

114TH CONGRESS  
1ST SESSION

**S.** \_\_\_\_\_

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.

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IN THE SENATE OF THE UNITED STATES

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\_\_\_\_\_ introduced the following bill; which was read twice and referred to the Committee on \_\_\_\_\_

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**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 Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

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

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

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

## 2

## 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. 1052. Working Group on Energy Markets.

Sec. 1053. Study of regulatory framework for energy markets.

## Subtitle G—Transmission

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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.

Sec. 2003. Consolidation of release authorities.

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## 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.

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## Subtitle C—Advanced Manufacturing

- Sec. 2021. Advanced Manufacturing Office.
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- 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—21<sup>st</sup> Century Energy Workforce

- Sec. 2101. Findings.
- Sec. 2102. Definitions.
- Sec. 2103. National Center of Excellence for the 21<sup>st</sup> 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

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- Sec. 2132. Priority areas for development on Federal land.

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- Sec. 2133. Facilitation of coproduction of geothermal energy on oil and gas leases.
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- 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.
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- Sec. 2141. Fossil energy.

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- 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.

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- 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  
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- Sec. 3031. Findings.
- Sec. 3032. Reauthorization of Weatherization Assistance Program.
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Sec. 3071. Definitions.

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Sec. 3082. Phase 1: Initial allocation of grants to States.

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Sec. 3105. Report.

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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.

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Subtitle N—Venting and Flaring of Gas

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Sec. 3141. Production incentive fee.

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Subtitle B—Clean Fuel Tax Credits

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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.

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TITLE VI—CONSERVATION REAUTHORIZATION

Sec. 6001. National Park Service Centennial Fund.

Sec. 6002. Land and Water Conservation Fund.

Sec. 6003. Historic preservation fund.

1 **SEC. 2. DEFINITIONS.**

2 In this Act:

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

5 (2) SECRETARY.—Except as otherwise provided  
6 in this Act, the term “Secretary” means the Sec-  
7 retary of Energy.

8 **TITLE I—EMPOWERING AND**  
9 **PROTECTING CONSUMERS**  
10 **Subtitle A—Access to Consumer**  
11 **Energy Information**

12 **SEC. 1001. CONSUMER ACCESS TO ELECTRIC ENERGY IN-**  
13 **FORMATION.**

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

17 (b) ELIGIBILITY FOR STATE ENERGY PLANS.—Sec-  
18 tion 362(d) of the Energy Policy and Conservation Act  
19 (42 U.S.C. 6322(d)) is amended—

20 (1) in paragraph (16), by striking “and” after  
21 the semicolon at the end;

22 (2) by redesignating paragraph (17) as para-  
23 graph (18); and

24 (3) by inserting after paragraph (16) the fol-  
25 lowing:

26 “(17) programs—

1           “(A) to enhance consumer access to and  
2 understanding of energy usage and price infor-  
3 mation, including consumers’ own residential  
4 and commercial electricity information; and

5           “(B) to allow for the development and  
6 adoption of innovative products and services to  
7 assist consumers in managing energy consump-  
8 tion and expenditures; and”.

9           (c) VOLUNTARY GUIDELINES FOR ELECTRIC CON-  
10 SUMER ACCESS.—

11           (1) DEFINITIONS.—In this subsection:

12           (A) RETAIL ELECTRIC ENERGY INFORMA-  
13 TION.—The term “retail electric energy infor-  
14 mation” means—

15           (i) the electric energy consumption of  
16 an electric consumer over a defined time  
17 period;

18           (ii) the retail electric energy prices or  
19 rates applied to the electricity usage for  
20 the defined time period described in clause  
21 (i) for the electric consumer;

22           (iii) the estimated cost of service by  
23 the consumer, including (if smart meter  
24 usage information is available) the esti-



1 mated cost of service since the last billing  
2 cycle of the consumer; and

3 (iv) in the case of nonresidential elec-  
4 tric meters, any other electrical informa-  
5 tion that the meter is programmed to  
6 record (such as demand measured in kilo-  
7 watts, voltage, frequency, current, and  
8 power factor).

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

12 (i)(I) measures electric energy con-  
13 sumption by an electric consumer at the  
14 home or facility of the electric consumer in  
15 intervals of 1 hour or less; and

16 (II) is capable of sending electric en-  
17 ergy usage information through a commu-  
18 nications network to the electric utility; or

19 (ii) meets the guidelines issued under  
20 paragraph (2).

21 (2) VOLUNTARY GUIDELINES FOR ELECTRIC  
22 CONSUMER ACCESS.—

23 (A) IN GENERAL.—Not later than 180  
24 days after the date of enactment of this Act,  
25 subject to subparagraph (B), the Secretary

1 shall issue voluntary guidelines that establish  
2 model standards for implementation of retail  
3 electric energy information access in States.

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

6 (i) consult with—

7 (I) State and local regulatory au-  
8 thorities, including the National Asso-  
9 ciation of Regulatory Utility Commis-  
10 sioners;

11 (II) other appropriate Federal  
12 agencies, including the National Insti-  
13 tute of Standards and Technology;

14 (III) consumer and privacy advo-  
15 cacy groups;

16 (IV) utilities;

17 (V) the National Association of  
18 State Energy Officials; and

19 (VI) other appropriate entities,  
20 including groups representing com-  
21 mercial and residential building own-  
22 ers and groups that represent demand  
23 response and electricity data devices  
24 and services; and

1 (ii) provide notice and opportunity for  
2 comment.

3 (C) STATE AND LOCAL REGULATORY AC-  
4 TION.—In issuing the voluntary guidelines, the  
5 Secretary shall, to the maximum extent prac-  
6 ticable, be guided by actions taken by State and  
7 local regulatory authorities to ensure electric  
8 consumer access to retail electric energy infor-  
9 mation, including actions taken after consider-  
10 ation of the standard established under section  
11 111(d)(17) of the Public Utility Regulatory  
12 Policies Act of 1978 (16 U.S.C. 2621(d)(17)).

13 (D) CONTENTS.—

14 (i) IN GENERAL.—The voluntary  
15 guidelines shall provide guidance on issues  
16 necessary to carry out this subsection, in-  
17 cluding—

18 (I) the timeliness and specificity  
19 of retail electric energy information;

20 (II) appropriate nationally recog-  
21 nized open standards for data;

22 (III) the protection of data secu-  
23 rity and electric consumer privacy, in-  
24 cluding consumer consent require-  
25 ments; and

1 (IV) issues relating to access of  
2 electric energy information for owners  
3 and managers of multitenant commer-  
4 cial and residential buildings.

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

7 (I) retail electric energy informa-  
8 tion should be made available to elec-  
9 tric consumers (and third-party des-  
10 ignees of the electric consumers) in  
11 the United States—

12 (aa) in an electronic ma-  
13 chine readable form, without ad-  
14 ditional charge, in conformity  
15 with standards developed through  
16 a voluntary, consensus-based,  
17 multistakeholder process;

18 (bb) as timely as is reason-  
19 ably practicable;

20 (cc) at the level of specificity  
21 that the data is transmitted by  
22 the meter or as is reasonably  
23 practicable; and

24 (dd) in a manner that pro-  
25 vides adequate protections for the

1 security of the information and  
2 the privacy of the electric con-  
3 sumer;

4 (II) in the case of an electric con-  
5 sumer that is served by a smart meter  
6 that can also communicate energy  
7 usage information to a device or net-  
8 work of an electric consumer or a de-  
9 vice or network of a third party au-  
10 thORIZED by the consumer, considers  
11 providing to the consumer or third-  
12 party designee, at a minimum, access  
13 to usage information (not including  
14 price information) of the consumer di-  
15 rectly from the smart meter;

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

22 (IV) retail electric energy infor-  
23 mation of the consumer should be  
24 made available to the consumer  
25 through a website or other electronic

1 access authorized by the electric con-  
2 sumer, for a period of at least 13  
3 months after the date on which the  
4 usage occurred;

5 (V) consumer access to data, in-  
6 cluding data provided to owners and  
7 managers of commercial and multi-  
8 family buildings with multiple tenants,  
9 should not interfere with or com-  
10 promise the integrity, security, or pri-  
11 vacy of the operations of a utility and  
12 the electric consumer;

13 (VI) electric energy information  
14 relating to usage information gen-  
15 erated by devices in or on the prop-  
16 erty of the consumer that is trans-  
17 mitted to the electric utility should be  
18 made available to the electric con-  
19 sumer or the third-party agent des-  
20 ignated by the electric consumer; and

21 (VII) the same privacy and secu-  
22 rity requirements applicable to the  
23 contracting utility under subclause  
24 (I)(dd) should apply to third-party  
25 agents contracting with a utility to

1 process the customer data of that util-  
2 ity.

3 (E) REVISIONS.—The Secretary shall peri-  
4 odically review and, as necessary, revise the vol-  
5 untary guidelines to reflect changes in tech-  
6 nology, privacy needs, and the market for elec-  
7 tric energy and services.

8 (d) VERIFICATION AND IMPLEMENTATION.—

9 (1) IN GENERAL.—A State may submit to the  
10 Secretary a description of the data sharing policies  
11 of the State relating to consumer access to electric  
12 energy information for certification by the Secretary  
13 that the policies meet the voluntary guidelines issued  
14 under subsection (c)(2).

15 (2) ASSISTANCE.—Subject to the availability of  
16 funds under paragraph (3), the Secretary shall make  
17 Federal amounts available to any State that has  
18 data sharing policies described in paragraph (1) that  
19 the Secretary certifies meets the voluntary guidelines  
20 issued under subsection (c)(2) to assist the State in  
21 implementing section 362(d)(17) of the Energy Pol-  
22 icy and Conservation Act (42 U.S.C. 6322(d)(17)).

23 (3) AUTHORIZATION OF APPROPRIATIONS.—  
24 There is authorized to be appropriated to carry out

1       this subsection \$10,000,000 for fiscal year 2016, to  
2       remain available until expended.

3       **Subtitle B—Unfair Trade Practices**  
4       **Prohibition in Distributed Gen-**  
5       **eration**

6       **SEC. 1011. INVESTIGATION OF DISTRIBUTED GENERATION.**

7       (a) DEFINITIONS.—In this section:

8               (1) DISTRIBUTED GENERATION.—The term  
9       “distributed generation” means the generation of  
10       electric energy for use at or near the point of gen-  
11       eration.

12              (2) ELECTRIC CONSUMER.—The term “electric  
13       consumer” means any person to whom electric en-  
14       ergy is sold for purposes other than resale.

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

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

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



1 (B) to purchase from an electric consumer  
2 electric energy generated by a distributed gen-  
3 eration facility; or

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

7 (b) INVESTIGATION.—The Federal Trade Commis-  
8 sion shall conduct an investigation to determine the extent  
9 to which interconnection practices impede the use of dis-  
10 tributed generation.

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

14 (1) identify any interconnection practice that  
15 substantially injures electric consumers and violates  
16 public policies promoting the development of distrib-  
17 uted generation;

18 (2) determine whether any interconnection  
19 practice identified under paragraph (1) is an unfair  
20 act or practice in or affecting commerce in violation  
21 of section 5 of the Federal Trade Commission Act  
22 (15 U.S.C. 45); and

23 (3) report to Congress the findings and conclu-  
24 sions of the investigation (including the determina-  
25 tions under paragraphs (1) and (2)) and any rec-

1       ommendations for additional legislation that the  
2       Commission determines is needed to remove unfair  
3       impediments to the development of distributed gen-  
4       eration.

5                   **Subtitle C—Enhanced Grid**  
6                   **Security**

7       **SEC. 1021. CYBERSECURITY THREATS.**

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

10      **“SEC. 224. CYBERSECURITY THREATS.**

11           “(a) DEFINITIONS.—In this section:

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

15                   “(2) CYBERSECURITY THREAT.—The term ‘cy-  
16           bersecurity threat’ means the imminent danger of an  
17           act that severely disrupts, attempts to severely dis-  
18           rupt, or poses a significant risk of severely dis-  
19           rupting the operation of programmable electronic de-  
20           vices or communications networks (including hard-  
21           ware, software, and data) essential to the reliable  
22           operation of the bulk-power system.

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

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

3           “(b) EMERGENCY AUTHORITY OF SECRETARY.—

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

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

17           “(A) provide to the Secretary, in writing,  
18 a record of the determination and an expla-  
19 nation of the reasons for the determination; and

20           “(B) promptly notify, in writing, congres-  
21 sional committees of relevant jurisdiction, in-  
22 cluding the Committee on Energy and Natural  
23 Resources of the Senate and the Committee on  
24 Energy and Commerce of the House of Rep-

1           representatives, of the contents of, and justification  
2           for, the directive or determination.

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

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

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

20                   “(B) the Electric Reliability Organization;

21                   “(C) the Electricity Sub-sector Coordi-  
22                   nating Council (as established by the Electric  
23                   Reliability Organization); and

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

1 “(5) COST RECOVERY.—

2 “(A) IN GENERAL.—The Commission shall  
3 adopt regulations that permit entities subject to  
4 an order under paragraph (1) to seek recovery  
5 of prudently incurred costs required to imple-  
6 ment actions ordered by the Secretary under  
7 this subsection.

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

11 “(i) shall be just and reasonable; and

12 “(ii) shall not be unduly discrimina-  
13 tory or preferential.

14 “(c) DURATION OF EMERGENCY ORDERS.—An order  
15 issued by the Secretary pursuant to subsection (b) shall  
16 remain in effect for not longer than the 30-day period be-  
17 ginning on the effective date of the order, unless, during  
18 that 30 day-period, the Secretary—

19 “(1) provides to interested persons an oppor-  
20 tunity to submit written data, recommendations, and  
21 arguments; and

22 “(2) affirms, amends, or repeals the order, sub-  
23 ject to the condition that an amended order shall not  
24 exceed a total duration of 90 days.”.

1 **SEC. 1022. ENHANCED GRID SECURITY.**

2 (a) DEFINITIONS.—In this section:

3 (1) ELECTRIC UTILITY.—The term “electric  
4 utility” has the meaning given the term in section  
5 3 of the Federal Power Act (16 U.S.C. 796).

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

9 (3) NATIONAL LABORATORY.—The term “Na-  
10 tional Laboratory” has the meaning given the term  
11 in section 2 of the Energy Policy Act of 2005 (42  
12 U.S.C. 15801).

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

18 (b) SECTOR-SPECIFIC AGENCY FOR CYBERSECURITY  
19 FOR THE ENERGY SECTOR.—

20 (1) IN GENERAL.—The Department shall be the  
21 lead Sector-Specific Agency for cybersecurity for the  
22 energy sector.

23 (2) DUTIES.—As the designated Sector-Specific  
24 Agency for cybersecurity, the duties of the Depart-  
25 ment shall include—

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

4 (B) collaborating with—

5 (i) critical infrastructure owners and  
6 operators; and

7 (ii) as appropriate—

8 (I) independent regulatory agen-  
9 cies; and

10 (II) State, local, tribal and terri-  
11 torial entities;

12 (C) serving as a day-to-day Federal inter-  
13 face for the dynamic prioritization and coordi-  
14 nation of sector-specific activities;

15 (D) carrying out incident management re-  
16 sponsibilities consistent with applicable law (in-  
17 cluding regulations) and other appropriate poli-  
18 cies or directives;

19 (E) providing, supporting, or facilitating  
20 technical assistance and consultations for the  
21 energy sector to identify vulnerabilities and help  
22 mitigate incidents, as appropriate; and

23 (F) supporting the reporting requirements  
24 of the Department of Homeland Security under  
25 applicable law by providing, on an annual basis,

1 sector-specific critical infrastructure informa-  
2 tion.

3 (c) CYBERSECURITY FOR THE ENERGY SECTOR RE-  
4 SEARCH, DEVELOPMENT, AND DEMONSTRATION PRO-  
5 GRAM.—

6 (1) IN GENERAL.—The Secretary, in consulta-  
7 tion with appropriate Federal agencies, the energy  
8 sector, the States, and other stakeholders, shall  
9 carry out a program—

10 (A) to develop advanced cybersecurity ap-  
11 plications and technologies for the energy sec-  
12 tor—

13 (i) to identify and mitigate  
14 vulnerabilities, including—

15 (I) dependencies on other critical  
16 infrastructure; and

17 (II) impacts from weather and  
18 fuel supply; and

19 (ii) to advance the security of field de-  
20 vices, third-party control systems, and ap-  
21 plications, including—

22 (I) systems for generation, trans-  
23 mission, distribution, end use, and  
24 market functions;



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

5 (III) forensic analysis of infected  
6 systems; and

7 (IV) secure communications;

8 (B) to leverage electric grid architecture as  
9 a means to assess risks to the energy sector, in-  
10 cluding by implementing an all-hazards ap-  
11 proach to communications infrastructure, con-  
12 trol systems architecture, and power systems  
13 architecture;

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

17 (D) to develop workforce development cur-  
18 ricula for energy sector-related cybersecurity.

19 (2) AUTHORIZATION OF APPROPRIATIONS.—

20 There is authorized to be appropriated to carry out  
21 this subsection \$65,000,000 for each of fiscal years  
22 2017 through 2025.

23 (d) ENERGY SECTOR COMPONENT TESTING FOR  
24 CYBERRESILIENCE PROGRAM.—

1           (1) IN GENERAL.—The Secretary shall carry  
2 out a program—

3           (A) to establish a cybertesting and mitiga-  
4 tion program to identify vulnerabilities of en-  
5 ergy sector supply chain products to known  
6 threats;

7           (B) to oversee third-party cybertesting;  
8 and

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

11           (2) AUTHORIZATION OF APPROPRIATIONS.—

12 There is authorized to be appropriated to carry out  
13 this subsection \$15,000,000 for each of fiscal years  
14 2017 through 2025.

15           (e) ENERGY SECTOR OPERATIONAL SUPPORT FOR  
16 CYBERRESILIENCE PROGRAM.—

17           (1) IN GENERAL.—The Secretary may carry out  
18 a program—

19           (A) to enhance and periodically test—

20                   (i) the emergency response capabilities  
21 of the Department; and

22                   (ii) the coordination of the Depart-  
23 ment with other agencies, the National  
24 Laboratories, and private industry;

1 (B) to expand cooperation of the Depart-  
2 ment with the public sector and intelligence  
3 communities for energy sector-related threat  
4 collection and analysis;

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

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

10 (E) to provide technical assistance to small  
11 electric utilities for purposes of assessing  
12 cybermaturity level.

13 (2) AUTHORIZATION OF APPROPRIATIONS.—  
14 There is authorized to be appropriated to carry out  
15 this subsection \$10,000,000 for each of fiscal years  
16 2017 through 2025.

17 (f) MODELING AND ASSESSING ENERGY INFRA-  
18 STRUCTURE RISK.—

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

24 (2) SECURITY AND RESILIENCY OBJECTIVE.—  
25 The objective of the program developed under para-

1 graph (1) is to increase the functional preservation  
2 of the electric grid operations or natural gas and oil  
3 operations in the face of natural and human-made  
4 threats and hazards, including electric magnetic  
5 pulse and geomagnetic disturbances.

