERED PRODUCTION IN THE UNITED STATES TAKEN INTO ACCOUNT.—

“(A) IN GENERAL.—No clean fuel production credit shall be determined under subsection
(a) with respect to any transportation fuel unless—

“(i) the taxpayer is registered as a producer of clean fuel under section 4101 at the time of production, and

“(ii) such fuel is produced in the United States.

“(B) UNITED STATES.—For purposes of this paragraph, the term ‘United States’ includes any possession of the United States.

“(2) PRODUCTION ATTRIBUTABLE TO THE TAX-PAYER.—In the case of a facility in which more than 1 person has an ownership interest, except to the extent provided in regulations prescribed by the Secretary, production from the facility shall be allocated among such persons in proportion to their respective ownership interests in the gross sales from such facility.

“(3) RELATED PERSONS.—Persons shall be treated as related to each other if such persons would be treated as a single employer under the regulations prescribed under section 52(b). In the case of a corporation which is a member of an affiliated group of corporations filing a consolidated return, such corporation shall be treated as selling fuel to
an unrelated person if such fuel is sold to such a
person by another member of such group.

“(4) Pass-thru in the case of estates and
trusts.—Under regulations prescribed by the Sec-
retary, rules similar to the rules of subsection (d) of
section 52 shall apply.

“(5) Allocation of credit to patrons of
agricultural cooperative.—

“(A) Election to allocate.—

“(i) In general.—In the case of an
eligible cooperative organization, any por-
tion of the credit determined under sub-
section (a) for the taxable year may, at the
election of the organization, be apportioned
among patrons of the organization on the
basis of the amount of business done by
the patrons during the taxable year.

“(ii) Form and effect of election.—An election under clause (i) for any
taxable year shall be made on a timely
filed return for such year. Such election,
once made, shall be irrevocable for such
taxable year. Such election shall not take
effect unless the organization designates
the apportionment as such in a written no-
tice mailed to its patrons during the pay-
ment period described in section 1382(d).

“(B) **TREATMENT OF ORGANIZATIONS AND PATRONS.**—The amount of the credit apportioned to any patrons under subparagraph (A)—

“(i) shall not be included in the amount determined under subsection (a) with respect to the organization for the taxable year, and

“(ii) shall be included in the amount determined under subsection (a) for the first taxable year of each patron ending on or after the last day of the payment period (as defined in section 1382(d)) for the taxable year of the organization or, if earlier, for the taxable year of each patron ending on or after the date on which the patron receives notice from the cooperative of the apportionment.

“(C) **SPECIAL RULES FOR DECREASE IN CREDITS FOR TAXABLE YEAR.**—If the amount of the credit of a cooperative organization determined under subsection (a) for a taxable year is less than the amount of such credit
shown on the return of the cooperative organi-
ization for such year, an amount equal to the
excess of—

“(i) such reduction, over

“(ii) the amount not apportioned to
such patrons under subparagraph (A) for
the taxable year,
shall be treated as an increase in tax imposed
by this chapter on the organization. Such in-
crease shall not be treated as tax imposed by
this chapter for purposes of determining the
amount of any credit under this chapter.

“(D) ELIGIBLE COOPERATIVE DEFINED.—
For purposes of this section the term ‘eligible
cooperative’ means a cooperative organization
described in section 1381(a) which is owned
more than 50 percent by agricultural producers
or by entities owned by agricultural producers.
For this purpose an entity owned by an agricul-
tural producer is one that is more than 50 per-
cent owned by agricultural producers.”.

(b) CONFORMING AMENDMENTS.—
(1) Section 38(b), as amended by section _01,
is amended—
(A) in paragraph (36), by striking “plus” at the end,

(B) in paragraph (37), by striking the period at the end and inserting “, plus”, and

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

“(38) the clean fuel production credit determined under section 45T(a).”.

(2) The table of sections for subpart D of part IV of subchapter A of chapter 1, as amended by section __01, is amended by adding at the end the following new item:

“Sec. 45T. Clean fuel production credit.”.

(3) Section 4101(a)(1) is amended by inserting “every person producing a fuel eligible for the clean fuel production credit (pursuant to section 45T),” after “section 6426(b)(4)(A),”.

(c) EFFECTIVE DATE.—The amendments made by this section shall apply to transportation fuel produced after December 31, 2017.

SEC. 5022. TEMPORARY EXTENSION OF EXISTING FUEL INCENTIVES.

(a) SECOND GENERATION BIOFUEL PRODUCER CREDIT.—

(1) IN GENERAL.—Section 40(b)(6) is amended—
(A) in subparagraph (E)(i)—

(i) in subclause (I), by striking “and” at the end,

(ii) in subclause (II), by striking the period at the end and inserting “, and”, and

(iii) by inserting at the end the following new subclause:

“(III) qualifies as a transportation fuel (as defined in section 45T(e)(5))”, and

(B) in subparagraph (J)(i), by striking “2015” and inserting “2018”.

(2) EFFECTIVE DATE.—The amendments made by this subsection shall apply to qualified second generation biofuel production after December 31, 2014.

(b) BIODIESEL AND RENEWABLE DIESEL USED AS FUEL.—

(1) IN GENERAL.—Section 40A is amended—

(A) in subsection (f)(3)(B), by striking “or D396”, and

(B) in subsection (g), by striking “2014” and inserting “2017”.

...
(2) **Effective date.**—The amendments made by this subsection shall apply to fuel sold or used after December 31, 2014.

(c) **Credit for Biodiesel and Alternative Fuel Mixtures.**—

(1) **In general.**—Section 6426 is amended—

(A) in subsection (c)(6), by striking “2014” and inserting “2017”,

(B) in subsection (d)—

(i) in paragraph (1), by striking “motor vehicle” and inserting “highway vehicle”,

(ii) in paragraph (2)(D), by striking “liquefied”, and

(iii) in paragraph (5), by striking “2014” and inserting “2017”, and

(C) in subsection (e), by amending paragraph (3) to read as follows:

“(3) **Termination.**—This subsection shall not apply to any sale or use for any period after—

“(A) in the case of any alternative fuel mixture sold or used by the taxpayer for the purposes described in subsection (d)(1), December 31, 2017,
“(B) in the case of any sale or use involving hydrogen that is not for the purposes described in subsection (d)(1), December 31, 2017, and

“(C) in the case of any sale or use not described in subparagraph (A) or (B), December 31, 2014.”.

(2) EFFECTIVE DATE.—The amendments made by this subsection shall apply to fuel sold or used after December 31, 2014.

(d) BIODIESEL, BIODIESEL MIXTURES, AND ALTERNATIVE FUELS.—

(1) IN GENERAL.—Section 6427(e)(6) is amended—

(A) in subparagraph (B), by striking “2014” and inserting “2017”, and

(B) in subparagraph (C), by striking “2014” and inserting “2017”.

(2) EFFECTIVE DATE.—The amendments made by this subsection shall apply to fuel sold or used after December 31, 2014.

(e) SPECIAL RULE FOR CERTAIN PERIODS DURING 2015.—Notwithstanding any other provision of law, in the case of—
(1) any biodiesel mixture credit properly determined under section 6426(e) of the Internal Revenue Code of 1986 for periods after December 31, 2014, and on or before the last day of the first calendar quarter ending after the date of the enactment of this Act, and

(2) any alternative fuel credit properly determined under section 6426(d) of such Code for such periods,
such credit shall be allowed, and any refund or payment attributable to such credit (including any payment under section 6427(e) of such Code) shall be made, only in such manner as the Secretary of the Treasury (or the Secretary’s delegate) shall provide. Such Secretary shall issue guidance within 30 days after the date of the enactment of this Act providing for a one-time submission of claims covering periods described in the preceding sentence. Such guidance shall provide for a 180-day period for the submission of such claims (in such manner as prescribed by such Secretary) to begin not later than 30 days after such guidance is issued. Such claims shall be paid by such Secretary not later than 60 days after receipt. If such Secretary has not paid pursuant to a claim filed under this subsection within 60 days after the date of the filing of such claim, the claim shall be paid with interest from such
date determined by using the overpayment rate and method under section 6621 of such Code.

Subtitle C—Energy Efficiency Incentives

SEC. 5031. CREDIT FOR NEW ENERGY EFFICIENT RESIDENTIAL BUILDINGS.

(a) In General.—Section 45L is amended to read as follows:

“SEC. 45L. NEW ENERGY EFFICIENT HOME CREDIT.

“(a) Allowance of Credit.—For purposes of section 38, in the case of an eligible contractor, the new energy efficient home credit for the taxable year is the applicable amount for each qualified residence which is—

“(1) constructed by the eligible contractor, and

“(2) acquired by a person from such eligible contractor for use as a residence during the taxable year.

“(b) Applicable Amount.—

“(1) In general.—For purposes of subsection (a), the applicable amount shall be an amount equal to $1,500 increased (but not above $3,000) by $100 for every 5 percentage points by which the efficiency ratio for the qualified residence is certified to be greater than 25 percent.
“(2) Efficiency Ratio.—For purposes of this section, the efficiency ratio of a qualified residence shall be equal to the quotient, expressed as a percentage, obtained by dividing—

“(A) an amount equal to the difference between—

“(i) the annual level of energy consumption of the qualified residence, and

“(ii) the annual level of energy consumption of the baseline residence, by

“(B) the annual level of energy consumption of the baseline residence.

“(3) Baseline Residence.—For purposes of this section, the baseline residence shall be a residence which is—

“(A) comparable to the qualified residence,

and

“(B) constructed in accordance with the standards of the 2015 International Energy Conservation Code, as such Code (including supplements) is in effect on the date of the enactment of the American Energy Innovation Act.

“(c) Definitions.—For purposes of this section:
“(1) ELIGIBLE CONTRACTOR.—The term ‘eligible contractor’ means—

“(A) the person who constructed the qualified residence, or

“(B) in the case of a qualified residence which is a manufactured home, the manufactured home producer of such residence.

“(2) QUALIFIED RESIDENCE.—The term ‘qualified residence’ means a dwelling unit—

“(A) located in the United States,

“(B) the construction of which is substantially completed after the date of the enactment of this section, and

“(C) which is certified to have an annual level of energy consumption that is less than the baseline residence and an efficiency ratio of not less than 25 percent.

“(3) CONSTRUCTION.—The term ‘construction’ does not include substantial reconstruction or rehabilitation.

“(d) CERTIFICATION.—

“(1) IN GENERAL.—A certification described in this section shall be made—

“(A) in accordance with guidance prescribed by, and
“(B) by a third-party that is accredited by a certification program approved by, the Secretary, in consultation with the Secretary of Energy. Such guidance shall specify procedures and methods for calculating annual energy consumption levels, and shall include requirements to ensure the safe operation of energy efficiency improvements and that all improvements are installed according to the applicable standards of such certification program.

“(2) COMPUTER SOFTWARE.—

“(A) IN GENERAL.—Any calculation under paragraph (1) shall be prepared by qualified computer software.

“(B) QUALIFIED COMPUTER SOFTWARE.—

For purposes of this paragraph, the term ‘qualified computer software’ means software—

“(i) for which the software designer has certified that the software meets all procedures and detailed methods for calculating energy consumption levels as required by the Secretary, and

“(ii) which provides such forms as required to be filed by the Secretary in connection with energy consumption levels and the credit allowed under this section.
“(e) Basis Adjustment.—For purposes of this subtitle, if a credit is allowed under this section in connection with any expenditure for any property (other than a qualified low-income building, as described in section 42(c)(2)), the increase in the basis of such property which would (but for this subsection) result from such expenditure shall be reduced by the amount of the credit so determined.

“(f) Coordination With Investment Credits.—For purposes of this section, expenditures taken into account under section 25D or 47 shall not be taken into account under this section.”.

(b) Effective Date.—The amendment made by this section shall apply to any qualified residence acquired after December 31, 2017.

SEC. 5032. ENERGY EFFICIENCY CREDIT FOR EXISTING RESIDENTIAL BUILDINGS.

(a) In General.—Section 25C is amended to read as follows:

“SEC. 25C. CREDIT FOR ENERGY EFFICIENCY IMPROVEMENTS TO RESIDENTIAL BUILDINGS.