6 (3) ELIGIBLE ACTIVITIES.—In carrying out the  
7 program developed under paragraph (1), the Sec-  
8 retary may—

9 (A) develop capabilities to identify  
10 vulnerabilities and critical components that pose  
11 major risks to grid security if destroyed or im-  
12 paired;

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

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

18 (D) conduct exercises and assessments to  
19 identify and mitigate vulnerabilities to the elec-  
20 tric grid, including providing mitigation rec-  
21 ommendations;

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

1           (F) conduct research mitigation and recovery  
2           solutions for critical components of the elec-  
3           tric grid; and

4           (G) provide technical assistance to States  
5           and other entities for standards and risk anal-  
6           ysis.

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

11          (g) LEVERAGING EXISTING PROGRAMS.—The pro-  
12          grams established under this section shall be carried out  
13          consistent with—

14           (1) the report of the Department entitled  
15           “Roadmap to Achieve Energy Delivery Systems Cy-  
16           bersecurity” and dated 2011;

17           (2) existing programs of the Department; and

18           (3) any associated strategic framework that  
19           links together academic and National Laboratory re-  
20           searchers, electric utilities, manufacturers, and any  
21           other relevant private industry organizations, includ-  
22           ing the Electricity Sub-sector Coordinating Council.

23          (h) STUDY.—

24           (1) IN GENERAL.—Not later than 180 days  
25           after the date of enactment of this Act, the Sec-

1       retary, in consultation with the Federal Energy Reg-  
2       ulatory Commission and the North American Elec-  
3       tric Reliability Corporation, shall conduct a study to  
4       explore alternative management structures and fund-  
5       ing mechanisms to expand industry membership and  
6       participation in ES-ISAC.

7               (2) REPORT.—The Secretary shall submit to  
8       the appropriate committees of Congress a report de-  
9       scribing the results of the study conducted under  
10      paragraph (1).

11       **Subtitle D—Capacity Markets**  
12                                   **Study**

13      **SEC. 1031. GAO CAPACITY MARKET IMPACT STUDY.**

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

17               (1) conduct a study of the effects of forward ca-  
18       pacity auctions or other capacity mechanisms that  
19       have been established by Independent System Opera-  
20       tors or Regional Transmission Organizations on—

21                               (A) consumer prices for electricity;

22                               (B) the installation of new electrical gen-  
23       eration systems;

24                               (C) the preservation of existing electrical  
25       generation systems; and

1 (D) competition in energy markets, includ-  
2 ing the potential for the use of undue market  
3 power or manipulation in the auctions; and  
4 (2) submit to the appropriate committees of  
5 Congress a report describing the results of the study  
6 conducted under paragraph (1), including an assess-  
7 ment of whether the auctions or capacity mecha-  
8 nisms are producing rates that are just and reason-  
9 able.

## 10 **Subtitle E—Severe Coal Supply** 11 **Emergency Response**

### 12 **SEC. 1041. SEVERE COAL SUPPLY EMERGENCY RESPONSE.**

13 (a) DEFINITIONS.—In this section:

14 (1) BOARD.—The term “Board” means the  
15 Surface Transportation Board.

16 (2) ELECTRIC RELIABILITY ORGANIZATION.—  
17 The term “Electric Reliability Organization” has the  
18 meaning given the term in section 215 of the Fed-  
19 eral Power Act (16 U.S.C. 824o).

20 (3) FORM OE-417.—The term “Form OE-417”  
21 means the form entitled “Electric Emergency Inci-  
22 dent and Disturbance Report” (or a successor form)  
23 and filed in accordance with the Federal Energy Ad-  
24 ministration Act of 1974 (15 U.S.C. 761 et seq.).

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

5 (b) COORDINATION AND REPORT.—

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

10          (2) CONSULTATION AND COORDINATION.—The  
11 Secretary, the Board, the Federal Energy Regu-  
12 latory Commission, and, as appropriate, the Electric  
13 Reliability Organization, shall, to the maximum ex-  
14 tent practicable, consult and coordinate with each  
15 other to alleviate and prevent recurrences of a severe  
16 coal supply emergency.

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

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



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

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

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

## 10 **Subtitle F—Energy Markets**

### 11 **SEC. 1051. ENHANCED INFORMATION ON CRITICAL ENERGY** 12 **SUPPLIES.**

13 (a) IN GENERAL.—Section 205 of the Department of  
14 Energy Organization Act (42 U.S.C. 7135) is amended  
15 by adding at the end the following:

16 “(n) COLLECTION OF INFORMATION ON CRITICAL  
17 ENERGY SUPPLIES.—

18 “(1) IN GENERAL.—To ensure transparency of  
19 information relating to energy infrastructure and  
20 product ownership in the United States and improve  
21 the ability to evaluate the energy security of the  
22 United States, the Administrator, in consultation  
23 with other Federal agencies (as necessary), shall—

24 “(A) not later than 120 days after the date  
25 of enactment of this subsection, develop and

1 provide notice of a plan to collect, in coopera-  
2 tion with the Commodity Futures Trade Com-  
3 mission, information identifying all oil inven-  
4 tories, and other physical oil assets (including  
5 all petroleum-based products and the storage of  
6 such products in off-shore tankers), that are  
7 owned by the 50 largest traders of oil contracts  
8 (including derivative contracts), as determined  
9 by the Commodity Futures Trade Commission;  
10 and

11 “(B) not later than 90 days after the date  
12 on which notice is provided under subparagraph  
13 (A), implement the plan described in that sub-  
14 paragraph.

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

19 “(A) volumes of product under ownership;  
20 and

21 “(B) storage and transportation capacity  
22 (including owned and leased capacity).

23 “(3) PROTECTION OF PROPRIETARY INFORMA-  
24 TION.—Section 12(f) of the Federal Energy Admin-

1       istration Act of 1974 (15 U.S.C. 771(f)) shall apply  
2       to information collected under this subsection.

3       “(o) COLLECTION OF INFORMATION ON STORAGE  
4 CAPACITY FOR OIL AND NATURAL GAS.—

5           “(1) IN GENERAL.—Not later than 90 days  
6       after the date of enactment of this subsection, the  
7       Administrator of the Energy Information Adminis-  
8       tration shall collect information quantifying the com-  
9       mercial storage capacity for oil and natural gas in  
10      the United States.

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

14          “(3) PROTECTION OF PROPRIETARY INFORMA-  
15      TION.—Section 12(f) of the Federal Energy Admin-  
16      istration Act of 1974 (15 U.S.C. 771(f)) shall apply  
17      to information collected under this subsection.

18      “(p) FINANCIAL MARKET ANALYSIS OFFICE.—

19          “(1) ESTABLISHMENT.—There shall be within  
20      the Energy Information Administration a Financial  
21      Market Analysis Office, headed by a director, who  
22      shall report directly to the Administrator of the En-  
23      ergy Information Administration.

24          “(2) DUTIES.—The Office shall—

1           “(A) be responsible for analysis of the fi-  
2 nancial aspects of energy markets;

3           “(B) review the reports required by section  
4 1053(c) of the American Energy Innovation  
5 Act, in advance of the submission of the reports  
6 to Congress; and

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

9           “(i) make recommendations to the  
10 Administrator of the Energy Information  
11 Administration that identify and quantify  
12 any additional resources that are required  
13 to improve the ability of the Energy Infor-  
14 mation Administration to more fully inte-  
15 grate financial market information into the  
16 analyses and forecasts of the Energy Infor-  
17 mation Administration, including the role  
18 of energy futures contracts, energy com-  
19 modity swaps, and derivatives in price for-  
20 mation for oil;

21           “(ii) conduct a review of implications  
22 of policy changes and changes in how  
23 crude oil and refined petroleum products  
24 are transported with respect to price for-

1                   mation of crude oil and refined petroleum  
2                   products; and

3                   “(iii) notify the Committee on Energy  
4                   and Natural Resources, and the Committee  
5                   on Appropriations, of the Senate and the  
6                   Committee on Energy and Commerce, and  
7                   the Committee on Appropriations, of the  
8                   House of Representatives of the rec-  
9                   ommendations described in clause (i).

10                  “(3) ANALYSES.—The Administrator of the En-  
11                  ergy Information Administration shall take analyses  
12                  by the Office into account in conducting analyses  
13                  and forecasting of energy prices.”.

14                  (b) CONFORMING AMENDMENT.—Section 645 of the  
15                  Department of Energy Organization Act (42 U.S.C. 7255)  
16                  is amended by inserting “(15 U.S.C. 3301 et seq.) and  
17                  the Natural Gas Act (15 U.S.C. 717 et seq.)” after “Nat-  
18                  ural Gas Policy Act of 1978”.

19                  **SEC. 1052. WORKING GROUP ON ENERGY MARKETS.**

20                  (a) ESTABLISHMENT.—There is established a Work-  
21                  ing Group on Energy Markets (referred to in this subtitle  
22                  as the “Working Group”).

23                  (b) COMPOSITION.—The Working Group shall be  
24                  composed of—

25                         (1) the Secretary;

1 (2) the Secretary of the Treasury;

2 (3) the Chairman of the Federal Energy Regu-  
3 latory Commission;

4 (4) the Chairman of Federal Trade Commis-  
5 sion;

6 (5) the Chairman of the Securities and Ex-  
7 change Commission;

8 (6) the Chairman of the Commodity Futures  
9 Trading Commission; and

10 (7) the Administrator of the Energy Informa-  
11 tion Administration.

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

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

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

19 (1) investigate the effect of increased financial  
20 investment in energy commodities on energy prices  
21 and the energy security of the United States;

22 (2) recommend to the President and Congress  
23 laws (including regulations) that may be needed to  
24 prevent excessive speculation in energy commodity  
25 markets in order to prevent or minimize the adverse

1 impact of excessive speculation on energy prices on  
2 consumers and the economy of the United States;  
3 and

4 (3) review energy security implications of devel-  
5 opments in international energy markets.

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

10 (g) COOPERATION OF OTHER AGENCIES.—The heads  
11 of Executive departments, agencies, and independent in-  
12 strumentalities shall, to the extent permitted by law, pro-  
13 vide the Working Group with such information as the  
14 Working Group requires to carry out this section.

15 (h) CONSULTATION.—The Working Group shall con-  
16 sult, as appropriate, with representatives of the various  
17 exchanges, clearinghouses, self-regulatory bodies, other  
18 major market participants, consumers, and the general  
19 public.

20 **SEC. 1053. STUDY OF REGULATORY FRAMEWORK FOR EN-**  
21 **ERGY MARKETS.**

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

24 (1) to identify the factors that affect the pricing  
25 of crude oil and refined petroleum products, includ-

1       ing an examination of the effects of market specula-  
2       tion on prices; and

3               (2) to review and assess—

4                       (A) existing statutory authorities relating  
5                       to the oversight and regulation of markets crit-  
6                       ical to the energy security of the United States;  
7                       and

8                       (B) the need for additional statutory au-  
9                       thority for the Federal Government to effec-  
10                      tively oversee and regulate markets critical to  
11                      the energy security of the United States.

12       (b) ELEMENTS OF STUDY.—The study shall in-  
13       clude—

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

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

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

23       (c) REPORT AND RECOMMENDATIONS.—The Sec-  
24       retary shall submit to the Committee on Energy and Nat-  
25       ural Resources of the Senate and the Committee on En-



1 ergy and Commerce of the House of Representatives quar-  
2 terly progress reports during the conduct of the study  
3 under this section, and a final report not later than 1 year  
4 after the date of enactment of this Act, that—

5 (1) describes the results of the study; and

6 (2) provides options and the recommendations  
7 of the Working Group for appropriate Federal co-  
8 ordination of oversight and regulatory actions to en-  
9 sure transparency of crude oil and refined petroleum  
10 product pricing and the elimination of excessive  
11 speculation, including recommendations on data col-  
12 lection and analysis to be carried out by the Finan-  
13 cial Market Analysis Office established by section  
14 205(p) of the Department of Energy Organization  
15 Act (42 U.S.C. 7135(p)).

16 (d) AUTHORIZATION OF APPROPRIATIONS.—There  
17 are authorized to be appropriated such sums as are nec-  
18 essary to carry out this section.

## 19 **Subtitle G—Transmission**

### 20 **SEC. 1061. REPORT BY TRANSMISSION ORGANIZATIONS ON** 21 **DISTRIBUTED ENERGY RESOURCES AND** 22 **MICROGRID SYSTEMS.**

23 (a) DEFINITIONS.—In this section:

24 (1) DISTRIBUTED ENERGY RESOURCE.—The  
25 term “distributed energy resource” means an elec-

1       tricity supply resource that, as permitted by State  
2       law—

3               (A)(i) is interconnected to the electric sys-  
4               tem operated by a transmission organization at  
5               or below 69kV; and

6               (ii) is subject to dispatch by the trans-  
7               mission organization; and

8               (B)(i) generates electricity using any pri-  
9               mary energy source, including solar energy and  
10              other renewable resources; or

11              (ii) stores energy and is capable of sup-  
12              plying electricity to the electric system operated  
13              by the transmission organization from the stor-  
14              age reservoir.

15              (2) ELECTRIC GENERATING CAPACITY RE-  
16              SOURCE.—The term “electric generating capacity re-  
17              source” means an electric generating resource, as  
18              measured by the maximum load-carrying ability of  
19              the resource, exclusive of station use and planned,  
20              unplanned, or other outage or derating, that is sub-  
21              ject to dispatch by a transmission organization to  
22              meet the resource adequacy needs of the systems op-  
23              erated by the transmission organization.

1           (3) MICROGRID SYSTEM.—The term “microgrid  
2 system” means an electrically distinct system under  
3 common control that—

4           (A) serves an electric load at or below  
5 69kV from a distributed energy resource or  
6 electric generating capacity resource; and

7           (B) is subject to dispatch by a trans-  
8 mission organization.

9           (4) TRANSMISSION ORGANIZATION.—The term  
10 “transmission organization” has the meaning given  
11 the term in section 3 of the Federal Power Act (16  
12 U.S.C. 796).

13 (b) REPORT.—

14           (1) NOTICE.—Not later than 14 days after the  
15 date of enactment of this section, the Commission  
16 shall submit to each transmission organization no-  
17 tice that the transmission organization is required to  
18 file with the Commission a report in accordance with  
19 paragraph (2).

20           (2) REPORT.—Not later than 180 days after  
21 the date on which a transmission organization re-  
22 ceives a notice under paragraph (1), the trans-  
23 mission organization shall submit to the Commission  
24 a report that—

1 (A)(i) identifies distributed energy re-  
2 sources and micro-grid systems that are subject  
3 to dispatch by the transmission organization as  
4 of the date of the report; and

5 (ii) describes the fuel sources and oper-  
6 ational characteristics of such distributed en-  
7 ergy resources and micro-grid systems, includ-  
8 ing, to the maximum extent practicable, a dis-  
9 cussion of the benefits and costs associated with  
10 the distributed energy resources and microgrid  
11 systems identified under clause (i);

12 (B) evaluates, with due regard for oper-  
13 ational and economic benefits and costs, the po-  
14 tential for distributed energy resources and  
15 microgrid systems to be deployed to the trans-  
16 mission organization over the short- and long-  
17 term periods in the planning cycle of the trans-  
18 mission organization; and

19 (C) identifies—

20 (i) over the short- and long-term peri-  
21 ods in the planning cycle of the trans-  
22 mission organization, barriers to the de-  
23 ployment to the transmission organization  
24 of distributed energy resources and  
25 microgrid systems; and

1                   (ii) potential changes to the oper-  
2                   ational requirements for, or charges associ-  
3                   ated with, the interconnection of distrib-  
4                   uted energy resources and microgrid sys-  
5                   tems to the transmission organization that  
6                   would reduce the barriers identified under  
7                   clause (i).

8 **SEC. 1062. NET METERING STUDY GUIDANCE.**

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

12 **“SEC. 1841. NET ENERGY METERING STUDY.**

13           “(a) IN GENERAL.—Not later than 180 days after  
14 the date of enactment of this section, the Secretary shall—

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

18                   “(2) undertake a study of net energy metering.

19           “(b) REQUIREMENTS AND CONTENTS.—The model  
20 guidance issued under subsection (a) shall clarify without  
21 prejudice to other study criteria that any study of net en-  
22 ergy metering, including the study conducted by the De-  
23 partment under subsection (a) shall—

24                   “(1) be publicly available; and

1           “(2) assess benefits and costs of net energy me-  
2           tering, including—  
3                 “(A) load data, including hourly profiles;  
4                 “(B) distributed generation production  
5           data;  
6                 “(C) best available technology, including  
7           inverter capability; and  
8                 “(D) benefits and costs of distributed en-  
9           ergy deployment, including—  
10                 “(i) environmental benefits;  
11                 “(ii) changes in electric system reli-  
12           ability;  
13                 “(iii) changes in peak power require-  
14           ments;  
15                 “(iv) provision of ancillary services,  
16           including reactive power;  
17                 “(v) changes in power quality;  
18                 “(vi) changes in land-use effects;  
19                 “(vii) changes in right-of-way acquisi-  
20           tion costs;  
21                 “(viii) changes in vulnerability to ter-  
22           rorism; and  
23                 “(ix) changes in infrastructure resil-  
24           ience.”.

1                   **TITLE II—MODERNIZING**  
2                   **INFRASTRUCTURE**  
3           **Subtitle A—QER Recommendations**

4   **SEC. 2001. NATURAL GAS DISTRIBUTION SYSTEM IMPROVE-**  
5                   **MENT PROGRAM.**

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

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

11           “(a) DEFINITIONS.—In this section:

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

17                   “(2) LOW-INCOME HOUSEHOLD.—The term  
18           ‘low-income household’ means a household—

19                           “(A) the combined income of which is  
20                           equal to or less than 200 percent of the poverty  
21                           level; or

22                           “(B) determined to be eligible by the State  
23                           in which the household is located under the low-  
24                           income home energy assistance program estab-  
25                           lished under the Low-Income Home Energy As-

1           sistance Act of 1981 (42 U.S.C. 8621 et seq.)  
2           using an eligibility standard based on—

3                   “(i) 150 percent of the poverty level;

4                   or

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

7           “(b) ESTABLISHMENT.—The Secretary shall make  
8 grants to eligible entities on a competitive basis to accel-  
9 erate or expand utility programs that improve the safety  
10 and environmental performance of natural gas distribution  
11 systems.

12           “(c) ELIGIBILITY.—

13                   “(1) IN GENERAL.—Except as provided in para-  
14 graph (2), to be eligible to receive a grant under  
15 subsection (b), an entity shall be—

16                           “(A) a State;

17                           “(B) the District of Columbia;

18                           “(C) the Commonwealth of Puerto Rico;

19                           “(D) any other territory or possession of  
20 the United States; or

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

24                   “(2) OTHER ENTITIES.—If an entity described  
25 in subparagraphs (A) through (D) of paragraph (1)



1 does not apply for a grant under subsection (b),  
2 units of general purpose local government, commu-  
3 nity action agencies, and other nonprofit agencies lo-  
4 cated in that entity shall be eligible to apply for a  
5 grant.

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

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

12 “(2) may use grant amounts—

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

16 “(B) for directed inspection and mainte-  
17 nance programs.

18 “(e) LOW-INCOME ASSISTANCE.—As a condition of  
19 receiving a grant under subsection (b), an eligible entity  
20 shall ensure that the grant amounts are used to offset the  
21 cost to low-income households of incremental increases in  
22 household bills associated with system upgrades using  
23 grant amounts.