“(a) Allowance of Credit.—In the case of an individual, there shall be allowed as a credit against the tax imposed by this chapter for the taxable year an amount equal to the lesser of—
“(1) the applicable amount for the qualified residence based on energy efficiency improvements made by the taxpayer and placed in service during such taxable year, or

“(2) 30 percent of the amount paid or incurred by the taxpayer for energy efficiency improvements made to the qualified residence that were placed in service during such taxable year.

“(b) APPLICABLE AMOUNT.—

“(1) IN GENERAL.—For purposes of subsection (a)(1), the applicable amount shall be an amount equal to $1,750 increased (but not above $6,500) by $300 for every 5 percentage points by which the efficiency ratio for the qualified residence is certified to be greater than 20 percent.

“(2) EFFICIENCY RATIO.—For purposes of this section, the efficiency ratio of a qualified residence shall be equal to the quotient, expressed as a percentage, obtained by dividing—

“(A) an amount equal to the difference between—

“(i) the projected annual level of energy consumption of the qualified residence after the energy efficiency improvements have been placed in service, and
“(ii) the annual level of energy consumption of such qualified residence prior to the energy efficiency improvements being placed in service, by

“(B) the annual level of energy consumption described in subparagraph (A)(ii).

“(3) COORDINATION WITH CREDIT FOR RESIDENTIAL ENERGY EFFICIENT PROPERTY.—For purposes of paragraph (2)(A), the determination of the difference in annual levels of energy consumption of the qualified residence shall not include any reduction in net energy consumption related to qualified property or energy storage property for which a credit was allowed under section 25D.

“(c) DEFINITIONS.—For purposes of this section:

“(1) QUALIFIED RESIDENCE.—The term ‘qualified residence’ means a dwelling unit—

“(A) located in the United States,

“(B) owned and used by the taxpayer as the taxpayer’s principal residence (within the meaning of section 121), and

“(C) which is certified to have—

“(i) a projected annual level of energy consumption after the energy efficiency improvements have been placed in service
that is less than the annual level of energy consumption prior to the energy efficiency improvements being placed in service, and

“(ii) an efficiency ratio of not less than 20 percent.

“(2) ENERGY EFFICIENCY IMPROVEMENTS.—

“(A) IN GENERAL.—The term ‘energy efficiency improvements’ means any property installed on or in a dwelling unit which has been certified to reduce the level of energy consumption for such unit or to provide for onsite generation of electricity or useful thermal energy, provided that—

“(i) the original use of such property commences with the taxpayer, and

“(ii) such property reasonably can be expected to remain in use for at least 5 years.

“(B) AMOUNTS PAID OR INCURRED FOR ENERGY EFFICIENCY IMPROVEMENTS.—For purposes of subsection (a)(2), the amount paid or incurred by the taxpayer—

“(i) shall include expenditures for design and for labor costs properly allocable
to the onsite preparation, assembly, or
original installation of the property, and

“(ii) shall not include any expendi-
tures related to expansion of the building
envelope.

“(d) SPECIAL RULES.—For purposes of this section:

“(1) T ENANT-STOCKHOLDER IN COOPERATIVE
HOUSING CORPORATION.—In the case of an indi-
vidual who is a tenant-stockholder (as defined in sec-
tion 216) in a cooperative housing corporation (as
defined in such section), such individual shall be
treated as having made his tenant-stockholder’s pro-
portionate share (as defined in section 216(b)(3)) of
any expenditures for energy efficiency improvements
of such corporation.

“(2) CONDOMINIUMS.—

“(A) IN GENERAL.—In the case of an indi-
vidual who is a member of a condominium man-
agement association with respect to a condo-
minium which the individual owns, such indi-
vidual shall be treated as having made the indi-
vidual’s proportionate share of any expenditures
for energy efficiency improvements of such as-
sociation.
“(B) CONDOMINIUM MANAGEMENT ASSOCIATION.—For purposes of this paragraph, the term ‘condominium management association’ means an organization which meets the requirements of paragraph (1) of section 528(c) (other than subparagraph (E) thereof) with respect to a condominium project substantially all of the units of which are used as residences.

“(3) ALLOCATION IN CERTAIN CASES.—If less than 80 percent of the use of a property is for non-business purposes, only that portion of the expenditures for energy efficiency improvements for such property which is properly allocable to use for non-business purposes shall be taken into account.

“(e) CERTIFICATION.—

“(1) IN GENERAL.—A certification described in this section shall be made—

“(A) in accordance with guidance prescribed by, and

“(B) by a third-party that is accredited by a certification program approved by, the Secretary, in consultation with the Secretary of Energy. Such guidance shall specify procedures and methods for calculating annual energy consumption levels, with such calculations to take into account
onsite generation of electricity or useful thermal energy, and shall include requirements to ensure the safe operation of energy efficiency improvements and that all improvements are installed according to the applicable standards of such certification program.

“(2) COMPUTER SOFTWARE.—

“(A) IN GENERAL.—Any calculation under paragraph (1) shall be prepared by qualified computer software.

“(B) QUALIFIED COMPUTER SOFTWARE.—

For purposes of this paragraph, the term ‘qualified computer software’ has the same meaning given such term under section 45L(d)(2).

“(f) BASIS ADJUSTMENT.—For purposes of this subtitle, if a credit is allowed under this section for any expenditures with respect to any energy efficiency improvements, the increase in the basis of such property which would (but for this subsection) result from such expenditures shall be reduced by the amount of the credit so allowed.

“(g) COORDINATION WITH INVESTMENT CREDITS.—

For purposes of this section, expenditures taken into account under section 25D or 47 shall not be taken into account under this section.”.
(b) Conforming Amendment.—The table of sections for subpart A of part IV of subchapter A of chapter 1 is amended by striking the item relating to section 25C and inserting after the item relating to section 25B the following item:

“Sec. 25C. Credit for energy efficiency improvements to residential buildings.”.

(c) Effective Date.—The amendments made by this section shall apply to any energy efficiency improvements placed in service after December 31, 2017.

SEC. 5033. DEDUCTION FOR NEW ENERGY EFFICIENT COMMERCIAL BUILDINGS.

(a) In General.—Section 179D is amended to read as follows:

“SEC. 179D. ENERGY EFFICIENT COMMERCIAL BUILDING DEDUCTION.

“(a) In General.—There shall be allowed as a deduction an amount equal to the applicable amount for each qualified building placed in service by the taxpayer during the taxable year.