24 “(f) APPLICATION PROCESS.—An eligible entity de-  
25 siring a grant under subsection (b) shall submit to the

1 Secretary an application at such time, in such manner,  
2 and containing such information as the Secretary may re-  
3 quire.

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

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

8 “(2) with respect to the application proposal of  
9 an eligible entity, consider and estimate the net ben-  
10 efits of the proposed—

11 “(A) magnitude of methane emission re-  
12 ductions;

13 “(B) use of innovative technology and pol-  
14 icy approaches;

15 “(C) number of low-income households es-  
16 timated to benefit from the proposed program;  
17 and

18 “(D) demonstrated coordination with a  
19 broad range of stakeholders, including the pub-  
20 lic utility commission (or equivalent entity),  
21 consumer advocates, and utilities.

22 “(h) AUTHORIZATION OF APPROPRIATIONS.—There  
23 is authorized to be appropriated to carry out this section  
24 \$3,500,000,000 for the period of fiscal years 2016  
25 through 2019.”.

1 **SEC. 2002. STRATEGY FOR MANAGING THE RISKS ASSOCI-**  
2 **ATED WITH THE LOSS OR DISRUPTION OF**  
3 **POWER FROM LARGE POWER TRANS-**  
4 **FORMERS.**

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

7 **“SEC. 224. STRATEGY FOR MANAGING THE RISKS ASSOCI-**  
8 **ATED WITH THE LOSS OR DISRUPTION OF**  
9 **POWER FROM LARGE POWER TRANS-**  
10 **FORMERS.**

11 “(a) ESTABLISHMENT.—The Secretary of Energy  
12 (referred to in this section as the ‘Secretary’), in coordina-  
13 tion with the Secretary of Homeland Security and the  
14 heads of other Federal agencies, States, and representa-  
15 tives of the electric industry, shall develop a strategy for  
16 identifying and managing the risks associated with the  
17 loss of power from large power transformers.

18 “(b) RESERVE.—In developing the strategy under  
19 subsection (a), the Secretary shall evaluate the establish-  
20 ment of 1 or more transformer reserves as an approach  
21 to mitigating the risks described in subsection (a).

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

25 “(1) describes the findings, conclusions, and  
26 recommendations of the Secretary with respect to

1 the strategy required to be developed under sub-  
2 section (a); and

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

5 “(d) STRATEGIC TRANSFORMER RESERVE.—On sub-  
6 mission of the report under subsection (c), the Secretary  
7 may establish a Strategic Transformer Reserve.”.

8 **SEC. 2003. CONSOLIDATION OF RELEASE AUTHORITIES.**

9 (a) NORTHEAST HOME HEATING OIL RESERVE.—  
10 The Energy Policy and Conservation Act is amended by  
11 striking section 183 (42 U.S.C. 6250b) and inserting the  
12 following:

13 **“SEC. 183. CONDITIONS FOR RELEASE.**

14 “The Secretary may sell products from the Reserve  
15 only after the President makes a finding of a severe energy  
16 supply interruption in accordance with section 161(d), ex-  
17 cept that references to ‘petroleum products’ and the ‘Stra-  
18 tegic Petroleum Reserve’ in that section shall be deemed  
19 to be references to ‘petroleum distillate’ and the ‘North-  
20 east Home Heating Oil Reserve’, respectively.”.

21 (b) NORTHEAST GASOLINE SUPPLY RESERVE.—The  
22 Secretary may sell products from the Northeast Gasoline  
23 Supply Reserve only after making a finding of a severe  
24 energy supply interruption in accordance with section  
25 161(d) of the Energy Policy and Conservation Act (42

1 U.S.C. 6241(d)), except that references to “petroleum  
2 products” and the “Strategic Petroleum Reserve” in that  
3 section shall be deemed to be references to “gasoline” and  
4 the “Northeast Gasoline Supply Reserve”, respectively.

5 **SEC. 2004. MODERNIZATION OF STRATEGIC PETROLEUM**  
6 **RESERVE RELEASE AUTHORITIES.**

7 Section 161(d)(2) of the Energy Policy and Con-  
8 servation Act (42 U.S.C. 6241(d)(2)) is amended—

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

11 “(A)(i) an emergency”;

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

14 (3) in clause (ii) (as so redesignated), by strik-  
15 ing “has resulted” and inserting “will likely result”;

16 (4) in clause (iii) (as so redesignated), by strik-  
17 ing the period at the end and inserting “; or”; and

18 (5) by adding at the end the following:

19 “(B) an interruption in the global oil sup-  
20 ply exists that is likely to cause a severe in-  
21 crease in the price of domestic petroleum prod-  
22 ucts, regardless of whether the interruption re-  
23 sults in a loss of oil imports to the United  
24 States.”.

1 **SEC. 2005. OPTIMIZATION OF EMERGENCY RESPONSE CA-**  
2 **PABILITY OF STRATEGIC PETROLEUM RE-**  
3 **SERVE.**

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

7 **“SEC. 170. OPTIMIZATION OF EMERGENCY RESPONSE CA-**  
8 **PABILITY OF STRATEGIC PETROLEUM RE-**  
9 **SERVE.**

10 “(a) ANALYSIS.—The Secretary shall carry out an  
11 analysis, including detailed engineering studies, of the ap-  
12 propriate size and configuration of the Strategic Petro-  
13 leum Reserve.

14 “(b) FUNDING FOR SPR INFRASTRUCTURE AND DIS-  
15 TRIBUTION SYSTEMS.—After performing the analysis  
16 under subsection (a) and subject to the availability of  
17 funds, the Secretary may provide funds for Strategic Pe-  
18 troleum Reserve infrastructure and distribution systems  
19 in order to optimize the ability of the Strategic Petroleum  
20 Reserve to protect the economy of the United States in  
21 an emergency supply situation.

22 “(c) AUTHORIZATION OF APPROPRIATIONS.—There  
23 is authorized to be appropriated to carry out this section  
24 \$2,000,000,000 for the period of fiscal years 2016  
25 through 2019.”.

1 (b) CONFORMING AMENDMENT.—The table of con-  
2 tents for the Energy Policy and Conservation Act is  
3 amended by inserting after the item relating to section  
4 169 the following:

“Sec. 170. Optimization of emergency response capability of Strategic Petro-  
leum Reserve.”.

5 **Subtitle B—Grid Modernization**  
6 **and Storage**

7 **SEC. 2011. DEFINITION OF SECRETARY.**

8 In this subtitle (other than section 2012), the term  
9 “Secretary” means the Secretary, acting through the As-  
10 sistant Secretary of the Office of Electricity Delivery and  
11 Energy Reliability.

12 **SEC. 2012. GRID STORAGE PROGRAM.**

13 (a) IN GENERAL.—The Secretary shall conduct a  
14 program of research, development, and demonstration of  
15 electric grid energy storage that addresses the principal  
16 challenges identified in the 2013 Department of Energy  
17 Strategic Plan for Grid Energy Storage.

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

20 (1) materials and electrochemical systems re-  
21 search;

22 (2) power conversion technologies research;

23 (3) developing—

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

5 (B) validation and testing techniques;

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

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

14 (6) grid-scale testing and analysis of storage  
15 devices, including test-beds and field trials;

16 (7) cost-benefit analyses that inform capital ex-  
17 penditure planning for regulators and owners and  
18 operators of components of the electric grid;

19 (8) electricity storage device safety and reli-  
20 ability, including potential failure modes, mitigation  
21 measures, and operational guidelines;

22 (9) standards for storage device performance,  
23 control interface, grid interconnection, and inter-  
24 operability; and



1           (10) maintaining a public database of energy  
2           storage projects, policies, codes, standards, and reg-  
3           ulations.

4           (c) ASSISTANCE TO STATES.—The Secretary may  
5           provide technical and financial assistance to States, Indian  
6           tribes, or units of local government to participate in or  
7           use research, development, or deployment of technology  
8           developed under this section.

9           (d) AUTHORIZATION OF APPROPRIATIONS.—There is  
10          authorized to be appropriated to the Secretary to carry  
11          out this section \$50,000,000 for each of fiscal years 2017  
12          through 2026.

13       **SEC. 2013. TECHNOLOGY DEMONSTRATION AND THE DIS-**  
14                               **TRIBUTION SYSTEM.**

15          (a) IN GENERAL.—The Secretary shall establish a  
16          grant program to carry out eligible projects relating to the  
17          modernization of the electric grid, including the applica-  
18          tion of technologies to improve observability, advanced  
19          controls, and prediction of system performance on the dis-  
20          tribution system.

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

23                (1) be designed to improve the performance and  
24                efficiency of the future electric grid, while ensuring

1 the continued provision of safe, secure, reliable, and  
2 affordable power; and

3 (2) demonstrate—

4 (A) secure integration and management of  
5 2 or more energy resources, including distrib-  
6 uted energy generation, combined heat and  
7 power, microgrids, energy storage, electric vehi-  
8 cles, energy efficiency, demand response, and  
9 intelligent loads; and

10 (B) secure integration and interoperability  
11 of communications and information tech-  
12 nologies.

13 (c) PARTICIPATION.—Projects conducted under sub-  
14 section (a) shall include the participation of a partnership  
15 consisting of 2 or more entities that—

16 (1) may include—

17 (A) any institution of higher education;

18 (B) a National Laboratory;

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

21 (D) a representative of an Indian tribe; or

22 (E) a Federal power marketing adminis-  
23 tration; and

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

25 (A) an investor-owned electric utility;

- 1 (B) a publicly owned utility;
- 2 (C) a technology provider;
- 3 (D) a rural electric cooperative;
- 4 (E) a regional transmission organization;
- 5 or
- 6 (F) an independent system operator.

7 (d) SELECT AREAS OF FOCUS.—

8 (1) IN GENERAL.—The Secretary shall ensure  
9 that not fewer than 1 project conducted under sub-  
10 section (a) is—

11 (A) a transactive energy project that im-  
12 plements a system of economic or control mech-  
13 anisms that optimizes the dynamic balance of  
14 supply and demand across the electrical infra-  
15 structure, using economic value as a key oper-  
16 ational parameter; and

17 (B) a valuation innovation project that  
18 evaluates or implements markets, rates, and  
19 other ways of appropriately valuing the grid  
20 services provided by demand response, energy  
21 efficiency, electric vehicles, storage, distributed  
22 generation, and other generation technologies to  
23 ensure—

24 (i) appropriate cost-recovery;

1 (ii) reliability of the distribution grid;  
2 and  
3 (iii) increased penetration of demand  
4 response, energy efficiency, electric vehi-  
5 cles, storage, distributed generation, and  
6 other generation technologies.

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

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

16 (g) WORKING GROUPS.—

17 (1) IN GENERAL.—The Secretary shall establish  
18 1 or more working groups, to be composed of rep-  
19 resentatives of projects conducted under subsection  
20 (a), that shall—

21 (A) meet periodically to discuss implemen-  
22 tation of the projects, including challenges and  
23 potential solutions held in common by the  
24 projects; and

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

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

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

10 (a) DEFINITIONS.—In this section:

11 (1) HYBRID MICROGRID SYSTEM.—The term  
12 “hybrid microgrid system” means a stand-alone elec-  
13 trical system that—

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

16 (B) may use grid-scale energy storage.

17 (2) ISOLATED COMMUNITY.—The term “iso-  
18 lated community” means a community that is pow-  
19 ered by a stand-alone electric generation and dis-  
20 tribution system without the economic and reliability  
21 benefits of connection to a regional electric grid.

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

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

3 (b) PROGRAM.—

4           (1) ESTABLISHMENT.—The Secretary shall es-  
5 tablish a program to promote the development of—

6                 (A) hybrid microgrid systems for isolated  
7 communities; and

8                 (B) microgrid systems to increase the resil-  
9 ience of critical infrastructure.

10           (2) PHASES.—The program established under  
11 paragraph (1) shall be carried out in phases, includ-  
12 ing—

13                 (A) phase I, which shall consist of the de-  
14 velopment of a feasibility assessment for—

15                         (i) hybrid microgrid systems in iso-  
16 lated communities; and

17                         (ii) microgrid systems to enhance the  
18 resilience of critical infrastructure;

19                 (B) phase II, which shall consist of the de-  
20 velopment of an implementation strategy in ac-  
21 cordance with paragraph (3) to promote the de-  
22 velopment of hybrid microgrid systems for iso-  
23 lated communities, particularly for those com-  
24 munities exposed to extreme weather conditions

1 and high energy costs, including electricity,  
2 space heating and cooling, and transportation;

3 (C) phase III, which shall—

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

6 (ii) consist of the development of an  
7 implementation strategy to promote the de-  
8 velopment of microgrid systems that in-  
9 crease the resilience of critical infrastruc-  
10 ture;

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

13 (i) are based on the strategies devel-  
14 oped under subparagraph (B); and

15 (ii) include the development of phys-  
16 ical and cybersecurity plans to take appro-  
17 priate measures to protect and secure the  
18 electric grid; and

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

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

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

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

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

15                   (D) the capacity of the local workforce to  
16                   operate, maintain, and repair a hybrid  
17                   microgrid system;

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

21                   (F) leveraging existing capacity within  
22                   local or regional research organizations, such as  
23                   organizations based at institutions of higher  
24                   education, to support development of hybrid  
25                   microgrid systems, including by testing novel



1 components and systems prior to field deploy-  
2 ment;

3 (G) the need for basic infrastructure to de-  
4 velop, deploy, and sustain a hybrid microgrid  
5 system;

6 (H) input of traditional knowledge from  
7 local leaders of isolated communities in the de-  
8 velopment of a hybrid microgrid system;

9 (I) the impact of hybrid microgrid systems  
10 on defense, homeland security, economic devel-  
11 opment, and environmental interests;

12 (J) opportunities to leverage existing inter-  
13 agency coordination efforts and recommenda-  
14 tions for new interagency coordination efforts to  
15 minimize unnecessary overhead, mobilization,  
16 and other project costs; and

17 (K) any other criteria the Secretary deter-  
18 mines appropriate.

19 (c) COLLABORATION.—The program established  
20 under subsection (b)(1) shall be carried out in collabora-  
21 tion with relevant stakeholders, including, as appro-  
22 priate—

23 (1) States;

24 (2) Indian tribes;

25 (3) regional entities and regulators;

1 (4) units of local government;

2 (5) institutions of higher education; and

3 (6) private sector entities.

4 (d) REPORT.—Not later than 180 days after the date  
5 of enactment of this Act, and annually thereafter, the Sec-  
6 retary shall submit to the Committee on Energy and Nat-  
7 ural Resources of the Senate and the Committee on En-  
8 ergy and Commerce of the House of Representatives a re-  
9 port on—

10 (1) the efforts to implement the program estab-  
11 lished under subsection (b)(1); and

12 (2) the status of the strategy developed under  
13 subsection (b)(2)(B).

14 **SEC. 2015. ELECTRIC SYSTEM GRID ARCHITECTURE, SCE-**  
15 **NARIO DEVELOPMENT, AND MODELING.**

16 (a) GRID ARCHITECTURE AND SCENARIO DEVELOP-  
17 MENT.—

18 (1) IN GENERAL.—Subject to paragraph (2),  
19 the Secretary shall establish and facilitate a collabo-  
20 rative process to develop model grid architecture and  
21 a set of future scenarios for the electric system to  
22 examine the impacts of different combinations of re-  
23 sources (including different quantities of distributed  
24 energy resources and large-scale, central generation)  
25 on the electric grid.



1 (C) maximizing the cost-effectiveness of fu-  
2 ture grid-related investments.

3 (c) INPUT.—The Secretary shall develop the sce-  
4 narios and conduct the modeling and analysis under sub-  
5 sections (a) and (b) with participation or input, as appro-  
6 priate, from—

7 (1) the National Laboratories;

8 (2) States;

9 (3) State regulatory authorities;

10 (4) transmission organizations;

11 (5) representatives of the electric industry;

12 (6) academic institutions;

13 (7) independent research institutes; and

14 (8) other entities.

15 **SEC. 2016. VOLUNTARY MODEL PATHWAYS.**

16 (a) ESTABLISHMENT OF VOLUNTARY MODEL PATH-  
17 WAYS.—

18 (1) ESTABLISHMENT.—Not later than 90 days  
19 after the date of enactment of this Act, the Sec-  
20 retary shall initiate the development of voluntary  
21 model pathways for modernizing the electric grid  
22 through a collaborative, public-private effort that—

23 (A) produces illustrative policy pathways  
24 that can be adapted for State and regional ap-  
25 plications by regulators and policymakers;

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

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

6 (D) acknowledges and provides for dif-  
7 ferent priorities, electric systems, and rate  
8 structures across States and regions.

9 (2) OBJECTIVES.—The pathways established  
10 under paragraph (1) shall facilitate achievement of  
11 the following objectives:

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

14 (B) Data visualization.

15 (C) Advanced monitoring and control of  
16 the advanced electric grid.

17 (D) Enhanced certainty for private invest-  
18 ment in the electric system.

19 (E) Increased innovation.

20 (F) Greater consumer empowerment.

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

23 (H) Improved—

24 (i) integration of distributed energy  
25 resources;

1 (ii) interoperability of the electric sys-  
2 tem; and

3 (iii) predictive modeling and capacity  
4 forecasting.

5 (3) STEERING COMMITTEE.—Not later than 90  
6 days after the date of enactment of this Act, the  
7 Secretary shall establish a steering committee to fa-  
8 cilitate the development of the pathways under para-  
9 graph (1), to be composed of members appointed by  
10 the Secretary, consisting of persons with appropriate  
11 expertise representing a diverse range of interests in  
12 the public, private, and academic sectors, including  
13 representatives of—

14 (A) the Smart Grid Task Force; and

15 (B) the Smart Grid Advisory Committee.

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

20 **SEC. 2017. PERFORMANCE METRICS FOR ELECTRICITY IN-**  
21 **FRAStructure PROVIDERS.**

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

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

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

6           (b) CONSIDERATIONS FOR DEVELOPMENT OF  
7 METRICS.—In developing metrics for evaluating and  
8 quantifying the electric grid under subsection (a), the Sec-  
9 retary shall consider—

10           (1) standard methodologies for calculating im-  
11 provements or deteriorations in the performance  
12 metrics, such as reliability, grid efficiency, power  
13 quality, consumer satisfaction, sustainability, and fi-  
14 nancial incentives;

15           (2) standard methodologies for calculating value  
16 to ratepayers, including broad economic and related  
17 impacts from improvements to the performance  
18 metrics;

19           (3) appropriate ownership and operating roles  
20 for electric utilities that would enable improved per-  
21 formance through the adoption of emerging, com-  
22 mercially available or advanced grid technologies or  
23 solutions, including—

24                   (A) multicustomer microgrids;

25                   (B) distributed energy resources;

- 1 (C) energy storage;
- 2 (D) electric vehicles;
- 3 (E) electric vehicle charging infrastructure;
- 4 (F) integrated information and commu-
- 5 nications systems;
- 6 (G) transactive energy systems; and
- 7 (H) advanced demand management sys-
- 8 tems; and
- 9 (4) with respect to States, the role of the grid
- 10 operator in enabling a robust future electric system
- 11 to ensure that—
- 12 (A) electric utilities remain financially via-
- 13 ble;
- 14 (B) electric utilities make the needed in-
- 15 vestments that ensure a reliable, secure, and re-
- 16 silient grid; and
- 17 (C) costs incurred to transform to an inte-
- 18 grated grid are allocated and recovered respon-
- 19 sibly, efficiently, and equitably.