“(b) Applicable Amount.—

“(1) In General.—For purposes of subsection (a), the applicable amount shall be an amount equal to the product of—

“(A) the applicable dollar value, and

“(B) the square footage of the qualified building.
“(2) APPLICABLE DOLLAR VALUE.—For purposes of paragraph (1)(A), the applicable dollar value shall be an amount equal to $1.00 increased (but not above $4.75) by $0.25 for every 5 percentage points by which the efficiency ratio for the qualified building is certified to be greater than 25 percent.

“(3) EFFICIENCY RATIO.—For purposes of this section, the efficiency ratio of a qualified building shall be equal to the quotient, expressed as a percentage, obtained by dividing—

“(A) an amount equal to the difference between—

“(i) the annual level of energy consumption of the qualified building, and

“(ii) the annual level of energy consumption of the baseline building, by

“(B) the annual level of energy consumption of the baseline building.

“(4) BASELINE BUILDING.—For purposes of this section, the baseline building shall be a building which—

“(A) is comparable to the qualified building, and
“(B) meets the minimum requirements of Standard 90.1-2013 of the American Society of Heating, Refrigerating, and Air Conditioning Engineers and the Illuminating Engineering Society of North America (as in effect on December 31, 2014).

“(c) QUALIFIED BUILDING.—The term ‘qualified building’ means a building—

“(1) located in the United States,

“(2) which is owned by the taxpayer, and

“(3) which is certified to have an annual level of energy consumption that is less than the baseline building and an efficiency ratio of not less than 25 percent.

“(d) ALLOCATION OF DEDUCTION.—

“(1) IN GENERAL.—In the case of a qualified building owned by an eligible entity, the Secretary shall promulgate regulations to allow the allocation of the deduction to the person primarily responsible for designing the property in lieu of the owner of such property, with such person to be treated as the taxpayer for purposes of this section.

“(2) ELIGIBLE ENTITY.—For purposes of this subsection, the term ‘eligible entity’ means—
“(A) a Federal, State, or local government or a political subdivision thereof,

“(B) an Indian tribe (as defined in section 45A(c)(6)), or

“(C) an organization described in section 501(c) and exempt from tax under section 501(a).

“(e) BASIS ADJUSTMENT.—For purposes of this subtitle, if a deduction is allowed under this section with respect to any qualified building, the basis of such property shall be reduced by the amount of the deduction so allowed.

“(f) CERTIFICATION.—

“(1) IN GENERAL.—A certification described in this section shall be made—

“(A) in accordance with guidance prescribed by, and

“(B) by a third-party that is accredited by a certification program approved by,

the Secretary, in consultation with the Secretary of Energy. Such guidance shall specify procedures and methods for calculating annual energy consumption levels, and shall include requirements to ensure the safe operation of energy efficiency improvements and
that all improvements are installed according to the applicable standards of such certification program.

“(2) COMPUTER SOFTWARE.—

“(A) IN GENERAL.—Any calculation under paragraph (1) shall be prepared by qualified computer software.

“(B) QUALIFIED COMPUTER SOFTWARE.—

For purposes of this paragraph, the term ‘qualified computer software’ means software—

“(i) for which the software designer has certified that the software meets all procedures and detailed methods for calculating energy consumption levels as required by the Secretary, and

“(ii) which provides such forms as required to be filed by the Secretary in connection with energy consumption levels and the deduction allowed under this section.”.

(b) CONFORMING AMENDMENT.—The table of sections for part VI of subchapter B of chapter 1 is amended by striking the item relating to section 179D and inserting after the item relating to section 179C the following item:

“Sec. 179D. Energy efficient commercial building deduction.”.

(c) EFFECTIVE DATE.—The amendments made by this section shall apply to any qualified building placed in service after December 31, 2017.
SEC. 5034. ENERGY EFFICIENCY DEDUCTION FOR EXISTING COMMERCIAL BUILDINGS.

(a) In General.—Part VI of subchapter B of chapter 1 is amended by inserting after section 179E the following new section:

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"SEC. 179F. DEDUCTION FOR ENERGY EFFICIENCY IMPROVEMENTS TO COMMERCIAL BUILDINGS.

"(a) In General.—There shall be allowed as a deduction an amount equal to the lesser of—

"(1) the applicable amount for the qualified building based on energy efficiency improvements made by the taxpayer and placed in service during the taxable year, or

"(2) 30 percent of the amount paid or incurred by the taxpayer for energy efficiency improvements made to the qualified building which were placed in service during the taxable year.

"(b) Applicable Amount.—

"(1) In General.—For purposes of subsection (a), the applicable amount shall be an amount equal to the product of—

"(A) the applicable dollar value, and

"(B) the square footage of the qualified building.

"(2) Applicable Dollar Value.—For purposes of paragraph (1), the applicable dollar value

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shall be an amount equal to $1.25 increased (but
not above $9.25) by $0.50 for every 5 percentage
points by which the efficiency ratio for the qualified
building is certified to be greater than 20 percent.

“(3) Efficiency ratio.—For purposes of this
section, the efficiency ratio of a qualified building
shall be equal to the quotient, expressed as a per-
centage, obtained by dividing—

“(A) an amount equal to the difference be-
tween—

“(i) the projected annual level of en-
ergy consumption of the qualified building
after the energy efficiency improvements
have been placed in service, and

“(ii) the annual level of energy con-
sumption of such qualified building prior
to the energy efficiency improvements
being placed in service, by

“(B) the annual level of energy consump-
tion described in subparagraph (A)(ii).

“(4) Coordination with clean energy in-
vestment credit.—For purposes of paragraph
(3)(A), the determination of the difference in annual
levels of energy consumption of the qualified build-
ing shall not include any reduction in net energy
consumption related to qualified property or energy storage property for which a credit was allowed under section 48E.

“(c) DEFINITIONS.—

“(1) QUALIFIED BUILDING.—The term ‘qualified building’ means a building—

“(A) located in the United States,

“(B) which is owned by the taxpayer, and

“(C) which is certified to have—

“(i) a projected annual level of energy consumption after the energy efficiency improvements have been placed in service that is less than the annual level of energy consumption prior to the energy efficiency improvements being placed in service, and

“(ii) an efficiency ratio of not less than 20 percent.

“(2) ENERGY EFFICIENCY IMPROVEMENTS.—

“(A) IN GENERAL.—The term ‘energy efficiency improvements’ means any property installed on or in a qualified building which has been certified to reduce the level of energy consumption for such building or to increase onsite generation of electricity, provided that deprecia-
tion (or amortization in lieu of depreciation) is allowable with respect to such property.

“(B) Amounts paid or incurred for energy efficiency improvements.—For purposes of subsection (a)(2), the amount paid or incurred by the taxpayer—

“(i) shall include expenditures for design and for labor costs properly allocable to the onsite preparation, assembly, or original installation of the property, and

“(ii) shall not include any expenditures related to expansion of the building envelope.

“(d) Certification.—

“(1) In general.—A certification described in this section shall be made—

“(A) in accordance with guidance prescribed by, and

“(B) by a third-party that is accredited by a certification program approved by,

the Secretary, in consultation with the Secretary of Energy. Such guidance shall specify procedures and methods for calculating annual energy consumption levels, with such calculations to take into account onsite generation of electricity or useful thermal en-
ergy, and shall include requirements to ensure the 
safe operation of energy efficiency improvements and 
that all improvements are installed according to the 
applicable standards of such certification program.

“(2) COMPUTER SOFTWARE.—

“(A) IN GENERAL.—Any calculation under 
paragraph (1) shall be prepared by qualified 
computer software.

“(B) QUALIFIED COMPUTER SOFTWARE.—
For purposes of this paragraph, the term 
‘qualified computer software’ has the same 
meaning given such term under section 
179D(f)(2).

“(e) ALLOCATION OF DEDUCTION.—

“(1) IN GENERAL.—In the case of a qualified 
building owned by an eligible entity, the Secretary 
shall promulgate regulations to allow the allocation 
of the deduction to the person primarily responsible 
for designing the energy efficiency improvements in 
lieu of the owner of such property, with such person 
to be treated as the taxpayer for purposes of this 
section.

“(2) ELIGIBLE ENTITY.—For purposes of this 
subsection, the term ‘eligible entity’ has the same 
meaning given such term under section 179D(d)(2).
“(f) Basis Reduction.—For purposes of this subtitle, if a deduction is allowed under this section with respect to any energy efficiency improvements, the basis of such property shall be reduced by the amount of the deduction so allowed.

“(g) Coordination With Other Credits.—For purposes of this section, expenditures taken into account under section 47 or 48E shall not be taken into account under this section.”.

(b) Conforming Amendment.—

(1) Section 263(a) is amended—

(A) in subparagraph (K), by striking “or” at the end,

(B) in subparagraph (L), by striking the period and inserting “, or”, and

(C) by inserting at the end the following new subparagraph:

“(M) expenditures for which a deduction is allowed under section 179F.”.

(2) Section 312(k)(3)(B) is amended—

(A) in the heading, by striking “OR 179E” and inserting “179E, OR 179F”, and

(B) by striking “or 179E” and inserting “179E, or 179F”.

(3) Section 1016(a) is amended—
(A) in paragraph (36), by striking “and” at the end,
(B) in paragraph (37), by striking the period at the end and inserting “, and”, and
(C) by inserting at the end the following new paragraph:
“(38) to the extent provided in section 179D(f).”.

(4) Section 1245(a) is amended—
(A) in paragraph (2)(C), by inserting “179F,” after “179E,”, and
(B) in paragraph (3)(C), by inserting “179F,” after “179E,”.

(5) The table of sections for part VI of subchapter B of chapter 1 is amended by inserting after the item relating to section 179E the following new item:
“Sec. 179F. Deduction for energy efficiency improvements to commercial buildings.”.

(e) EFFECTIVE DATE.—The amendments made by this section shall apply to any energy efficiency improvements placed in service after December 31, 2017.
Subtitle D—Clean Electricity and Fuel Bonds

SEC. 5041. CLEAN ENERGY BONDS.

(a) IN GENERAL.—Subpart J of part IV of subchapter A of chapter 1 is amended by adding at the end the following new section:

"SEC. 54BB. CLEAN ENERGY BONDS.

“(a) IN GENERAL.—If a taxpayer holds a clean energy bond on one or more interest payment dates of the bond during any taxable year, there shall be allowed as a credit against the tax imposed by this chapter for the taxable year an amount equal to the sum of the credits determined under subsection (b) with respect to such dates.

“(b) AMOUNT OF CREDIT.—The amount of the credit determined under this subsection with respect to any interest payment date for a clean energy bond is 28 percent of the amount of interest payable by the issuer with respect to such date.

“(c) LIMITATION BASED ON AMOUNT OF TAX.—

“(1) IN GENERAL.—The credit allowed under subsection (a) for any taxable year shall not exceed the excess of—
“(A) the sum of the regular tax liability (as defined in section 26(b)) plus the tax imposed by section 55, over

“(B) the sum of the credits allowable under this part (other than subpart C and this subpart).

“(2) Carryover of Unused Credit.—If the credit allowable under subsection (a) exceeds the limitation imposed by paragraph (1) for such taxable year, such excess shall be carried to the succeeding taxable year and added to the credit allowable under subsection (a) for such taxable year (determined before the application of paragraph (1) for such succeeding taxable year).

“(d) Clean Energy Bond.—

“(1) In General.—For purposes of this section, the term ‘clean energy bond’ means any bond issued as part of an issue if—

“(A) 100 percent of the excess of the available project proceeds (as defined in section 54A(e)(4)) of such issue over the amounts in a reasonably required reserve (within the meaning of section 150(a)(3)) with respect to such issue are to be used for capital expenditures incurred
by an entity described in subparagraph (B) for 1 or more qualified facilities,

“(B) the bond is issued by—

“(i) a governmental body (as defined in paragraph (3) of section 54C(d)),

“(ii) a public power provider (as defined in paragraph (2) of such section), or

“(iii) a cooperative electric company (as defined in paragraph (4) of such section), and

“(C) the issuer makes an irrevocable election to have this section apply.

“(2) APPLICABLE RULES.—For purposes of applying paragraph (1)—

“(A) for purposes of section 149(b), a clean energy bond shall not be treated as federally guaranteed by reason of the credit allowed under subsection (a) or section 6433,

“(B) for purposes of section 148, the yield on a clean energy bond shall be determined without regard to the credit allowed under subsection (a), and

“(C) a bond shall not be treated as a clean energy bond if the issue price has more than a de minimis amount (determined under rules
similar to the rules of section 1273(a)(3)) of
premium over the stated principal amount of
the bond.