20 **SEC. 2018. STATE AND REGIONAL DISTRIBUTION PLAN-**

21 **NING.**

22 (a) IN GENERAL.—On the request of a State or re-

23 gional organization, the Secretary shall partner with

24 States and regional organizations to facilitate the develop-



1 ment of State and regional electricity distribution plans  
2 by—

3 (1) conducting a resource assessment and anal-  
4 ysis of future demand and distribution requirements;  
5 and

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

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

10 (1) the evaluation of the physical and cyberse-  
11 curity needs of an advanced distribution manage-  
12 ment system and the integration of distributed en-  
13 ergy resources; and

14 (2) advanced use of grid architecture to analyze  
15 risks in an all-hazards approach that includes com-  
16 munications infrastructure, control systems architec-  
17 ture, and power systems architecture.

18 (c) TECHNICAL ASSISTANCE.—For the purpose of de-  
19 veloping State and regional electricity distribution plans,  
20 the Secretary shall provide technical assistance to—

21 (1) States;

22 (2) regional reliability entities; and

23 (3) other distribution asset owners and opera-  
24 tors.

1 **SEC. 2019. AUTHORIZATION OF APPROPRIATIONS.**

2 There is authorized to be appropriated to the Sec-  
3 retary to carry out sections 2013 through 2018  
4 \$200,000,000 for each of fiscal years 2017 through 2026.

5 **SEC. 2020. STATE CONSIDERATION OF RESILIENCE.**

6 (a) ADOPTION OF STANDARDS.—Section 111(d) of  
7 the Public Utility Regulatory Policies Act of 1978 (16  
8 U.S.C. 2621(d)) is amended by adding at the end the fol-  
9 lowing:

10 “(20) RESILIENCE.—

11 “(A) DEFINITION OF ELECTRIC GRID RE-  
12 SILIENCE.—The term ‘electric grid resilience’  
13 means the ability of the electric grid to adapt  
14 to changing conditions and withstand and rap-  
15 idly recover from disruptions.

16 “(B) REQUIRED CONSIDERATION.—Each  
17 electric utility shall incorporate into the regular  
18 planning process of the electric utility consider-  
19 ation of investments in electric grid resilience.

20 “(C) FACTORS.—Consideration under sub-  
21 paragraph (B) shall include an evaluation of po-  
22 tential benefits of enhancing electric grid resil-  
23 ience, including—

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

1 “(ii) adaptation to region-specific nat-  
2 ural threats and vulnerabilities;

3 “(iii) adaptation to climate change-re-  
4 lated extreme weather disruptions;

5 “(iv) support provided to inter-  
6 dependent critical infrastructures reliant  
7 on energy services to operate;

8 “(v) reduced costs under normal oper-  
9 ating conditions;

10 “(vi) enhanced distributed generation  
11 and microgrid functionality to operate as  
12 an integrated energy system in intentional  
13 islanding mode;

14 “(vii) localized energy generation that  
15 avoids incurrence of transmission and dis-  
16 tribution losses;

17 “(viii) system operational flexibility;  
18 and

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

21 (b) COMPLIANCE.—

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

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

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

8                   “(ii) set a hearing date for such consider-  
9                   ation, with respect to the standard established  
10                  by paragraph (20) of section 111(d).

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

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

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

21           (2) FAILURE TO COMPLY.—Section 112(c) of  
22           the Public Utility Regulatory Policies Act of 1978  
23           (16 U.S.C. 2622(c)) is amended by adding at the  
24           end the following: “In the case of the standard es-  
25           tablished by paragraph (20) of section 111(d), the

1 reference contained in this subsection to the date of  
2 enactment of this Act shall be deemed to be a ref-  
3 erence to the date of enactment of that paragraph.”.

## 4 **Subtitle C—Advanced** 5 **Manufacturing**

### 6 **SEC. 2021. ADVANCED MANUFACTURING OFFICE.**

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

10 (1) to carry out basic and applied research, de-  
11 velopment, and demonstration of new, energy-effi-  
12 cient processes and materials—

13 (A) at a scale adequate to prove the value  
14 of the processes and materials to manufacturers  
15 in multiple industries; and

16 (B) that facilitate investments and com-  
17 mercial scale-up;

18 (2) to focus on the conduct of activities that—

19 (A) use new technology and processes to  
20 reuse existing products or update existing proc-  
21 esses to achieve energy efficiency and promote  
22 energy savings; and

23 (B) make use of new and emerging proc-  
24 esses and materials;

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

3           (4) to enable the competitiveness of manufac-  
4 turers and energy efficiency of manufacturing in the  
5 United States by developing broadly applicable tech-  
6 nologies for energy-intensive and energy-dependent  
7 manufacturing by supporting research and develop-  
8 ment directed towards—

9           (A) advanced and critical materials that  
10 provide energy savings and efficiency;

11           (B) emerging topics, technology, and proc-  
12 esses in advanced manufacturing that promote  
13 energy savings;

14           (C) manufacturing platforms for advanced  
15 energy technologies; and

16           (D) strategies to address current and fu-  
17 ture workforce needs within the manufacturing  
18 sector.

19       (b) INDUSTRY PARTICIPATION.—To the maximum  
20 extent practicable, the Office shall carry out activities in  
21 partnership or collaboration with relevant industry stake-  
22 holders.

23       (c) INTERAGENCY AND INTRA-AGENCY COORDINA-  
24 TION.—The Secretary shall coordinate research, develop-

1 ment, demonstration, and commercial application activi-  
2 ties of the Office among—

3 (1) relevant programs within the Department,  
4 including—

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

7 (B) the Office of Fossil Energy;

8 (C) the Office of Nuclear Energy;

9 (D) ARPA-E;

10 (E) the Office of Energy Policy and Sys-  
11 tems Analysis; and

12 (F) other offices of the Department, as de-  
13 termined to be appropriate by the Secretary;  
14 and

15 (2) relevant technology research and develop-  
16 ment programs and workforce training programs in  
17 other Federal agencies.

18 **SEC. 2022. NATIONAL ADVANCED MANUFACTURING PLAN.**

19 (a) IN GENERAL.—Not later than 18 months after  
20 the date of enactment of this Act, the Secretary, in con-  
21 sultation with the Secretary of Commerce, shall enter into  
22 an agreement with the National Academies to develop a  
23 national plan for smart and advanced manufacturing tech-  
24 nology development and deployment to improve the pro-

1 ductivity, competitiveness, and energy efficiency of the  
2 manufacturing sector of the United States.

3 (b) CONTENTS.—

4 (1) IN GENERAL.—The plan developed under  
5 subsection (a) shall identify areas in which actions  
6 by the Secretary and the heads of other relevant  
7 Federal agencies would—

8 (A) accelerate the development, deploy-  
9 ment, and adoption of smart and advanced  
10 manufacturing technologies and processes;

11 (B) result in greater energy efficiency of,  
12 and lower environmental impacts for, all United  
13 States manufacturers;

14 (C) enhance competitiveness and strength-  
15 en the manufacturing sectors of the United  
16 States; and

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

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

23 (A) an assessment of actions of the De-  
24 partment relating to smart and advanced manu-



1 facturing that were carried out before or after  
2 the date of enactment of this Act;

3 (B) the establishment of voluntary inter-  
4 connection protocols and performance stand-  
5 ards;

6 (C) the commercialization of existing re-  
7 search results;

8 (D) an assessment of existing high-per-  
9 formance and cloud computing infrastructure  
10 and opportunities for those technologies to play  
11 a role in the design and production of advanced  
12 manufacturing technology;

13 (E) an assessment of the research and de-  
14 velopment opportunities for supply chains re-  
15 lated to the manufacture of carbon fiber com-  
16 posite, critical materials, advanced materials,  
17 and semiconductors;

18 (F) identification and assessment of finan-  
19 cial incentives or demonstration projects that  
20 could accelerate the commercialization of ad-  
21 vanced technology;

22 (G) an assessment and prioritization of  
23 emerging technologies and processes with the  
24 potential to increase manufacturing competi-  
25 tiveness;

1 (H) an analysis of the regions and indus-  
2 tries that would benefit the most from imple-  
3 menting smart manufacturing technologies;

4 (I) an assessment of—

5 (i) the lessons learned through the  
6 decades long partnership of the Depart-  
7 ment with the automotive industry; and

8 (ii) how lessons learned could be ap-  
9 plied to interactions with other industries  
10 (including the aerospace industry) and in-  
11 cluding—

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

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

20 (aa) cost savings;

21 (bb) energy savings;

22 (cc) job creation; and

23 (dd) environmental impacts;

24 and

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

6           (c) BIENNIAL REVISIONS AND REPORT.—

7           (1) BIENNIAL REVISIONS.—Not later than 2  
8           years after the date on which the Secretary com-  
9           pletes the plan under subsection (a), and not less  
10          frequently than once every 2 years thereafter, the  
11          Secretary shall revise the plan to account for ad-  
12          vancements in information and communication tech-  
13          nology and manufacturing needs after the comple-  
14          tion of the initial plan.

15          (2) REPORT.—The Secretary shall submit to  
16          Congress after each revision under paragraph (1) a  
17          report on the status of implementation of the plan  
18          established under subsection (a).

19          (d) AUTHORIZATION OF APPROPRIATIONS.—There is  
20          authorized to be appropriated to carry out the study under  
21          this section \$25,000,000.

22          **SEC. 2023. ADVANCED MANUFACTURING SUPPLY CHAIN RE-**  
23          **PORT.**

24          (a) IN GENERAL.—The Secretary shall enter into an  
25          arrangement with the National Academy of Sciences

1 under which the National Academy of Sciences shall de-  
2 velop a report that evaluates the manufacturing supply  
3 chains for various advanced manufacturing technologies,  
4 including—

5 (1) an assessment of the strength, weaknesses,  
6 opportunities, and obstacles in the supply chains of  
7 advanced manufacturing technologies, including car-  
8 bon fiber composite manufacturing, critical mate-  
9 rials, advanced materials, and semiconductors;

10 (2) analyses of—

11 (A) the ways in which the supply chains  
12 have changed during the 25-year period pre-  
13 ceding the date of enactment of this Act;

14 (B) whether the supply chains have been  
15 disrupted by unfair foreign competition;

16 (C) the impact of global trade on the sup-  
17 ply chains; and

18 (D) current trends relating to the supply  
19 chains;

20 (3) for each technology and process assessed,  
21 an analysis of which sections of the supply chain are  
22 critical for the United States to remain or become  
23 competitive in the manufacturing of the technology;  
24 and

1           (4) recommendations on which emerging tech-  
2           nologies and processes the United States should  
3           focus on in order to advance innovation in manufac-  
4           turing capabilities to increase the competitiveness of  
5           United States manufacturing.

6           (b) REPORT.—Not later than 2 years after the date  
7           on which the Secretary enters into the arrangement with  
8           the National Academy of Sciences under subsection (a),  
9           the National Academy of Sciences shall submit to the Sec-  
10          retary, the Committee on Energy and Natural Resources  
11          of the Senate, and the Committee on Energy and Com-  
12          merce of the House of Representatives a report that de-  
13          scribes the findings and recommendations of the National  
14          Academy of Sciences with respect to the assessment and  
15          analyses conducted under subsection (a).

16   **SEC. 2024. LEVERAGING EXISTING AGENCY PROGRAMS TO**  
17                           **ASSIST SMALL AND MEDIUM MANUFACTUR-**  
18                           **ERS.**

19          (a) COLLABORATION WITH NATIONAL LABORA-  
20          TORIES AND INSTITUTIONS OF HIGHER EDUCATION.—  
21          The Office shall work in collaboration with National Lab-  
22          oratories and institutions of higher education to provide  
23          assistance to small and medium manufacturers with re-  
24          spect to smart manufacturing technologies and practices.

1 (b) EXPANSION OF TECHNICAL ASSISTANCE PRO-  
2 GRAMS.—The Secretary shall expand the scope of tech-  
3 nologies covered by the Industrial Assessment Centers—

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

6 (2) to provide the directors of the Industrial  
7 Assessment Centers with the training and tools nec-  
8 essary to provide to manufacturers technical assist-  
9 ance in smart manufacturing technologies and prac-  
10 tices, including energy management systems.

11 **SEC. 2025. ADVANCED MANUFACTURING INNOVATION**  
12 **HUBS.**

13 (a) DEFINITIONS.—In this section:

14 (1) ADVANCED MANUFACTURING.—The term  
15 “advanced manufacturing” means—

16 (A) a technology, or process that—

17 (i) depends on the use and coordina-  
18 tion of information, automation, computa-  
19 tion, software, sensing, and networking;

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

22 (iii) enhances the manufacturing com-  
23 petitiveness of the United States;

24 (B) research, development, demonstration,  
25 and commercial application activities necessary

1 to ensure the long-term, secure, and sustainable  
2 supply of advanced materials; or

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

5 (2) HUB.—The term “Hub” means an Ad-  
6 vanced Manufacturing Innovation Hub established  
7 under subsection (b).

8 (3) QUALIFYING ENTITY.—The term “quali-  
9 fying entity” means—

10 (A) an institution of higher education in  
11 partnership with industry;

12 (B) an appropriate Federal or State entity,  
13 including Federally Funded Research and De-  
14 velopment Centers of the Department;

15 (C) a nongovernmental organization with  
16 expertise in advanced manufacturing research,  
17 development, demonstration, or commercial ap-  
18 plication activities; or

19 (D) any other relevant entity that the Sec-  
20 retary considers appropriate.

21 (b) AUTHORIZATION OF PROGRAM.—

22 (1) IN GENERAL.—The Secretary shall carry  
23 out a program to enhance the manufacturing com-  
24 petitiveness of the United States by making awards  
25 to consortia for establishing and operating Advanced

1 Manufacturing Innovation Hubs to conduct and sup-  
2 port multidisciplinary, collaborative research, devel-  
3 opment, demonstration, and commercial application  
4 of advance manufacturing technologies.

5 (2) CENTRALIZED LOCATION.—To the max-  
6 imum extent practicable, each Hub provided an  
7 award under this section shall be located at 1 cen-  
8 tralized location.

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

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

19 (c) CONSORTIA.—

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

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



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

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

7 (ii) measures to enable the cost-effec-  
8 tive implementation of the program under  
9 this section;

10 (iii) a proposed budget for the Hub,  
11 including a description of financial con-  
12 tributions from non-Federal sources;

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

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

19 (2) APPLICATION.—

20 (A) IN GENERAL.—A consortium seeking  
21 to establish and operate a Hub under this sec-  
22 tion, acting through a prime applicant, shall  
23 submit to the Secretary an application that ad-  
24 dresses the elements of the consortium agree-  
25 ment required under paragraph (1)(B).

1 (B) MULTIPLE LOCATIONS.—If the consor-  
2 tium members are not located at 1 centralized  
3 location, an application submitted under sub-  
4 paragraph (A) shall include a communications  
5 plan that ensures close coordination and inte-  
6 gration of the activities of the Hub.

7 (d) SELECTION AND SCHEDULE.—

8 (1) IN GENERAL.—The Secretary shall select  
9 consortia for awards for the establishment and oper-  
10 ation of Hubs through a competitive selection proc-  
11 ess.

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

14 (A) the information a consortium is re-  
15 quired to document under subsection (c)(1)(B);

16 (B) regional diversity; and

17 (C) any existing facilities that a consor-  
18 tium would provide for Hub activities.

19 (3) TERM.—

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

23 (B) RENEWAL.—At the end of the 5-year  
24 period of an award under this section, the Sec-

1           retary may renew the award, subject to a rig-  
2           orous merit review.

3       (e) HUB OPERATIONS.—

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

10          (2) REQUIREMENTS.—Each Hub shall—

11           (A) encourage collaboration and commu-  
12           nication among the member qualifying entities  
13           of the consortium and awardees by conducting  
14           activities, to the maximum extent practicable,  
15           at 1 centralized location;

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

18           (C) submit an annual report to the Sec-  
19           retary that summarizes, during the period cov-  
20           ered by the report, the activities of the Hub, in-  
21           cluding—

22           (i) a detailed description of organiza-  
23           tional expenditures by the Hub; and

24           (ii) a description of each project un-  
25           dertaken by the Hub; and

1 (D) monitor project implementation and  
2 coordination.

3 (3) CONFLICTS OF INTEREST.—

4 (A) PROCEDURES.—A Hub shall maintain  
5 conflict of interest procedures, consistent with  
6 the procedures of the Department, to ensure  
7 that employees and consortia designees for Hub  
8 activities that are in decisionmaking capac-  
9 ities—

10 (i) disclose all material conflicts of in-  
11 terest; and

12 (ii) avoid conflicts of interest.

13 (B) DISQUALIFICATION AND REVOCA-  
14 TION.—The Secretary may disqualify an appli-  
15 cation or revoke funds distributed to a Hub if  
16 the Secretary discovers a failure to comply with  
17 conflict of interest procedures established under  
18 subparagraph (A).

19 (4) PROHIBITION OF CONSTRUCTION.—

20 (A) IN GENERAL.—No funds provided  
21 under this section may be used for the con-  
22 struction of new buildings or facilities for a  
23 Hub.

24 (B) COST-SHARING AGREEMENT.—Con-  
25 struction of new buildings or facilities for a

1 Hub shall not be considered as part of the non-  
2 Federal share of a cost-sharing agreement of  
3 the Hub.

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

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

16 (g) LOAN PROGRAM.—The consortium from each  
17 Hub, in consultation with the Secretary, may identify best  
18 in class technologies that would be eligible for technical  
19 assistance, including assistance from loan programs of the  
20 Department, the Community Development Financial In-  
21 stitution Program, Small Business Administration loan  
22 programs, Small Business Innovation Research and Small  
23 Business Technology Transfer programs, and rural energy  
24 loan programs of the Department of Agriculture.

1 (h) AUTHORIZATION OF APPROPRIATIONS.—There is  
2 authorized to be appropriated to carry out this section  
3 \$300,000,000.

4 **SEC. 2026. ADVANCED MATERIALS PRIZE COMPETITION**  
5 **PILOT PROGRAM.**

6 (a) IN GENERAL.—The Secretary shall establish a  
7 prize competition under which eligible entities compete to  
8 develop and verifiably demonstrate advanced materials  
9 technology that reduces energy costs or reduces carbon di-  
10 oxide emissions by at least 20 percent.

11 (b) COMPETITION BOARD.—The Secretary shall es-  
12 tablish a Competition Board to administer the prize com-  
13 petition, to be composed of members from the Department  
14 and industry.

15 (c) ELIGIBLE ENTITIES.—To be eligible for the com-  
16 petition, an entity shall be—

17 (1) a non-public entity; or

18 (2) a public-private partnership in which the  
19 private entity is greater than 50 percent of the part-  
20 nership.

21 (d) AWARDS.—As part of the prize competition estab-  
22 lished under this section, the Competition Board shall  
23 award to eligible entities not more than 5 prizes of not  
24 more than \$2,000,000 each.

1 (e) DURATION.—The duration for the prize competi-  
2 tion established under this section shall be not less than  
3 2 years or more than 5 years.

4 (f) SELECTION.—In selecting a winner for a prize  
5 awarded under the prize competition, the Competition  
6 Board shall evaluate the technology developed by the eligi-  
7 ble entity based on the following criteria:

8 (1) The amount by which the technology would  
9 increase energy savings or decrease carbon dioxide  
10 emissions.

11 (2) The ability of the technology to be deployed  
12 in commercial application in a variety of industries  
13 or supply chains.

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

16 (4) The potential of the technology to trans-  
17 form an existing industry or establish a new indus-  
18 try.

19 (g) AUTHORIZATION OF APPROPRIATIONS.—There is  
20 authorized to be appropriated to carry out this section  
21 \$10,000,000.

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

24 The Office, in collaboration with the Industrial As-  
25 sessment Centers at the Department, the National Insti-

1 tute of Standards and Technology, the Manufacturing Ex-  
2 tension Partnership, original equipment manufacturers,  
3 and public utilities, shall develop a pilot program to work  
4 with small- and medium-manufacturers in supply chains  
5 of original equipment manufacturers to provide—

6 (1) an assessment of manufacturing efficiency;

7 and

8 (2) best practices and technical assistance for  
9 implementing energy savings and efficiency in the  
10 manufacturing process.

## 11 **Subtitle D—Building Better Trucks**

### 12 **SEC. 2031. ADVANCED TECHNOLOGY VEHICLES MANUFAC-** 13 **TURING INCENTIVE PROGRAM.**

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

16 (1) in subsection (a)—

17 (A) in paragraph (1)—

18 (i) by redesignating subparagraphs  
19 (A) through (C) as clauses (i) through  
20 (iii), respectively, and indenting appro-  
21 priately;

22 (ii) by striking “(1) ADVANCED TECH-  
23 NOLOGY VEHICLE.—” and all that follows  
24 through “meets—” and inserting the fol-  
25 lowing:



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

3           “(A) an ultra efficient vehicle;

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

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

8           (iv) by adding at the end the fol-  
9 lowing:

10           “(C) a medium-duty or heavy-duty vehicle  
11 that—

12           “(i)(I) is subject to regulations estab-  
13 lished by the Secretary of Transportation  
14 under parts 523, 534, and 535 of title 49,  
15 Code of Federal Regulations (or successor  
16 regulations); or

17           “(II) is included in a vehicle type or  
18 class that offers opportunities to substan-  
19 tially reduce consumption of conventional  
20 motor fuel, as determined by the Secretary  
21 by rule; and

22           “(ii) reduces consumption of conven-  
23 tional motor fuel by 10 percent or greater  
24 as compared to model year 2010 medium-  
25 and heavy-duty vehicles of a similar vehicle

1 type or class, unless the Secretary deter-  
2 mines by rule that—

3 “(I) the percentage is not achiev-  
4 able for a specific vehicle type or  
5 class; and

6 “(II) an alternative percentage  
7 for that vehicle type or class will re-  
8 sult in substantial reductions in motor  
9 fuel consumption within the United  
10 States.”; and

11 (B) by striking paragraph (4) and insert-  
12 ing the following:

13 “(4) QUALIFYING COMPONENTS.—The term  
14 ‘qualifying components’ means components, systems,  
15 or groups of subsystems that the Secretary deter-  
16 mines—

17 “(A) to be designed to improve fuel econ-  
18 omy or otherwise substantially reduce consump-  
19 tion of conventional motor fuel; or

20 “(B) to contribute measurably to the over-  
21 all improved fuel use of an advanced technology  
22 vehicle.”;

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

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

3           “(f) FEES.—

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

7                 “(2) USE OF FEES.—Fees collected under para-  
8 graph (1) shall—

9                         “(A) be deposited by the Secretary into the  
10 general fund of the Treasury; and

11                         “(B) remain available until expended, sub-  
12 ject to such other conditions as are contained in  
13 annual appropriations Acts.”; and

14           (4) in subsection (h)(1)(B), by striking “auto-  
15 mobiles, or components of automobiles” and insert-  
16 ing “automobiles or other vehicles, or components of  
17 automobiles or other vehicles”.

## 18         **Subtitle E—Vehicle Innovation**

### 19         **SEC. 2041. FINDINGS.**

20           Congress finds the following:

21                 (1) According to the Energy Information Ad-  
22 ministration, the transportation sector accounts for  
23 approximately 28 percent of the United States pri-  
24 mary energy demand and greenhouse gas emissions,  
25 and 21 percent of global oil demand.

1           (2) The United States transportation sector is  
2 over 90-percent dependent on petroleum.

3           (3) United States heavy truck fuel consumption  
4 will increase 27 percent by 2030.

5           (4) The domestic automotive and commercial  
6 vehicle manufacturing sectors have increasingly lim-  
7 ited resources for research, development, and engi-  
8 neering of advanced technologies.

9           (5) Vehicle, engine, and component manufactur-  
10 ers are playing a more important role in vehicle  
11 technology development, and should be better inte-  
12 grated into Federal research efforts.

13           (6) Priorities for the vehicle technologies re-  
14 search of the Department have shifted drastically in  
15 recent years among diesel hybrids, hydrogen fuel cell  
16 vehicles, and plug-in electric hybrids, with little con-  
17 tinuity among them.

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

22           (8) The Federal Government should balance its  
23 role in researching longer-term exploratory concepts  
24 and developing nearer-term transformational tech-  
25 nologies for vehicles.

1 **SEC. 2042. OBJECTIVES.**

2 The objectives of this subtitle are—

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

5 (A) improve the fuel efficiency and emis-  
6 sions of all vehicles produced in the United  
7 States; and

8 (B) reduce vehicle reliance on petroleum-  
9 based fuels;

10 (2) to support domestic research, development,  
11 engineering, demonstration, and commercial applica-  
12 tion and manufacturing of advanced vehicles, en-  
13 gines, and components;

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

17 (4) to develop cost-effective advanced tech-  
18 nologies for wide-scale utilization throughout the  
19 passenger, commercial, government, and transit ve-  
20 hicle sectors;

21 (5) to allow for greater consumer choice of vehi-  
22 cle technologies and fuels;

23 (6) shorten technology development and inte-  
24 gration cycles in the vehicle industry;

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

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

4 **SEC. 2043. VEHICLE RESEARCH AND DEVELOPMENT PRO-**  
5 **GRAM.**

6 (a) PROGRAM.—

7 (1) ACTIVITIES.—The Secretary shall conduct a  
8 program of basic and applied research, development,  
9 engineering, demonstration, and commercial applica-  
10 tion activities on materials, technologies, and proc-  
11 esses with the potential to substantially reduce or  
12 eliminate petroleum use and the emissions of pas-  
13 senger and commercial vehicles in the United States,  
14 including activities in the areas of—

15 (A) hybridization or full electrification of  
16 vehicle systems;

17 (B) batteries and other energy storage de-  
18 vices;

19 (C) power electronics;

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

22 (E) engine efficiency and combustion opti-  
23 mization;

24 (F) waste heat recovery;

25 (G) transmission and drivetrains;

1           (H) hydrogen vehicle technologies, includ-  
2           ing fuel cells and internal combustion engines,  
3           and hydrogen infrastructure, including hydro-  
4           gen energy storage to enable renewables and  
5           provide hydrogen for fuel and power;

6           (I) natural gas vehicle technologies;

7           (J) aerodynamics, rolling resistance (in-  
8           cluding tires and wheel assemblies), and acces-  
9           sory power loads of vehicles and associated  
10          equipment;

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

15          (L) friction and wear reduction;

16          (M) engine and component durability;

17          (N) innovative propulsion systems;

18          (O) advanced boosting systems;

19          (P) hydraulic hybrid technologies;

20          (Q) engine compatibility with and optimi-  
21          zation for a variety of transportation fuels in-  
22          cluding natural gas and other liquid and gas-  
23          eous fuels;

1 (R) predictive engineering, modeling, and  
2 simulation of vehicle and transportation sys-  
3 tems;

4 (S) refueling and charging infrastructure  
5 for alternative fueled and electric or plug-in  
6 electric hybrid vehicles, including the unique  
7 challenges facing rural areas;

8 (T) gaseous fuels storage systems and sys-  
9 tem integration and optimization;

10 (U) sensing, communications, and actu-  
11 ation technologies for vehicle, electrical grid,  
12 and infrastructure;

13 (V) efficient use, substitution, and recy-  
14 cling of potentially critical materials in vehicles,  
15 including rare earth elements and precious met-  
16 als, at risk of supply disruption;

17 (W) aftertreatment technologies;

18 (X) thermal management of battery sys-  
19 tems;

20 (Y) retrofitting advanced vehicle tech-  
21 nologies to existing vehicles;

22 (Z) development of common standards,  
23 specifications, and architectures for both trans-  
24 portation and stationary battery applications;



1           (AA) advanced internal combustion en-  
2           gines;  
3           (BB) mild hybrid;  
4           (CC) engine down speeding; and  
5           (DD) other research areas as determined  
6           by the Secretary.

7           (2) TRANSFORMATIONAL TECHNOLOGY.—The  
8           Secretary shall ensure that the Department con-  
9           tinues to support research, development, engineer-  
10          ing, demonstration, and commercial application ac-  
11          tivities and maintains competency in mid- to long-  
12          term transformational vehicle technologies with po-  
13          tential to achieve deep reductions in petroleum use  
14          and emissions, including activities in the areas of—

15               (A) hydrogen vehicle technologies, includ-  
16               ing fuel cells, hydrogen storage, infrastructure,  
17               and activities in hydrogen technology validation  
18               and safety codes and standards;

19               (B) multiple battery chemistries and novel  
20               energy storage devices, including nonchemical  
21               batteries and electromechanical storage tech-  
22               nologies such as hydraulics, flywheels, and com-  
23               pressed air storage;

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

4 (D) other innovative technologies research  
5 and development, as determined by the Sec-  
6 retary.

7 (3) INDUSTRY PARTICIPATION.—

8 (A) IN GENERAL.—To the maximum ex-  
9 tent practicable, activities under this section  
10 shall be carried out in partnership or collabora-  
11 tion with automotive manufacturers, heavy com-  
12 mercial, vocational, and transit vehicle manu-  
13 facturers, qualified plug-in electric vehicle man-  
14 ufacturers, compressed natural gas vehicle man-  
15 ufacturers, vehicle and engine equipment and  
16 component manufacturers, manufacturing  
17 equipment manufacturers, advanced vehicle  
18 service providers, fuel producers and energy  
19 suppliers, electric utilities, institutions of higher  
20 education, the National Laboratories (as that  
21 term is defined in section 2 of the Energy Pol-  
22 icy Act of 2005 (42 U.S.C. 15801)), and inde-  
23 pendent research laboratories.

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

1 (i)(I) determine whether a wide range  
2 of companies that manufacture or assem-  
3 ble vehicles or components in the United  
4 States are represented in ongoing public  
5 private partnership activities, including  
6 firms that have not traditionally partici-  
7 pated in federally sponsored research and  
8 development activities; and

9 (II) if possible, partner with firms de-  
10 scribed in subclause (II) that conduct sig-  
11 nificant and relevant research and develop-  
12 ment activities in the United States;

13 (ii) leverage the capabilities and re-  
14 sources of, and formalize partnerships  
15 with, industry-led stakeholder organiza-  
16 tions, nonprofit organizations, industry  
17 consortia, and trade associations with ex-  
18 pertise in the research and development of,  
19 and education and outreach activities in,  
20 advanced automotive and commercial vehi-  
21 cle technologies;

22 (iii) develop more effective processes  
23 for transferring research findings and tech-  
24 nologies to industry;

1 (iv) give consideration to conversion of  
2 existing or former vehicle technology devel-  
3 opment or manufacturing facilities for the  
4 purposes of this section;

5 (v) support public-private partnerships  
6 dedicated to overcoming barriers in com-  
7 mercial application of transformational ve-  
8 hicle technologies that use the industry-led  
9 technology development facilities of entities  
10 with demonstrated expertise in successfully  
11 designing and engineering pre-commercial  
12 generations of transformational vehicle  
13 technology; and

14 (vi) promote efforts to ensure that  
15 technology research, development, engi-  
16 neering, and commercial application activi-  
17 ties funded under this section are carried  
18 out in the United States.

19 (4) INTERAGENCY AND INTRAAGENCY COORDI-  
20 NATION.—To the maximum extent practicable, the  
21 Secretary shall coordinate research, development,  
22 demonstration, and commercial application activities  
23 among—

24 (A) relevant programs within the Depart-  
25 ment, including—

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

3 (ii) the Office of Science;

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

6 (iv) the Office of Fossil Energy;

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

9 (vi) other offices as determined by the  
10 Secretary; and

11 (B) relevant technology research and devel-  
12 opment programs within other Federal agen-  
13 cies, as determined by the Secretary.

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

20 (6) FEDERAL DEMONSTRATION OF TECH-  
21 NOLOGIES.—The Secretary shall make information  
22 available to procurement programs of Federal agen-  
23 cies regarding the potential to demonstrate tech-  
24 nologies resulting from activities funded through  
25 programs under this section.

1 (7) INTERGOVERNMENTAL COORDINATION.—

2 The Secretary shall seek opportunities to leverage  
3 resources and support initiatives of State and local  
4 governments in developing and promoting advanced  
5 vehicle technologies, manufacturing, and infrastruc-  
6 ture.

7 (8) CRITERIA.—In awarding grants under this  
8 program, the Secretary shall give priority to those  
9 technologies (either individually or as part of a sys-  
10 tem) that—

11 (A) provide the greatest aggregate fuel  
12 savings based on the reasonable projected sales  
13 volumes of the technology; and

14 (B) provide the greatest increase in em-  
15 ployment in the United States.

16 (b) SENSING AND COMMUNICATIONS TECH-  
17 NOLOGIES.—The Secretary, in coordination with the rel-  
18 evant research programs of other Federal agencies, shall  
19 conduct research, development, engineering, demonstra-  
20 tion, and deployment activities on connectivity of vehicle  
21 roadway, vulnerable road users, traffic control systems,  
22 and transportation data systems, including on sensing,  
23 data, computation, communication, cybersecurity, and ac-  
24 tuation technologies that allow for improved safety, re-

1 duced energy and fuel use, optimized traffic flow, and ve-  
2 hicle electrification, including technologies for—

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

5 (2) vehicle-to-vehicle sensing and communica-  
6 tion;

7 (3) vehicle-to-infrastructure sensing and com-  
8 munication;

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

11 (5) vehicle integration with the electrical grid.

12 (c) MANUFACTURING.—The Secretary shall carry out  
13 a research, development, engineering, demonstration, and  
14 commercial application program of advanced vehicle man-  
15 ufacturing technologies and practices, including innovative  
16 processes—

17 (1) to increase the production rate and decrease  
18 the cost of advanced battery and fuel cell manufac-  
19 turing;

20 (2) to vary the capability of individual manufac-  
21 turing facilities to accommodate different battery  
22 chemistries and configurations;

23 (3) to reduce waste streams, emissions, and en-  
24 ergy intensity of vehicle, engine, advanced battery  
25 and component manufacturing processes;

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

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

9           (6) to produce lightweight high pressure storage  
10          systems for gaseous fuels;

11          (7) to design and manufacture purpose-built hy-  
12          drogen fuel cell vehicles and components;

13          (8) to improve the calendar life and cycle life of  
14          advanced batteries; and

15          (9) to produce permanent magnets for advanced  
16          vehicles.

17          (d) USER TESTING FACILITIES.—Activities under  
18          this section may include construction, expansion, or modi-  
19          fication of new and existing vehicle, engine, and compo-  
20          nent research and testing facilities for—

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



1           (2) subjecting whole or partial vehicle platforms  
2           to fully representative duty cycles and operating con-  
3           ditions;

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

7           (4) developing and demonstrating test cycles for  
8           new and alternative fuels, and other advanced vehi-  
9           cle technologies;

10          (5) developing and demonstrating methods to  
11          charge electric vehicles and connect them to the elec-  
12          tric grid; and

13          (6) developing, testing, and demonstrating hy-  
14          drogen and natural gas refueling station tech-  
15          nologies.

16          (e) REPORTING.—

17           (1) TECHNOLOGIES DEVELOPED.—Not later  
18           than 18 months after the date of enactment of this  
19           Act and annually thereafter through 2020, the Sec-  
20           retary shall submit to Congress a report regarding  
21           the technologies developed as a result of the activi-  
22           ties authorized by this section, with a particular em-  
23           phasis on whether the technologies were successfully  
24           adopted for commercial applications, and if so,

1 whether products relying on those technologies are  
2 manufactured in the United States.

3 (2) ADDITIONAL MATTERS.—At the end of each  
4 fiscal year through 2020 the Secretary shall submit  
5 to the relevant Congressional committees of jurisdic-  
6 tion an annual report describing activities under-  
7 taken in the previous year under this section, active  
8 industry participants, efforts to recruit new partici-  
9 pants committed to design, engineering, and manu-  
10 facturing of advanced vehicle technologies in the  
11 United States, progress of the program in meeting  
12 goals and timelines, and a strategic plan for funding  
13 of activities across agencies.

14 **SEC. 2044. MEDIUM- AND HEAVY-DUTY COMMERCIAL AND**  
15 **TRANSIT VEHICLES PROGRAM.**

16 (a) PROGRAM.—

17 (1) IN GENERAL.—The Secretary, in partner-  
18 ship with relevant research and development pro-  
19 grams in other Federal agencies, and a range of ap-  
20 propriate industry stakeholders, shall carry out a  
21 program of cooperative research, development, dem-  
22 onstration, and commercial application activities on  
23 advanced technologies for medium- to heavy-duty  
24 commercial, vocational, recreational, and transit ve-  
25 hicles, including activities in the areas of—

1 (A) engine efficiency and combustion re-  
2 search;

3 (B) onboard storage technologies for com-  
4 pressed and liquefied natural gas;

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

8 (D) waste heat recovery and conversion;

9 (E) improved aerodynamics and tire rolling  
10 resistance;

11 (F) energy and space-efficient emissions  
12 control systems;

13 (G) mild hybrid, heavy hybrid, hybrid hy-  
14 draulic, plug-in hybrid, and electric platforms,  
15 and energy storage technologies;

16 (H) drivetrain optimization;

17 (I) friction and wear reduction;

18 (J) engine idle and parasitic energy loss  
19 reduction;

20 (K) electrification of accessory loads;

21 (L) onboard sensing and communications  
22 technologies;

23 (M) advanced lightweighting materials and  
24 vehicle designs;

25 (N) increasing load capacity per vehicle;

1 (O) thermal management of battery sys-  
2 tems;

3 (P) recharging infrastructure;

4 (Q) compressed natural gas infrastructure;

5 (R) advanced internal combustion engines;

6 (S) complete vehicle and power pack mod-  
7 eling, simulation, and testing;

8 (T) hydrogen vehicle technologies, includ-  
9 ing fuel cells and internal combustion engines,  
10 and hydrogen infrastructure, including hydro-  
11 gen energy storage to enable renewables and  
12 provide hydrogen for fuel and power;

13 (U) retrofitting advanced technologies onto  
14 existing truck fleets;

15 (V) advanced boosting systems;

16 (W) engine down speeding; and

17 (X) integration of these and other ad-  
18 vanced systems onto a single truck and trailer  
19 platform.