“(3) QUALIFIED FACILITY.—The term ‘quali-
               fied facility’ means a facility—

“(A) which is described in subsection
(e)(3) of section 45S and has a greenhouse gas
emissions rate of less than 186 grams of CO₂e
per KWh (as such terms are defined in sub-
sections (b)(1) and (e)(1) of such section), or

“(B) which is described in subsection
(e)(4) of section 45T and only produces trans-
portation fuel which has an emissions rate of
less than 38.62 kilograms of CO₂e per mmBTU
(as such terms are defined in subsections (b)
and (e) of such section).

“(e) INTEREST PAYMENT DATE.—For purposes of
this section, the term ‘interest payment date’ means any
date on which the holder of record of the clean energy
bond is entitled to a payment of interest under such bond.

“(f) CREDIT PHASE OUT.—

“(1) ELECTRICAL PRODUCTION.—

“(A) IN GENERAL.—Subject to subpara-
graph (B), in the case of a clean energy bond
for which the proceeds are used for capital ex-
penditures incurred by an entity for a qualified facility described in subsection (d)(3)(A), if the Secretary, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency, determines that the annual greenhouse gas emissions from electrical production in the United States are equal to or less than the percentage specified in section 45S(d)(1), the amount of the credit determined under subsection (b) with respect to any clean energy bond issued during a calendar year described in paragraph (3) shall be equal to the product of—

“(i) the amount determined under subsection (b) without regard to this subsection, multiplied by

“(ii) the phase-out percentage under paragraph (3).

“(B) DEADLINE TO BEGIN PHASE-OUT.—If the Secretary, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency, determines that the annual greenhouse gas emissions from electrical production in the United States for each year before calendar year 2026 are greater
than the percentage specified in section 45S(d)(1), then the determination described in subparagraph (A) shall be deemed to have been made for calendar year 2025.

“(2) FUEL PRODUCTION.—

“(A) IN GENERAL.—Subject to subparagraph (B), in the case of a clean energy bond for which the proceeds are used for capital expenditures incurred by an entity for a qualified facility described in subsection (d)(3)(B), if the Secretary, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency, determines that the annual greenhouse gas emissions from transportation fuel produced and sold at retail annually in the United States are equal to or less than the percentage specified in section 45T(d)(1), the amount of the credit determined under subsection (b) with respect to any clean energy bond issued during a calendar year described in paragraph (3) shall be equal to the product of—

“(i) the amount determined under subsection (b) without regard to this subsection, multiplied by
“(ii) the phase-out percentage under paragraph (3).

“(B) DEADLINE TO BEGIN PHASE-OUT.—If the Secretary, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency, determines that the annual greenhouse gas emissions from transportation fuel produced and sold at retail annually in the United States for each year before calendar year 2026 are greater than the percentage specified in section 45T(d)(1), then the determination described in subparagraph (A) shall be deemed to have been made for calendar year 2025.

“(3) PHASE-OUT PERCENTAGE.—The phase-out percentage under this paragraph is equal to—

“(A) for any bond issued during the first calendar year following the calendar year in which the determination described in paragraph (1)(A) or (2)(A) is made, 75 percent,

“(B) for any bond issued during the second calendar year following such determination year, 50 percent,
“(C) for any bond issued during the third calendar year following such determination year, 25 percent, and

“(D) for any bond issued during any calendar year subsequent to the year described in subparagraph (C), 0 percent.

“(g) Special Rules.—

“(1) Interest on clean energy bonds includible in gross income for Federal income tax purposes.—For purposes of this title, interest on any clean energy bond shall be includible in gross income.

“(2) Application of certain rules.—Rules similar to the rules of subsections (f), (g), (h), and (i) of section 54A shall apply for purposes of the credit allowed under subsection (a).

“(h) Regulations.—The Secretary may prescribe such regulations and other guidance as may be necessary or appropriate to carry out this section and section 6433.”.

(b) Credit for Qualified Clean Energy Bonds Allowed to Issuer.—Subchapter B of chapter 65 of subtitle F is amended by adding at the end the following new section:
SEC. 6433. CREDIT FOR QUALIFIED CLEAN ENERGY BONDS ALLOWED TO ISSUER.

(a) In General.—The issuer of a qualified clean energy bond shall be allowed a credit with respect to each interest payment under such bond which shall be payable by the Secretary as provided in subsection (b).

(b) Payment of Credit.—

(1) In General.—The Secretary shall pay (contemporaneously with each interest payment date under such bond) to the issuer of such bond (or to any person who makes such interest payments on behalf of the issuer) 28 percent of the interest payable under such bond on such date.

(2) Interest Payment Date.—For purposes of this subsection, the term ‘interest payment date’ means each date on which interest is payable by the issuer under the terms of the bond.

(c) Application of Arbitrage Rules.—For purposes of section 148, the yield on a qualified clean energy bond shall be reduced by the credit allowed under this section.

(d) Qualified Clean Energy Bond.—For purposes of this section, the term ‘qualified clean energy bond’ means a clean energy bond (as defined in section 54BB(d)) issued as part of an issue if the issuer, in lieu of any credit allowed under section 54BB(a) with respect
to such bond, makes an irrevocable election to have this section apply.”.

(c) CONFORMING AMENDMENTS.—

(1) The table of sections for subpart J of part IV of subchapter A of chapter 1 is amended by adding at the end the following new item:

“Sec. 54BB. Clean energy bonds.”.

(2) The heading of such subpart (and the item relating to such subpart in the table of subparts for part IV of subchapter A of chapter 1) are each amended by striking “Build America Bonds” and inserting “Build America Bonds and Clean Energy Bonds”.

(3) The table of sections for subchapter B of chapter 65 of subtitle F is amended by adding at the end the following new item:

“Sec. 6433. Credit for qualified clean energy bonds allowed to issuer.”.

(4) Subparagraph (A) of section 6211(b)(4) is amended by striking “and 6431” and inserting “6431, and 6433”.