20 (2) REPORTING.—At the end of each fiscal year  
21 through fiscal year 2020, the Secretary shall submit  
22 to Congress an annual report describing activities  
23 undertaken in the previous year under this section,  
24 active industry participants, efforts to recruit new  
25 participants, progress of the program in meeting

1 goals and timelines, and a strategic plan for funding  
2 of activities across agencies.

3 (b) CLASS 8 TRUCK AND TRAILER SYSTEMS DEM-  
4 ONSTRATION.—

5 (1) IN GENERAL.—The Secretary shall conduct  
6 a competitive grant program to demonstrate the in-  
7 tegration of multiple advanced technologies on Class  
8 8 truck and trailer platforms, including a combina-  
9 tion of technologies listed in subsection (a)(1).

10 (2) APPLICANT TEAMS.—Applicant teams may  
11 be comprised of truck and trailer manufacturers, en-  
12 gine and component manufacturers, fleet customers,  
13 university researchers, and other applicants as ap-  
14 propriate for the development and demonstration of  
15 integrated Class 8 truck and trailer systems.

16 (c) TECHNOLOGY TESTING AND METRICS.—The Sec-  
17 retary, in coordination with the partners of the inter-  
18 agency research program described in subsection (a)(1)—

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

24 (2) shall evaluate heavy vehicle performance  
25 using work performance-based metrics other than

1 those based on miles per gallon, including those  
2 based on units of volume and weight transported for  
3 freight applications, and appropriate metrics based  
4 on the work performed by nonroad systems; and

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

7 (d) **NONROAD SYSTEMS PILOT PROGRAM.**—The Sec-  
8 retary shall undertake a pilot program of research, devel-  
9 opment, demonstration, and commercial applications of  
10 technologies to improve total machine or system efficiency  
11 for nonroad mobile equipment including agricultural, con-  
12 struction, air, and sea port equipment, and shall seek op-  
13 portunities to transfer relevant research findings and tech-  
14 nologies between the nonroad and on-highway equipment  
15 and vehicle sectors.

16 **SEC. 2045. AUTHORIZATION OF APPROPRIATIONS.**

17 There are authorized to be appropriated to the Sec-  
18 retary for research, development, engineering, demonstra-  
19 tion, and commercial application of vehicles and related  
20 technologies in the United States, including activities au-  
21 thorized under this subtitle—

22 (1) for fiscal year 2016, \$313,567,000;

23 (2) for fiscal year 2017, \$326,109,000;

24 (3) for fiscal year 2018, \$339,154,000;

25 (4) for fiscal year 2019, \$352,720,000; and

1 (5) for fiscal year 2020, \$366,829,000.

2 **Subtitle F—Carbon Fiber**

3 **Recycling**

4 **SEC. 2051. RECYCLED CARBON FIBER STUDY.**

5 (a) STUDY.—The Secretary shall conduct a study  
6 on—

7 (1) the technology of recycled carbon fiber and  
8 production waste carbon fiber; and

9 (2) the potential lifecycle energy savings and  
10 economic impact of recycled carbon fiber.

11 (b) FACTORS FOR CONSIDERATION.—In conducting  
12 the study under subsection (a), the Secretary shall take  
13 into consideration—

14 (1) the quantity of recycled carbon fiber or pro-  
15 duction waste carbon fiber that would make the use  
16 of recycled carbon fiber or production waste carbon  
17 fiber economically viable;

18 (2) any existing or potential barriers to recy-  
19 cling carbon fiber or using recycled carbon fiber;

20 (3) any financial incentives that may be nec-  
21 essary for the development of recycled carbon fiber  
22 or production waste carbon fiber;

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

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

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

6           (7) any economic benefits gained from using re-  
7 cycled carbon fiber or production waste carbon fiber;

8           (8) workforce training and skills needed to ad-  
9 dress labor demands in the development of recycled  
10 carbon fiber or production waste carbon fiber; and

11           (9) how the Department can leverage existing  
12 efforts in the industry on the use of production  
13 waste carbon fiber.

14       (c) REPORT.—Not later than 1 year after the date  
15 of enactment of this Act, the Secretary shall submit to  
16 Congress a report describing the results of the study con-  
17 ducted under subsection (a).

18 **SEC. 2052. CARBON FIBER RECYCLING DEMONSTRATION**

19 **PROJECT.**

20       The Secretary shall consult with the aviation and  
21 automotive industries and existing programs of the Ad-  
22 vanced Manufacturing Office of the Department to de-  
23 velop a carbon fiber recycling demonstration project.



1 **SEC. 2053. AUTHORIZATION OF APPROPRIATIONS.**

2 There is authorized to be appropriated to carry out  
3 this subtitle \$10,000,000, to remain available until ex-  
4 pended.

5 **Subtitle G—Job Creation Through**  
6 **Energy Efficient Manufacturing**

7 **SEC. 2061. PURPOSE.**

8 The purpose of this subtitle is to encourage wide-  
9 spread deployment of energy efficiency and onsite renew-  
10 able energy technologies in manufacturing and industrial  
11 facilities throughout the United States through the estab-  
12 lishment of a Financing Energy Efficient Manufacturing  
13 Program that would—

14 (1) encourage the widespread availability of fi-  
15 nancial products and programs with attractive rates  
16 and terms that significantly reduce or eliminate up-  
17 front expenses to allow manufacturing and industrial  
18 businesses to invest in energy efficiency measures,  
19 onsite clean and renewable energy systems, smart  
20 grid systems, and alternative vehicle fleets by pro-  
21 viding credit support, credit enhancement, secondary  
22 markets, and other support to originators of the fi-  
23 nancial products and sponsors of the financing pro-  
24 grams; and

25 (2) help building owners to invest in measures  
26 and systems that reduce energy costs, in many cases

1 creating a net cost savings that can be realized in  
2 the short-term, and may also allow manufacturing  
3 and industrial business owners to defer capital ex-  
4 penditures, save money to hire new workers, and in-  
5 crease the value, comfort, and sustainability of the  
6 property of the owners.

7 **SEC. 2062. DEFINITIONS.**

8 In this subtitle:

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

14 (2) STATE.—The term “State” means—

15 (A) a State;

16 (B) the District of Columbia;

17 (C) the Commonwealth of Puerto Rico;

18 and

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

21 **SEC. 2063. FINANCING ENERGY EFFICIENT MANUFAC-**  
22 **TURING PROGRAM.**

23 (a) ESTABLISHMENT.—The Secretary shall establish  
24 a program, to be known as the “Financing Energy Effi-  
25 cient Manufacturing Program”, under which the Secretary

1 shall provide grants to States to establish or expand cov-  
2 ered programs.

3 (b) APPLICATIONS.—

4 (1) IN GENERAL.—A State may apply to the  
5 Secretary for a grant under subsection (a) to estab-  
6 lish or expand covered programs.

7 (2) EVALUATION.—The Secretary shall evaluate  
8 applications submitted by States under paragraph  
9 (1) on the basis of—

10 (A) the likelihood that the covered pro-  
11 gram would—

12 (i) be established or expanded; and

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

16 (B) in the case of industrial business effi-  
17 ciency financing initiatives conducted under  
18 subsection (c), evidence of multi-State coopera-  
19 tion and coordination with lenders, financiers,  
20 and owners; and

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

24 (c) MULTI-STATE FACILITATION.—The Secretary  
25 shall consult with States and relevant stakeholders with

1 applicable expertise to establish a process to identify fi-  
2 nancing opportunities for manufacturing and industrial  
3 business with asset portfolios across multiple States.

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

7 (1) leverage private and non-Federal sources of  
8 funding; and

9 (2) aim explicitly to expand the use of energy  
10 efficiency project financing using private sources of  
11 funding.

12 (e) DAVIS-BACON COMPLIANCE.—

13 (1) IN GENERAL.—All laborers and mechanics  
14 employed on projects funded directly by or assisted  
15 in whole or in part by this subtitle shall be paid  
16 wages at rates not less than those prevailing on  
17 projects of a character similar in the locality as de-  
18 termined by the Secretary of Labor in accordance  
19 with subchapter IV of chapter 31 of part A of sub-  
20 title II of title 40, United States Code (commonly  
21 referred to as the “Davis-Bacon Act”).

22 (2) AUTHORITY.—With respect to the labor  
23 standards specified in this subsection, the Secretary  
24 of Labor shall have the authority and functions set  
25 forth in Reorganization Plan Numbered 14 of 1950

1 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of  
2 title 40, United States Code.

3 (f) REPORTS.—

4 (1) IN GENERAL.—Not later than 2 years after  
5 the date of receipt of a grant under this subtitle, a  
6 State shall submit to the Secretary, the Committee  
7 on Energy and Natural Resources of the Senate,  
8 and the Committee on Energy and Commerce of the  
9 House of Representatives a report that describes the  
10 performance of covered programs carried out using  
11 the grant funds.

12 (2) DATA.—

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

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

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

22 (B) DEPARTMENT DATABASES.—The Sec-  
23 retary shall incorporate data described in sub-  
24 paragraph (A) into appropriate databases of the

1 Department, with provisions for the protection  
2 of confidential business data.

3 **SEC. 2064. AUTHORIZATION OF APPROPRIATIONS.**

4 (a) IN GENERAL.—There is authorized to be appro-  
5 priated to carry out this subtitle \$250,000,000, to remain  
6 available until expended.

7 (b) STATE ENERGY OFFICES.—Funds provided to a  
8 State under this subtitle shall be provided to the office  
9 within the State that is responsible for developing the  
10 State energy plan for the State under part D of title III  
11 of the Energy Policy and Conservation Act (42 U.S.C.  
12 6321 et seq).

13 **Subtitle H—21<sup>st</sup> Century Energy**  
14 **Workforce**

15 **SEC. 2101. FINDINGS.**

16 Congress finds that—

17 (1) the energy sector is the third-largest indus-  
18 try in the United States;

19 (2) 1,500,000 new skilled workers will be need-  
20 ed in the energy sector over the next 15 years; and

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

24 **SEC. 2102. DEFINITIONS.**

25 In this subtitle:

1           (1) BOARD.—The term “Board” means the Na-  
2           tional Center of Excellence for the 21<sup>st</sup> Century  
3           Workforce Advisory Board established under section  
4           2103(a).

5           (2) COMMUNITY COLLEGE.—The term “commu-  
6           nity college” means a junior or community college  
7           (as defined in section 312(f) of the Higher Edu-  
8           cation Act of 1965 (20 U.S.C. 1058(f))).

9           (3) PROGRAM.—The term “program” means  
10          the pilot program established under section 2104(a).

11          (4) VETERANS SERVICE ORGANIZATION.—The  
12          term “veterans service organization” means an orga-  
13          nization recognized by the Secretary of Veterans Af-  
14          fairs for the representation of veterans under section  
15          5902 of title 38, United States Code.

16 **SEC. 2103. NATIONAL CENTER OF EXCELLENCE FOR THE**  
17 **21<sup>st</sup> CENTURY WORKFORCE.**

18          (a) IN GENERAL.—The Secretary shall establish a  
19          nationwide advisory board, to be known as the “National  
20          Center of Excellence for the 21<sup>st</sup> Century Workforce Advi-  
21          sory Board”, to foster strategic vision, guidance, and net-  
22          works for the energy industry.

23          (b) REPRESENTATIVES.—The members of the Board  
24          shall consist of energy sector stakeholders, including—

25                (1) representatives of relevant industries;

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

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

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

7           (5) representatives of labor organizations.

8           (c) PURPOSES.—The purposes of the Board are—

9           (1) to support and develop training and science  
10          education programs that—

11           (A) meet the industry and labor needs of  
12          the energy and advanced manufacturing sec-  
13          tors; and

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

17          (2) to align apprenticeship programs and indus-  
18          try certifications to further develop succession plan-  
19          ning in the energy sector;

20          (3) to integrate educational standards to de-  
21          velop foundational skills for elementary and sec-  
22          ondary education and postsecondary education to  
23          create a pipeline between education and career; and



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

4 **SEC. 2104. ENERGY WORKFORCE PILOT GRANT PROGRAM.**

5           (a) IN GENERAL.—Not later than 1 year after the  
6           date of enactment of this Act, the Secretary, in consulta-  
7           tion with the Secretary of Labor and the Secretary of  
8           Education, shall establish a pilot program to award grants  
9           on a competitive basis to eligible entities for job training  
10          programs that lead to an industry-recognized credential.

11          (b) ELIGIBILITY.—To be eligible to receive a grant  
12          under this section, an entity shall be a public or nonprofit  
13          organization, or a consortium of such organizations,  
14          that—

15                (1) includes an advisory board of proportional  
16                participation, as determined by the Secretary, of rel-  
17                evant organizations, including—

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

20                    (B) labor organizations; and

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

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

1           (3) demonstrates the ability to recruit and sup-  
2           port individuals who plan to work in the energy in-  
3           dustry in the successful completion of relevant job  
4           training and education programs; and

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

8           (c) APPLICATIONS.—Eligible entities desiring a grant  
9           under this section shall submit to the Secretary an appli-  
10          cation at such time, in such manner, and containing such  
11          information as the Secretary may require.

12          (d) PRIORITY.—In selecting eligible entities to receive  
13          grants under this section, the Secretary shall prioritize ap-  
14          plicants that—

15               (1) house the job training and education pro-  
16               grams in—

17                       (A) a community college or institution of  
18                       higher education that includes basic science and  
19                       math education in the curriculum of the com-  
20                       munity college, institution of higher education;  
21                       or

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

24               (2) work with the Secretary of Defense or vet-  
25               erans service organizations to transition members of

1 the Armed Forces and veterans to careers in the en-  
2 ergy sector;

3 (3) apply as a State or regional consortia to le-  
4 verage best practices already available in the State  
5 or region in which the community college or institu-  
6 tion of higher education is located;

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

9 (5) include an apprenticeship program reg-  
10 istered with the Department of Labor as part of the  
11 job training and education program;

12 (6) develop a mentorship program for energy  
13 professionals and elementary and secondary edu-  
14 cation students;

15 (7) provide support services and career coach-  
16 ing;

17 (8) provide introductory energy workforce devel-  
18 opment and advanced manufacturing training; or

19 (9) work with an Indian tribe (as defined in  
20 section 4 of the Indian Self-Determination and Edu-  
21 cation Assistance Act (25 U.S.C. 450b)).

22 (e) ADDITIONAL CONSIDERATION.—In making  
23 grants under this section, the Secretary shall consider re-  
24 gional diversity.

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

5           (g) LIMITATIONS ON AMOUNT OF GRANT.—The  
6 amount of a grant for any 1 year shall not exceed  
7 \$1,000,000.

8           (h) COST SHARING.—

9               (1) FEDERAL SHARE.—The Federal share of  
10 the cost of a job training and education program  
11 carried out using a grant under this section shall be  
12 not greater than 65 percent.

13               (2) NON-FEDERAL SHARE.—

14                   (A) IN GENERAL.—The non-Federal share  
15 of the cost of a job training and education pro-  
16 gram carried out using a grant under this sec-  
17 tion shall consist of not less than 50 percent  
18 cash.

19                   (B) LIMITATION.—Not greater than 50  
20 percent of the non-Federal contribution of the  
21 total cost of a job training and education pro-  
22 gram carried out using a grant under this sec-  
23 tion shall be in the form of in-kind contribu-  
24 tions of goods or services fairly valued.

1           (i) REDUCTION OF DUPLICATION.—Prior to submit-  
2     ting an application for a grant under this section, each  
3     applicant shall consult with the applicable agencies of the  
4     Federal Government and coordinate the proposed activi-  
5     ties of the applicant with existing State and local pro-  
6     grams.

7           (j) TECHNICAL ASSISTANCE.—The Secretary shall  
8     provide technical assistance and capacity building to na-  
9     tional and State energy partnerships, including the enti-  
10    ties described in subsection (b)(1), to leverage the existing  
11    job training and education programs of the Department.

12          (k) REPORT.—The Secretary shall submit to Con-  
13    gress and make publicly available on the website of the  
14    Department an annual report on the program established  
15    under this section, including a description of—

16            (1) the entities receiving grants;

17            (2) the activities carried out using the grants;

18            (3) best practices used to leverage the invest-  
19    ment of the Federal Government;

20            (4) the rate of employment for participants  
21    after completing a job training and education pro-  
22    gram carried out using a grant; and

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

1 (l) AUTHORIZATION OF APPROPRIATIONS.—There is  
2 authorized to be appropriated to carry out this section  
3 \$20,000,000 for each of fiscal years 2016 through 2019.

## 4 **Subtitle I—Solar Installations**

### 5 **SEC. 2111. LOAN AND GRANT PROGRAM FOR SOLAR IN-** 6 **STALLATIONS IN LOW-INCOME AND UNDER-** 7 **SERVED AREAS.**

8 (a) DEFINITIONS.—In this section:

9 (1) ADMINISTRATIVE EXPENSES.—The term  
10 “administrative expenses” has such meaning as may  
11 be established by the Secretary.

12 (2) COMMUNITY SOLAR FACILITY.—The term  
13 “community solar facility” means a community-  
14 based distributed photovoltaic solar electricity gener-  
15 ating facility that, as determined by the Secretary—

16 (A) is owned by a subscriber organization;

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

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

22 (D) reserves not less than 25 percent of  
23 the quantity of electricity generated by the fa-  
24 cility for low-income households that are sub-  
25 sscribers to the facility.



1 Rural Development Act (7 U.S.C. 1991(a));

2 and

3 (E) any other national or regional entity

4 that—

5 (i) deploys a safe, high-quality photo-

6 voltaic solar electricity generating facility

7 for consumers under a model that maxi-

8 mizes energy savings to those consumers;

9 and

10 (ii) has experience, as determined by

11 the Secretary, installing solar systems

12 using a job training or community volun-

13 teer-based installation model.

14 (6) LOW-INCOME HOUSEHOLD.—The term

15 “low-income household” means a household with an

16 income equal to 80 percent or less of the applicable

17 area median income, as defined for the applicable

18 year by the Secretary of Housing and Urban Devel-

19 opment.

20 (7) MULTI-FAMILY AFFORDABLE HOUSING.—

21 The term “multi-family affordable housing” means

22 any federally subsidized affordable housing complex

23 in which at least 50 percent of the units are reserved

24 for low-income households.





1 physical location shall be within the geo-  
2 graphical limits allowed for a subscriber of  
3 the applicable community solar facility;  
4 and

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

8 (10) SUBSCRIPTION.—The term “subscription”  
9 means a share in the capacity, or a proportional in-  
10 terest in the solar electricity generation, of a com-  
11 munity solar facility.

12 (11) UNDERSERVED AREA.—The term “under-  
13 served area” means a geographical area with low or  
14 no photovoltaic solar deployment, as determined by  
15 the Secretary.

16 (b) ESTABLISHMENT OF LOAN AND GRANT PRO-  
17 GRAM.—

18 (1) IN GENERAL.—The Secretary shall establish  
19 a program under which the Secretary shall provide  
20 loans and grants to grant-eligible households and  
21 loan-eligible entities for use in accordance with this  
22 section.

23 (2) FUNDING.—

24 (A) IN GENERAL.—Subject to the avail-  
25 ability of appropriations, the Secretary shall

1           make grants and issue loans in accordance with  
2           this subsection.

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

8                     (i) community solar facilities; or

9                     (ii) multi-family affordable housing  
10           solar installations.