(d) EFFECTIVE DATE.—The amendments made by this section shall apply to obligations issued after the date of the enactment of this Act.
Subtitle E—Treatment of Tar Sands Under Excise Taxes

SEC. 5051. CLARIFICATION OF TAR SANDS AS CRUDE OIL FOR EXCISE TAX PURPOSES.

(a) In General.—Paragraph (1) of section 4612(a) is amended to read as follows:

“(1) CRUDE OIL.—The term ‘crude oil’ includes crude oil condensates, natural gasoline, synthetic petroleum, any bitumen or bituminous mixture, any oil derived from a bitumen or bituminous mixture, and any oil derived from kerogen-bearing sources.”.

(b) Technical Amendment.—Paragraph (2) of section 4612(a) is amended by striking “from a well located”.

(e) Effective Date.—The amendments made by this section shall apply to oil and petroleum products received, entered, used, or exported during calendar quarters beginning more than 60 days after the date of the enactment of this Act.
Subtitle F—Closing Big Oil Tax Loopholes

SEC. 5061. MODIFICATIONS OF FOREIGN TAX CREDIT RULES APPLICABLE TO MAJOR INTEGRATED OIL COMPANIES WHICH ARE DUAL CAPACITY TAXPAYERS.

(a) In General.—Section 901 is amended by redesignating subsection (n) as subsection (o) and by inserting after subsection (m) the following new subsection:

“(n) Special Rules Relating to Major Integrated Oil Companies Which Are Dual Capacity Taxpayers.—

“(1) General rule.—Notwithstanding any other provision of this chapter, any amount paid or accrued by a dual capacity taxpayer which is a major integrated oil company (within the meaning of section 167(h)(5)) to a foreign country or possession of the United States for any period shall not be considered a tax—

“(A) if, for such period, the foreign country or possession does not impose a generally applicable income tax, or

“(B) to the extent such amount exceeds the amount (determined in accordance with regulations) which—
“(i) is paid by such dual capacity taxpayer pursuant to the generally applicable income tax imposed by the country or possession, or

“(ii) would be paid if the generally applicable income tax imposed by the country or possession were applicable to such dual capacity taxpayer.

Nothing in this paragraph shall be construed to imply the proper treatment of any such amount not in excess of the amount determined under subparagraph (B).

“(2) Dual Capacity Taxpayer.—For purposes of this subsection, the term ‘dual capacity taxpayer’ means, with respect to any foreign country or possession of the United States, a person who—

“(A) is subject to a levy of such country or possession, and

“(B) receives (or will receive) directly or indirectly a specific economic benefit (as determined in accordance with regulations) from such country or possession.

“(3) Generally Applicable Income Tax.—For purposes of this subsection—
“(A) IN GENERAL.—The term ‘generally applicable income tax’ means an income tax (or a series of income taxes) which is generally imposed under the laws of a foreign country or possession on income derived from the conduct of a trade or business within such country or possession.

“(B) EXCEPTIONS.—Such term shall not include a tax unless it has substantial application, by its terms and in practice, to—

“(i) persons who are not dual capacity taxpayers, and

“(ii) persons who are citizens or residents of the foreign country or possession.”.

(b) EFFECTIVE DATE.—

(1) IN GENERAL.—The amendments made by this section shall apply to taxes paid or accrued in taxable years beginning after the date of the enactment of this Act.

(2) CONTRARY TREATY OBLIGATIONS UPHELD.—The amendments made by this section shall not apply to the extent contrary to any treaty obligation of the United States.
SEC. 5062. LIMITATION ON SECTION 199 DEDUCTION AT-
TRIBUTABLE TO OIL, NATURAL GAS, OR PRI-
MARY PRODUCTS THEREOF.

(a) Denial of Deduction.—Paragraph (4) of sec-
tion 199(c) is amended by adding at the end the following
new subparagraph:

“(E) Special rule for certain oil
and gas income.—In the case of any taxpayer
who is a major integrated oil company (within
the meaning of section 167(h)(5)) for the tax-
able year, the term ‘domestic production gross
receipts’ shall not include gross receipts from
the production, refining, processing, transpor-
tation, or distribution of oil, gas, or any pri-
mary product (within the meaning of subsection
(d)(9)) thereof.”.

(b) Effective Date.—The amendment made by
this section shall apply to taxable years beginning after
December 31, 2015.

SEC. 5063. LIMITATION ON DEDUCTION FOR INTANGIBLE
DRILLING AND DEVELOPMENT COSTS; AMOR-
TIZATION OF DISALLOWED AMOUNTS.

(a) In General.—Section 263(c) is amended to read
as follows:
“(c) **Intangible Drilling and Development Costs in the Case of Oil and Gas Wells and Geothermal Wells.**—

“(1) **In general.**—Notwithstanding subsection (a), and except as provided in subsection (i), regulations shall be prescribed by the Secretary under this subtitle corresponding to the regulations which granted the option to deduct as expenses intangible drilling and development costs in the case of oil and gas wells and which were recognized and approved by the Congress in House Concurrent Resolution 50, Seventy-ninth Congress. Such regulations shall also grant the option to deduct as expenses intangible drilling and development costs in the case of wells drilled for any geothermal deposit (as defined in section 613(e)(2)) to the same extent and in the same manner as such expenses are deductible in the case of oil and gas wells. This subsection shall not apply with respect to any costs to which any deduction is allowed under section 59(e) or 291.

“(2) **Exclusion.**—

“(A) **In general.**—This subsection shall not apply to amounts paid or incurred by a taxpayer in any taxable year in which such tax-
payer is a major integrated oil company (within the meaning of section 167(h)(5)).

“(B) Amortization of amounts not allowable as deductions under subparagraph (A).—The amount not allowable as a deduction for any taxable year by reason of subparagraph (A) shall be allowable as a deduction ratably over the 60-month period beginning with the month in which the costs are paid or incurred. For purposes of section 1254, any deduction under this subparagraph shall be treated as a deduction under this subsection.”.

(b) Effective Date.—The amendment made by this section shall apply to amounts paid or incurred in taxable years beginning after December 31, 2015.

SEC. 5064. LIMITATION ON PERCENTAGE DEPLETION ALLOWANCE FOR OIL AND GAS WELLS.