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

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

18                     or

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

21           (D) INCREASE IN GRANT AMOUNT.—Not-  
22           withstanding subparagraph (A), if the Secretary  
23           determines that more than 50 percent of the  
24           amounts described in that subparagraph are  
25           necessary during any of fiscal years 2016

1 through 2030 to provide grants to encourage  
2 innovative financing and installation models to  
3 reach underserved markets, the Secretary may  
4 use more than 50 percent of those amounts to  
5 provide those grants.

6 (3) GOALS AND ACCOUNTABILITY.—

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

11 (i) the assistance provided under this  
12 subsection is used to facilitate and encour-  
13 age innovative solar installation and fi-  
14 nancing models, under which the recipients  
15 develop and install photovoltaic solar elec-  
16 tricity generating facilities that provide sig-  
17 nificant savings to low-income households  
18 while providing job training or community  
19 engagement opportunities with respect to  
20 each solar system installed;

21 (ii) loan and grant recipients shall—

22 (I) have installed not less than  
23 600 kilowatts of photovoltaic solar en-  
24 ergy during the 2-year period pre-  
25 ceding the date on which the loan or

1 grant is provided to ensure consumer  
2 protection; or

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

6 (aa) has not less than 2  
7 years of experience deploying  
8 solar photovoltaic systems for  
9 low-income households in a man-  
10 ner that maximizes the savings  
11 benefits of solar access; and

12 (bb) was primarily respon-  
13 sible for the installation of at  
14 least 2 megawatts of solar energy  
15 during the 2-year period pre-  
16 ceding the date on which the loan  
17 or grant is provided;

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

24 (iv) the provision of assistance under  
25 this subsection establishes and fosters a

1 partnership between the Federal Govern-  
2 ment and grant-eligible households and  
3 loan-eligible entities, resulting in efficient  
4 development of solar installations with—

5 (I) minimal governmental inter-  
6 vention;

7 (II) limited governmental regula-  
8 tion; and

9 (III) significant involvement by  
10 nonprofit and private entities;

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

13 (I) shall include job training; and

14 (II) may include community par-  
15 ticipation in which job trainees and  
16 volunteers assist in the development of  
17 solar projects;

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

20 (I) areas with low photovoltaic  
21 penetration;

22 (II) rural areas;

23 (III) Indian tribal areas; and

1 (IV) other underserved areas, in-  
2 cluding Alaskan Native and Appa-  
3 lachian communities;

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

9 (viii) to the maximum extent prac-  
10 ticable, solar installation activities for  
11 which assistance is provided under this  
12 section leverage, or connect grant-eligible  
13 households to, federally or locally sub-  
14 sidized weatherization and energy effi-  
15 ciency efforts that meet or exceed local en-  
16 ergy efficiency standards.

17 (B) DETERMINATION.—If, at any time, the  
18 Secretary determines that the goals described in  
19 this paragraph cannot be met by providing as-  
20 sistance in accordance with this subsection, the  
21 Secretary shall immediately submit to the ap-  
22 propriate committees of Congress a written no-  
23 tice of that determination, including any pro-  
24 posed changes necessary to achieve the goals  
25 under this paragraph.

1 (4) COMMUNITY SOLAR FACILITIES.—

2 (A) IN GENERAL.—A community solar fa-  
3 cility may use a loan provided under this sub-  
4 section only to offset the costs of generation  
5 and provision of solar energy to low-income  
6 households that are subscribers of the commu-  
7 nity solar facility.

8 (B) TRANSFER AND ASSIGNMENT OF SUB-  
9 SCRIPTIONS.—A subscription to a community  
10 solar facility that receives assistance under this  
11 subsection may be transferred or assigned by  
12 the subscriber to—

13 (i) any subscriber organization; or

14 (ii) any individual or entity who quali-  
15 fies to be a subscriber to that community  
16 solar facility.

17 (C) TREATMENT.—

18 (i) IN GENERAL.—No owner, oper-  
19 ator, or subscriber of a community solar  
20 facility that receives assistance under this  
21 subsection shall be subject to regulation by  
22 the Federal Energy Regulatory Commis-  
23 sion solely as a result of an interest in the  
24 community solar facility.





1 (i) enter into a grant or loan agree-  
2 ment, as applicable, under subsection (d);  
3 and

4 (ii) has obtained financial commit-  
5 ments (or has demonstrated the capacity  
6 to obtain financial commitments) necessary  
7 to comply with that agreement;

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

15 (C) to the maximum extent practicable, ex-  
16 pand photovoltaic solar energy availability to—

17 (i) geographical areas, throughout the  
18 United States and within States, terri-  
19 tories, and Indian tribal land, with—

20 (I) low photovoltaic solar pene-  
21 tration; or

22 (II) areas with a higher cost bur-  
23 den with respect to the deployment or  
24 installation of photovoltaic solar elec-  
25 tricity generating facilities;

- 1 (ii) rural communities;  
2 (iii) Indian tribes; and  
3 (iv) other underserved areas, including  
4 Appalachian and Alaska Native commu-  
5 nities;

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

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

14 (d) LOAN AND GRANT AGREEMENTS.—

15 (1) IN GENERAL.—As a condition of receiving a  
16 loan or grant under this section, a grant-eligible  
17 household or loan-eligible entity shall enter into a  
18 loan or grant agreement, as applicable, with the Sec-  
19 retary.

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

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

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

4 (ii) to install such number of solar  
5 systems with such defined capacity target  
6 (expressed in megawatts) as may be estab-  
7 lished by the Secretary , taking into con-  
8 sideration the costs associated with car-  
9 rying out loan or grant obligations in the  
10 areas in which the solar systems will be de-  
11 veloped;

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

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

21 (B) require the Secretary to rescind any  
22 amounts provided to the grant-eligible house-  
23 hold or loan-eligible entity that are not used  
24 during the 2-year period beginning on the date  
25 on which the amounts are initially distributed

1 to the grant-eligible household or loan-eligible  
2 entity, except in any case in which the grant-  
3 eligible household or loan-eligible entity has  
4 demonstrated to the satisfaction of the Sec-  
5 retary that a longer period, not to exceed 3  
6 years after the date of initial distribution, is  
7 necessary to deliver proposed services;

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

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

14 (ii) a payout time that maximizes the  
15 savings to customers during the effective  
16 period of the agreement; and

17 (D) contain such other terms as the Sec-  
18 retary may require to ensure compliance with  
19 the requirements of this section.

20 (e) USE.—A grant-eligible household or loan-eligible  
21 entity shall use a loan or grant provided under this section  
22 only for the following activities, for the purpose of devel-  
23 oping new photovoltaic solar projects in the United States  
24 for low-income households and individuals who otherwise

1 would likely be unable to afford or purchase photovoltaic  
2 solar systems:

3 (1) PHOTOVOLTAIC SOLAR EQUIPMENT AND IN-  
4 STALLATION.—To pay the costs of—

5 (A) solar equipment, including only photo-  
6 voltaic solar equipment and storage and all  
7 hardware or software components relating to  
8 safely producing, monitoring, and connecting  
9 the system to the electric grid or onsite storage;  
10 and

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

14 (2) JOB TRAINING.—To fund onsite job train-  
15 ing and community or volunteer engagement, includ-  
16 ing—

17 (A) only job training costs directly associ-  
18 ated with the solar projects funded under this  
19 section; and

20 (B) job training opportunities that may  
21 cover the full range of the solar value chain,  
22 such as marketing and outreach, customer ac-  
23 quisition, system design, and installation posi-  
24 tions.

1           (3) DEPLOYMENT SUPPORT.—To fund entities  
2           that have a demonstrated ability, as determined by  
3           the Secretary—

4                   (A) to advise State and local entities re-  
5                   garding low-income solar policy, regulatory, and  
6                   program design to continue and expand the  
7                   work of the entities;

8                   (B) to foster community outreach and edu-  
9                   cation regarding the benefits of photovoltaic  
10                  solar energy for low-income and disadvantaged  
11                  communities; or

12                  (C) to provide apprenticeship program op-  
13                  portunities registered and approved by—

14                           (i) the Office of Apprenticeship of the  
15                           Department of Labor pursuant to part 29  
16                           of title 29, Code of Federal Regulations (or  
17                           successor regulations); or

18                           (ii) a State Apprenticeship Agency  
19                           recognized by that Office.

20           (4) ADMINISTRATION.—To pay the administra-  
21           tive expenses of the grant-eligible household or loan-  
22           eligible entity, including preproject feasibility efforts,  
23           in carrying out the duties of the Secretary associ-  
24           ated with delivering proposed services, subject to the  
25           requirement that not more than 15 percent of the

1 total amount of the assistance provided to the grant-  
2 eligible household or loan-eligible entity under this  
3 section may be used for administrative expenses.

4 (f) COMPLIANCE.—

5 (1) RECORDS AND AUDITS.—During the period  
6 beginning on the date of initial distribution to a  
7 grant-eligible household or loan-eligible entity of a  
8 loan or grant under this section and ending on the  
9 termination date of the loan or grant under sub-  
10 section (g), the grant-eligible household or loan-eli-  
11 gible entity shall maintain such records and adopt  
12 such administrative practices as the Secretary may  
13 require to ensure compliance with the requirements  
14 of this section and the applicable loan or grant  
15 agreement.

16 (2) DETERMINATION BY SECRETARY.—If the  
17 Secretary determines that a grant-eligible household  
18 or loan-eligible entity that receives a grant or loan  
19 under this section has not, during the 2-year period  
20 beginning on the date of initial distribution to the  
21 grant-eligible household or loan-eligible entity of the  
22 assistance (or such longer period as is established  
23 under subsection (d)(2)(B)), substantially fulfilled  
24 the obligations of the grant-eligible household or



1 loan-eligible entity under the applicable loan or  
2 grant agreement, the Secretary shall—

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

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

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

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

16 (2) returned to the Secretary.

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

22 (i) FUNDING.—There is authorized to be appro-  
23 priated to the Secretary to carry out this section  
24 \$200,000,000 for each of fiscal years 2016 through 2030,  
25 to remain available until expended.

1     **Subtitle J—Local Energy Supply**  
2                     **and Resiliency Act**

3     **SEC. 2121. DEFINITIONS.**

4         In this subtitle:

5             (1) COMBINED HEAT AND POWER SYSTEM.—

6         The term “combined heat and power system” means  
7         generation of electric energy and heat in a single, in-  
8         tegrated system that meets the efficiency criteria in  
9         clauses (ii) and (iii) of section 48(c)(3)(A) of the In-  
10         ternal Revenue Code of 1986, under which heat that  
11         is conventionally rejected is recovered and used to  
12         meet thermal energy requirements.

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

17                 (A) changes in the price of electricity over  
18                 time; or

19                 (B) incentive payments designed to induce  
20                 lower electricity use at times of high wholesale  
21                 market prices or when system reliability is jeop-  
22                 ardized.

23             (3) DISTRIBUTED ENERGY.—The term “distrib-  
24         uted energy” means energy sources and systems  
25         that—

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

4 (B) generate electricity using a combined  
5 heat and power system;

6 (C) distribute electricity in microgrids;

7 (D) store electric or thermal energy; or

8 (E) distribute thermal energy or transfer  
9 thermal energy to building heating and cooling  
10 systems through a district energy system.

11 (4) DISTRICT ENERGY SYSTEM.—The term  
12 “district energy system” means a system that pro-  
13 vides thermal energy to buildings and other energy  
14 consumers from 1 or more plants to individual build-  
15 ings to provide space heating, air conditioning, do-  
16 mestic hot water, industrial process energy, and  
17 other end uses.

18 (5) ISLANDING.—The term “islanding” means  
19 a distributed generator or energy storage device con-  
20 tinuing to power a location in the absence of electric  
21 power from the primary source.

22 (6) LOAN.—The term “loan” has the meaning  
23 given the term “direct loan” in section 502 of the  
24 Federal Credit Reform Act of 1990 (2 U.S.C. 661a).

1           (7) MICROGRID.—The term “microgrid” means  
2           an integrated energy system consisting of inter-  
3           connected loads and distributed energy resources, in-  
4           cluding generators and energy storage devices, with-  
5           in clearly defined electrical boundaries that—

6                   (A) acts as a single controllable entity with  
7                   respect to the grid; and

8                   (B) can connect and disconnect from the  
9                   grid to operate in both grid-connected mode  
10                  and island mode.

11           (8) RENEWABLE ENERGY SOURCE.—The term  
12           “renewable energy source” includes—

13                   (A) biomass;

14                   (B) geothermal energy;

15                   (C) hydropower;

16                   (D) landfill gas;

17                   (E) municipal solid waste;

18                   (F) ocean (including tidal, wave, current,  
19                  and thermal) energy;

20                   (G) organic waste;

21                   (H) photosynthetic processes;

22                   (I) photovoltaic energy;

23                   (J) solar energy; and

24                   (K) wind.

1           (9) RENEWABLE THERMAL ENERGY.—The term  
2           “renewable thermal energy” means heating or cool-  
3           ing energy derived from a renewable energy re-  
4           source.

5           (10) THERMAL ENERGY.—The term “thermal  
6           energy” means—

7                   (A) heating energy in the form of hot  
8                   water or steam that is used to provide space  
9                   heating, domestic hot water, or process heat; or

10                   (B) cooling energy in the form of chilled  
11                   water, ice, or other media that is used to pro-  
12                   vide air conditioning, or process cooling.

13           (11) WASTE THERMAL ENERGY.—The term  
14           “waste thermal energy” means energy that—

15                   (A) is contained in—

16                           (i) exhaust gases, exhaust steam, con-  
17                           denser water, jacket cooling heat, or lubri-  
18                           cating oil in power generation systems;

19                           (ii) exhaust heat, hot liquids, or flared  
20                           gas from any industrial process;

21                           (iii) waste gas or industrial tail gas  
22                           that would otherwise be flared, incinerated,  
23                           or vented;

1 (iv) a pressure drop in any gas, ex-  
2 cluding any pressure drop to a condenser  
3 that subsequently vents the resulting heat;

4 (v) condenser water from chilled water  
5 or refrigeration plants; or

6 (vi) any other form of waste energy,  
7 as determined by the Secretary; and

8 (B)(i) in the case of an existing facility, is  
9 not being used; or

10 (ii) in the case of a new facility, is not con-  
11 ventionally used in comparable systems.

12 **SEC. 2122. DISTRIBUTED ENERGY LOAN PROGRAM.**

13 (a) LOAN PROGRAM.—

14 (1) IN GENERAL.—Subject to the provisions of  
15 this subsection and subsections (b) and (c), the Sec-  
16 retary shall establish a program to provide to eligible  
17 entities—

18 (A) loans for the deployment of distributed  
19 energy systems in a specific project; and

20 (B) loans to provide funding for programs  
21 to finance the deployment of multiple distrib-  
22 uted energy systems through a revolving loan  
23 fund, credit enhancement program, or other fi-  
24 nancial assistance program.

1           (2) ELIGIBILITY.—Entities eligible to receive a  
2           loan under paragraph (1) include—

3                   (A) a State, territory, or possession of the  
4           United States;

5                   (B) a State energy office;

6                   (C) a tribal organization (as defined in sec-  
7           tion 4 of the Indian Self-Determination and  
8           Education Assistance Act (25 U.S.C. 450b));

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

12                  (E) an electric utility, including—

13                           (i) a rural electric cooperative;

14                           (ii) a municipally owned electric util-  
15          ity; and

16                           (iii) an investor-owned utility.

17           (3) SELECTION REQUIREMENTS.—In selecting  
18          eligible entities to receive loans under this section,  
19          the Secretary shall, to the maximum extent prac-  
20          ticable, ensure—

21                   (A) regional diversity among eligible enti-  
22          ties to receive loans under this section, includ-  
23          ing participation by rural States and small  
24          States; and

1 (B) that specific projects selected for  
2 loans—

3 (i) expand on the existing technology  
4 deployment program of the Department of  
5 Energy; and

6 (ii) are designed to achieve 1 or more  
7 of the objectives described in paragraph  
8 (4).

9 (4) OBJECTIVES.—Each deployment selected  
10 for a loan under paragraph (1) shall include 1 or  
11 more of the following objectives:

12 (A) Improved security and resiliency of en-  
13 ergy supply in the event of disruptions caused  
14 by extreme weather events, grid equipment or  
15 software failure, or terrorist acts.

16 (B) Implementation of distributed energy  
17 in order to increase use of local renewable en-  
18 ergy resources and waste thermal energy  
19 sources.

20 (C) Enhanced feasibility of microgrids, de-  
21 mand response, or islanding;

22 (D) Enhanced management of peak loads  
23 for consumers and the grid.

24 (E) Enhanced reliability in rural areas, in-  
25 cluding high energy cost rural areas.



1           (5) RESTRICTION ON USE OF FUNDS.—Any eli-  
2           gible entity that receives a loan under paragraph (1)  
3           may only use the loan to fund programs relating to  
4           the deployment of distributed energy systems.

5           (b) LOAN TERMS AND CONDITIONS.—

6           (1) TERMS AND CONDITIONS.—Notwithstanding  
7           any other provision of law, in providing a loan under  
8           this section, the Secretary shall provide the loan on  
9           such terms and conditions as the Secretary deter-  
10          mines, after consultation with the Secretary of the  
11          Treasury, in accordance with this section.

12          (2) SPECIFIC APPROPRIATION.—No loan shall  
13          be made unless an appropriation for the full amount  
14          of the loan has been specifically provided for that  
15          purpose.

16          (3) REPAYMENT.—No loan shall be made un-  
17          less the Secretary determines that there is reason-  
18          able prospect of repayment of the principal and in-  
19          terest by the borrower of the loan.

20          (4) INTEREST RATE.—A loan provided under  
21          this section shall bear interest at a fixed rate that  
22          is equal or approximately equal, in the determination  
23          of the Secretary, to the interest rate for Treasury  
24          securities of comparable maturity.

1           (5) TERM.—The term of the loan shall require  
2 full repayment over a period not to exceed the lesser  
3 of—

4                   (A) 20 years; or

5                   (B) 90 percent of the projected useful life  
6 of the physical asset to be financed by the loan  
7 (as determined by the Secretary).

8           (6) USE OF PAYMENTS.—Payments of principal  
9 and interest on the loan shall—

10                   (A) be retained by the Secretary to support  
11 energy research and development activities; and

12                   (B) remain available until expended, sub-  
13 ject to such conditions as are contained in an-  
14 nual appropriations Acts.

15           (7) NO PENALTY ON EARLY REPAYMENT.—The  
16 Secretary may not assess any penalty for early re-  
17 payment of a loan provided under this section.

18           (8) RETURN OF UNUSED PORTION.—In order to  
19 receive a loan under this section, an eligible entity  
20 shall agree to return to the general fund of the  
21 Treasury any portion of the loan amount that is un-  
22 used by the eligible entity within a reasonable period  
23 of time after the date of the disbursement of the  
24 loan, as determined by the Secretary.

1           (9) COMPARABLE WAGE RATES.—Each laborer  
2           and mechanic employed by a contractor or subcon-  
3           tractor in performance of construction work fi-  
4           nanced, in whole or in part, by the loan shall be paid  
5           wages at rates not less than the rates prevailing on  
6           similar construction in the locality as determined by  
7           the Secretary of Labor in accordance with sub-  
8           chapter IV of chapter 31 of title 40, United States  
9           Code.