(a) In General.—Section 613A is amended by adding at the end the following new subsection:

“(f) Application With Respect to Major Integrated Oil Companies.—In the case of any taxable year in which the taxpayer is a major integrated oil company (within the meaning of section 167(h)(5)), the allowance for percentage depletion shall be zero.”.
(b) Effective Date.—The amendment made by this section shall apply to taxable years beginning after December 31, 2015.

SEC. 5065. LIMITATION ON DEDUCTION FOR TERTIARY INJECTANTS.

(a) In General.—Section 193 is amended by adding at the end the following new subsection:

“(d) Application With Respect to Major Integrated Oil Companies.—

“(1) In General.—This section shall not apply to amounts paid or incurred by a taxpayer in any taxable year in which such taxpayer is a major integrated oil company (within the meaning of section 167(h)(5)).

“(2) Amortization of Amounts Not Allowable as Deductions Under Paragraph (1).—The amount not allowable as a deduction for any taxable year by reason of paragraph (1) shall be allowable as a deduction ratably over the 60-month period beginning with the month in which the costs are paid or incurred.”.

(b) Effective Date.—The amendment made by this section shall apply to amounts paid or incurred in taxable years beginning after December 31, 2015.
TITLE VI—CONSERVATION
REAUTHORIZATION

SEC. 6001. NATIONAL PARK SERVICE CENTENNIAL FUND.

(a) IN GENERAL.—Chapter 1049 of title 54, United States Code, is amended by adding at the end the following:

“§ 104908. National Park Service Centennial Fund

“(a) IN GENERAL.—There is established in the Treasury a fund, to be known as the ‘National Park Service Centennial Fund’ (referred to in this section as the ‘Fund’).

“(b) DEPOSITS TO FUND.—Notwithstanding any provision of law providing that the proceeds shall be credited to miscellaneous receipts of the Treasury, for each fiscal year, there shall be deposited in the Fund, from revenues due and payable to the United States under section 9 of the Outer Continental Shelf Lands Act (43 U.S.C. 1338), $150,000,000.

“(c) AVAILABILITY.—Amounts deposited in the Fund shall be made available for expenditure, without further appropriation or fiscal year limitation, in accordance with this section.

“(d) USE OF FUND.—The Secretary shall use amounts in the Fund for critical National Park System maintenance and infrastructure needs and other projects.
and programs that will better enable the National Park Service to protect park resources and provide improved visitor services.

“(e) LAND ACQUISITION PROHIBITION.—Amounts in the Fund shall not be used for land acquisition.”.

(b) CLERICAL AMENDMENT.—The table of sections for chapter 1049 of title 54, United States Code, is amended by inserting after the item relating to section 104907 the following:

“Sec. 104908. National Park Service Centennial Fund.”.

SEC. 6002. LAND AND WATER CONSERVATION FUND.

(a) PERMANENT AUTHORIZATION.—Section 200302 of title 54, United States Code, is amended—

(1) in subsection (b), in the matter preceding paragraph (1), by striking “During the period ending September 30, 2015, there” and inserting “There”; and

(2) in subsection (c)—

(A) in paragraph (1), by striking “through September 30, 2015”; and

(3) by striking paragraph (3).

(b) FULL FUNDING.—Section 200303 of title 54, United States Code, is amended to read as follows:

“§ 200303. Availability of funds

“(a) IN GENERAL.—Amounts deposited in the Fund under section 200302 on or after the date of enactment
of the American Energy Innovation Act shall be made available for expenditure, without further appropriation or fiscal year limitation, to carry out the purposes of the Fund (including accounts and programs made available from the Fund under the Consolidated and Further Continuing Appropriations Act, 2015 (Public Law 113–235)).

“(b) ADDITIONAL AMOUNTS.—Amounts made available under subsection (a) shall be in addition to amounts made available to the Fund under section 105 of the Gulf of Mexico Energy Security Act of 2006 (43 U.S.C. 1331 note; Public Law 109–432) or otherwise appropriated from the Fund.

“(c) ALLOCATION AUTHORITY.—

“(1) SUBMISSION OF COST ESTIMATES.—The President shall submit to Congress detailed account, program, and project allocations to be funded under subsection (a) as part of the annual budget submission of the President.

“(2) ALTERNATE ALLOCATION.—

“(A) IN GENERAL.—Appropriations Acts may provide for alternate allocation of amounts made available under subsection (a), including allocations by account and program.

“(B) ALLOCATION BY PRESIDENT.—
“(i) **No Alternate Allocations.**—

If Congress has not enacted legislation establishing alternate allocations by the date that is 120 days after the date on which the applicable fiscal year begins, amounts made available under subsection (a) shall be allocated by the President.

“(ii) **Insufficient Alternate Allocation.**—If Congress enacts legislation establishing alternate allocations for amounts made available under subsection (a) that are less than the full amount appropriated under that subsection, the difference between the amount appropriated and the alternate allocation shall be allocated by the President.

“(3) **Annual Report.**—The President shall submit to Congress an annual report that describes the final allocation by account, program, and project of amounts made available under subsection (a), including a description of the status of obligations and expenditures.”.

(e) **Clerical Amendment.**—The table of sections for title 54 is amended by striking the item relating to section 200303 and inserting the following:

“Sec. 200303. Availability of funds.”.
(d) PUBLIC ACCESS.—Section 200306 of title 54, United States Code, is amended by adding at the end the following:

“(c) PUBLIC ACCESS.—Not less than 1.5 percent of the annual authorized funding amount shall be made available each year for projects that secure recreational public access to existing Federal public land for hunting, fishing, or other recreational purposes.”.

SEC. 6003. HISTORIC PRESERVATION FUND.

(a) AUTHORIZATION.—Section 303102 of title 54, United States Code, is amended by striking “of fiscal years 2012 to 2015” and inserting “fiscal year”.

(b) USE AND AVAILABILITY.—Section 303103 of title 54, United States Code, is amended by striking the first sentence and inserting the following: “Amounts deposited in the Historic Preservation Fund on or after the date of enactment of the American Energy Innovation Act shall only be used to carry out this division and shall be available for expenditure without further appropriation.”.
A BILL

To provide for investment in clean energy, to empower and protect consumers, to modernize energy infrastructure, to cut pollution and waste, to invest in research and development, and for other purposes.

SEPTMBER 29, 2015

Read the second time and placed on the calendar.