10          (c) RULES AND PROCEDURES; DISBURSEMENT OF  
11          LOANS.—

12           (1) RULES AND PROCEDURES.—Not later than  
13           180 days after the date of enactment of this Act, the  
14           Secretary shall adopt rules and procedures for car-  
15           rying out the loan program under subsection (a).

16           (2) DISBURSEMENT OF LOANS.—Not later than  
17           1 year after the date on which the rules and proce-  
18           dures under paragraph (1) are established, the Sec-  
19           retary shall disburse the initial loans provided under  
20           this section.

21           (d) REPORTS.—Not later than 2 years after the date  
22           of receipt of the loan, and annually thereafter for the term  
23           of the loan, an eligible entity that receives a loan under  
24           this section shall submit to the Secretary a report describ-  
25           ing the performance of each program and activity carried

1 out using the loan, including itemized loan performance  
2 data.

3 (e) AUTHORIZATION OF APPROPRIATIONS.—There  
4 are authorized to be appropriated to carry out this section  
5 such sums as are necessary.

6 **SEC. 2123. TECHNICAL ASSISTANCE AND GRANT PROGRAM.**

7 (a) ESTABLISHMENT.—

8 (1) IN GENERAL.—The Secretary shall establish  
9 a technical assistance and grant program (referred  
10 to in this section as the “program”)—

11 (A) to disseminate information and provide  
12 technical assistance directly to eligible entities  
13 so the eligible entities can identify, evaluate,  
14 plan, and design distributed energy systems;  
15 and

16 (B) to make grants to eligible entities so  
17 that the eligible entities may contract to obtain  
18 technical assistance to identify, evaluate, plan,  
19 and design distributed energy systems.

20 (2) TECHNICAL ASSISTANCE.—The technical  
21 assistance described in paragraph (1) shall include  
22 assistance with 1 or more of the following activities  
23 relating to distributed energy systems:

24 (A) Identification of opportunities to use  
25 distributed energy systems.

1 (B) Assessment of technical and economic  
2 characteristics.

3 (C) Utility interconnection.

4 (D) Permitting and siting issues.

5 (E) Business planning and financial anal-  
6 ysis.

7 (F) Engineering design.

8 (3) INFORMATION DISSEMINATION.—The infor-  
9 mation disseminated under paragraph (1)(A) shall  
10 include—

11 (A) information relating to the topics de-  
12 scribed in paragraph (2), including case studies  
13 of successful examples;

14 (B) computer software and databases for  
15 assessment, design, and operation and mainte-  
16 nance of distributed energy systems; and

17 (C) public databases that track the oper-  
18 ation and deployment of existing and planned  
19 distributed energy systems.

20 (b) ELIGIBILITY.—Any nonprofit or for-profit entity  
21 shall be eligible to receive technical assistance and grants  
22 under the program.

23 (c) APPLICATIONS.—

24 (1) IN GENERAL.—An eligible entity desiring  
25 technical assistance or grants under the program

1 shall submit to the Secretary an application at such  
2 time, in such manner, and containing such informa-  
3 tion as the Secretary may require.

4 (2) APPLICATION PROCESS.—The Secretary  
5 shall seek applications for technical assistance and  
6 grants under the program—

7 (A) on a competitive basis; and

8 (B) on a periodic basis, but not less fre-  
9 quently than once every 12 months.

10 (3) PRIORITIES.—In selecting eligible entities  
11 for technical assistance and grants under the pro-  
12 gram, the Secretary shall give priority to eligible en-  
13 tities with projects that have the greatest potential  
14 for—

15 (A) facilitating the use of renewable energy  
16 resources;

17 (B) strengthening the reliability and resil-  
18 iency of energy infrastructure to the impact of  
19 extreme weather events, power grid failures,  
20 and interruptions in supply of fossil fuels;

21 (C) improving the feasibility of microgrids  
22 or islanding, particularly in rural areas, includ-  
23 ing high energy cost rural areas;

1 (D) minimizing environmental impact, in-  
2 cluding regulated air pollutants and greenhouse  
3 gas emissions; and

4 (E) maximizing local job creation.

5 (d) GRANTS.—On application by an eligible entity,  
6 the Secretary may award grants to the eligible entity to  
7 provide funds to cover not more than—

8 (1) 100 percent of the costs of the initial as-  
9 sessment to identify opportunities;

10 (2) 75 percent of the cost of feasibility studies  
11 to assess the potential for the implementation;

12 (3) 60 percent of the cost of guidance on over-  
13 coming barriers to implementation, including finan-  
14 cial, contracting, siting, and permitting issues; and

15 (4) 45 percent of the cost of detailed engineer-  
16 ing.

17 (e) RULES AND PROCEDURES.—

18 (1) RULES.—Not later than 180 days after the  
19 date of enactment of this Act, the Secretary shall  
20 adopt rules and procedures for carrying out the pro-  
21 gram.

22 (2) GRANTS.—Not later than 120 days after  
23 the date of issuance of the rules and procedures for  
24 the program, the Secretary shall issue grants under  
25 this subtitle.

1 (f) REPORTS.—The Secretary shall submit to Con-  
2 gress and make available to the public—

3 (1) not less frequently than once every 2 years,  
4 a report describing the performance of the program  
5 under this section, including a synthesis and analysis  
6 of the information provided in the reports submitted  
7 to the Secretary under section 2122(d); and

8 (2) on termination of the program under this  
9 section, an assessment of the success of, and edu-  
10 cation provided by, the measures carried out by eli-  
11 gible entities during the term of the program.

12 (g) AUTHORIZATION OF APPROPRIATIONS.—There is  
13 authorized to be appropriated to carry out this section  
14 \$250,000,000 for the period of fiscal years 2016 through  
15 2020, to remain available until expended.

## 16 **Subtitle K—Geothermal Energy** 17 **Opportunities**

### 18 **SEC. 2131. NATIONAL GOALS FOR PRODUCTION AND SITE** 19 **IDENTIFICATION.**

20 It is the sense of Congress that, not later than 10  
21 years after the date of enactment of this Act—

22 (1) the Secretary of the Interior should seek to  
23 have approved more than 15,000 megawatts of new  
24 geothermal energy capacity on public land across a



1 geographically diverse set of States using the full  
2 range of available technologies; and

3 (2) the Director of the Geological Survey and  
4 the Secretary of Energy should identify sites capable  
5 of producing a total of 50,000 megawatts of geo-  
6 thermal power, using the full range of available tech-  
7 nologies.

8 **SEC. 2132. PRIORITY AREAS FOR DEVELOPMENT ON FED-**  
9 **ERAL LAND.**

10 The Director of the Bureau of Land Management,  
11 in consultation with other appropriate Federal officials,  
12 shall—

13 (1) identify high-priority areas for new geo-  
14 thermal development; and

15 (2) take any actions the Director determines  
16 necessary to facilitate that development, consistent  
17 with applicable laws.

18 **SEC. 2133. FACILITATION OF COPRODUCTION OF GEO-**  
19 **THERMAL ENERGY ON OIL AND GAS LEASES.**

20 Section 4(b) of the Geothermal Steam Act of 1970  
21 (30 U.S.C. 1003(b)) is amended by adding at the end the  
22 following:

23 “(4) LAND SUBJECT TO OIL AND GAS LEASE.—  
24 Land under an oil and gas lease issued pursuant to  
25 the Mineral Leasing Act (30 U.S.C. 181 et seq.) or

1 the Mineral Leasing Act for Acquired Lands (30  
2 U.S.C. 351 et seq.) that is subject to an approved  
3 application for permit to drill and from which oil  
4 and gas production is occurring may be available for  
5 noncompetitive leasing under this section to the  
6 holder of the oil and gas lease—

7 “(A) on a determination that—

8 “(i) geothermal energy will be pro-  
9 duced from a well producing or capable of  
10 producing oil and gas; and

11 “(ii) national energy security will be  
12 improved by the issuance of such a lease;  
13 and

14 “(B) to provide for the coproduction of  
15 geothermal energy with oil and gas.”.

16 **SEC. 2134. COST-SHARED EXPLORATION.**

17 (a) IN GENERAL.—To promote the goals described  
18 in section 2131, the Secretary may conduct a federally  
19 funded program of cost-shared drilling with industry part-  
20 ners—

21 (1) to explore and document new geothermal re-  
22 sources in the United States; and

23 (2) to develop improved tools and methods for  
24 geothermal resource identification and extraction,  
25 with the goal of achieving material reductions in the

1 cost of exploration with a corresponding increase in  
2 the likelihood of drilling success.

3 (b) GRANTS.—

4 (1) IN GENERAL.—To carry out the program  
5 described in subsection (a), the Secretary may award  
6 cost-share grants on a competitive and merit basis  
7 to eligible applicants to support exploration drilling  
8 and related activities.

9 (2) PROJECT CRITERIA.—In selecting appli-  
10 cants to receive grants under paragraph (1), the  
11 Secretary shall—

12 (A) give preference to applicants proposing  
13 projects located in a variety of geological and  
14 geographical settings with previously unex-  
15 plored, underexplored, or unproven geothermal  
16 resources; and

17 (B) consider—

18 (i) the potential that the unproven  
19 geothermal resources would be explored  
20 and developed under the proposed project;

21 (ii) the expertise and experience of an  
22 applicant in developing geothermal re-  
23 sources; and

1 (iii) the contribution the proposed  
2 project would make toward meeting the  
3 goals described in section 2131.

4 (c) DATA SHARING.—

5 (1) IN GENERAL.—Data from all exploratory  
6 wells that are carried out under the program de-  
7 scribed in subsection (a) shall be provided to the  
8 Secretary and the Secretary of the Interior for—

9 (A) use in mapping national geothermal  
10 resources; and

11 (B) other purposes, including—

12 (i) subsurface geological data;

13 (ii) metadata;

14 (iii) borehole temperature data; and

15 (iv) inclusion in the National Geo-  
16 thermal Data System of the Department.

17 (2) SHARING OF CONFIDENTIAL DATA.—Not  
18 later than 2 years after the date of enactment of  
19 this Act, confidential data from all exploratory wells  
20 that are carried out under the program described in  
21 subsection (a) shall be provided to the Secretary and  
22 the Secretary of the Interior for the purposes de-  
23 scribed in subparagraphs (A) and (B) of paragraph  
24 (1), to be available for a period of time to be deter-

1       mined by the Secretary and the Secretary of the In-  
2       terior.

3       **SEC. 2135. USE OF GEOTHERMAL LEASE REVENUES.**

4       (a) AMOUNTS DEPOSITED.—Notwithstanding any  
5       other provision of law, beginning in the first full fiscal year  
6       after the date of enactment of this Act, any amounts re-  
7       ceived by the United States as rentals, royalties, and other  
8       payments required under leases pursuant to the Geo-  
9       thermal Steam Act of 1970 (30 U.S.C. 1001 et seq.) (ex-  
10      cluding funds required to be paid to State and county gov-  
11      ernments) and from new geothermal leases issued after  
12      the date of enactment of this Act shall be deposited into  
13      a separate account in the Treasury.

14      (b) USE OF DEPOSITS.—Amounts deposited under  
15      subsection (a) shall be available to the Secretary for ex-  
16      penditure, without further appropriation or fiscal year lim-  
17      itation, to carry out section 2134.

18      (c) TRANSFER OF FUNDS.—To promote the goals de-  
19      scribed in section 2131, the Secretary may authorize the  
20      expenditure or transfer of any funds that are necessary  
21      to other cooperating Federal agencies.

1 **SEC. 2136. NONCOMPETITIVE LEASING OF ADJOINING**  
2 **AREAS FOR DEVELOPMENT OF GEOTHERMAL**  
3 **RESOURCES.**

4 Section 4(b) of the Geothermal Steam Act of 1970  
5 (30 U.S.C. 1003(b)) (as amended by section 2133) is  
6 amended by adding at the end the following:

7 “(5) ADJOINING LAND.—

8 “(A) DEFINITIONS.—In this paragraph:

9 “(i) FAIR MARKET VALUE PER  
10 ACRE.—The term ‘fair market value per  
11 acre’ means a dollar amount per acre  
12 that—

13 “(I) except as provided in this  
14 clause, shall be equal to the market  
15 value per acre (taking into account  
16 the determination under subparagraph  
17 (B)(iii) regarding a valid discovery on  
18 the adjoining land), as determined by  
19 the Secretary under regulations issued  
20 under this paragraph;

21 “(II) shall be determined by the  
22 Secretary with respect to a lease  
23 under this paragraph, by not later  
24 than the end of the 180-day period  
25 beginning on the date the Secretary

1 receives an application for the lease;

2 and

3 “(III) shall be not less than the

4 greater of—

5 “(aa) 4 times the median

6 amount paid per acre for all land

7 leased under this Act during the

8 preceding year; and

9 “(bb) \$50.

10 “(ii) INDUSTRY STANDARDS.—The

11 term ‘industry standards’ means the stand-

12 ards by which a qualified geothermal pro-

13 fessional assesses whether downhole or

14 flowing temperature measurements with

15 indications of permeability are sufficient to

16 produce energy from geothermal resources,

17 as determined through flow or injection

18 testing or measurement of lost circulation

19 while drilling.

20 “(iii) QUALIFIED FEDERAL LAND.—

21 The term ‘qualified Federal land’ means

22 land that is otherwise available for leasing

23 under this Act.

24 “(iv) QUALIFIED GEOTHERMAL PRO-

25 FESSIONAL.—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—



1                   “(I) consists of not less than 1  
2                   acre and not more than 640 acres;  
3                   and

4                   “(II) is not already leased under  
5                   this Act or nominated to be leased  
6                   under subsection (a);

7                   “(ii) the qualified lessee has not pre-  
8                   viously received a noncompetitive lease  
9                   under this paragraph in connection with  
10                  the valid discovery for which data has been  
11                  submitted under clause (iii)(I); and

12                  “(iii) sufficient geological and other  
13                  technical data prepared by a qualified geo-  
14                  thermal professional has been submitted by  
15                  the qualified lessee to the applicable Fed-  
16                  eral land management agency that would  
17                  lead individuals who are experienced in the  
18                  subject matter to believe that—

19                         “(I) there is a valid discovery of  
20                         geothermal resources on the land for  
21                         which the qualified lessee holds the  
22                         legal right to develop geothermal re-  
23                         sources; and

24                         “(II) that thermal feature ex-  
25                         tends into the adjoining areas.

1                   “(C) DETERMINATION OF FAIR MARKET  
2                   VALUE.—

3                   “(i) IN GENERAL.—The Secretary  
4                   shall—

5                   “(I) publish a notice of any re-  
6                   quest to lease land under this para-  
7                   graph;

8                   “(II) determine fair market value  
9                   for purposes of this paragraph in ac-  
10                  cordance with procedures for making  
11                  those determinations that are estab-  
12                  lished by regulations issued by the  
13                  Secretary;

14                  “(III) provide to a qualified les-  
15                  see and publish, with an opportunity  
16                  for public comment for a period of 30  
17                  days, any proposed determination  
18                  under this subparagraph of the fair  
19                  market value of an area that the  
20                  qualified lessee seeks to lease under  
21                  this paragraph; and

22                  “(IV) provide to the qualified les-  
23                  see and any adversely affected party  
24                  the opportunity to appeal the final de-  
25                  termination of fair market value in an

1 administrative proceeding before the  
2 applicable Federal land management  
3 agency, in accordance with applicable  
4 law (including regulations).

5 “(ii) LIMITATION ON NOMINATION.—  
6 After publication of a notice of request to  
7 lease land under this paragraph, the Sec-  
8 retary may not accept under subsection (a)  
9 any nomination of the land for leasing un-  
10 less the request has been denied or with-  
11 drawn.

12 “(iii) ANNUAL RENTAL.—For pur-  
13 poses of section 5(a)(3), a lease awarded  
14 under this paragraph shall be considered a  
15 lease awarded in a competitive lease sale.

16 “(D) REGULATIONS.—Not later than 270  
17 days after the date of enactment of this para-  
18 graph, the Secretary shall issue regulations to  
19 carry out this paragraph.”.

20 **SEC. 2137. LARGE-SCALE GEOTHERMAL ENERGY.**

21 Title VI of the Energy Independence and Security  
22 Act of 2007 is amended by inserting after section 616 (42  
23 U.S.C. 17195) the following:

24 **“SEC. 616A. LARGE-SCALE GEOTHERMAL ENERGY.**

25 “(a) FINDINGS.—Congress finds that—

1           “(1) the Geothermal Technologies Program of  
2 the Office of Energy Efficiency and Renewable En-  
3 ergy of the Department has included a focus on di-  
4 rect use of geothermal energy in the low-temperature  
5 geothermal energy subprogram (including in the de-  
6 velopment of a research and development plan for  
7 the program);

8           “(2) the Building Technologies Program of the  
9 Office of Energy Efficiency and Renewable Energy  
10 of the Department—

11                   “(A) is focused on the energy demand and  
12 energy efficiency of buildings; and

13                   “(B) includes geothermal heat pumps as a  
14 component technology in the residential and  
15 commercial deployment activities of the pro-  
16 gram; and

17           “(3) geothermal heat pumps and direct use of  
18 geothermal energy, especially in large-scale applica-  
19 tions, can make a significant contribution to the use  
20 of renewable energy but are underrepresented in re-  
21 search, development, demonstration, and commer-  
22 cialization.

23           “(b) PURPOSES.—The purposes of this section are—

1           “(1) to improve the components, processes, and  
2 systems used for geothermal heat pumps and the di-  
3 rect use of geothermal energy; and

4           “(2) to increase the energy efficiency, lower the  
5 cost, increase the use, and improve and demonstrate  
6 the applicability of geothermal heat pumps to, and  
7 the direct use of geothermal energy in, large build-  
8 ings, commercial districts, residential communities,  
9 and large municipal, agricultural, or industrial  
10 projects.

11       “(c) DEFINITIONS.—In this section:

12           “(1) DIRECT USE OF GEOTHERMAL ENERGY.—  
13 The term ‘direct use of geothermal energy’ means  
14 systems that use water that is at a temperature be-  
15 tween approximately 38 degrees Celsius and 149 de-  
16 grees Celsius directly or through a heat exchanger to  
17 provide—

18                   “(A) heating to buildings; or

19                   “(B) heat required for industrial processes,  
20 agriculture, aquaculture, and other facilities.

21           “(2) GEOTHERMAL HEAT PUMP.—The term  
22 ‘geothermal heat pump’ means a system that pro-  
23 vides heating and cooling by exchanging heat from  
24 shallow ground or surface water using—

1           “(A) a closed loop system, which transfers  
2           heat by way of buried or immersed pipes that  
3           contain a mix of water and working fluid; or

4           “(B) an open loop system, which circulates  
5           ground or surface water directly into the build-  
6           ing and returns the water to the same aquifer  
7           or surface water source.

8           “(3) LARGE-SCALE APPLICATION.—The term  
9           ‘large-scale application’ means an application for  
10          space or process heating or cooling for large entities  
11          with a name-plate capacity, expected resource, or  
12          rating of 10 or more megawatts, such as a large  
13          building, commercial district, residential community,  
14          or a large municipal, agricultural, or industrial  
15          project.

16          “(4) SECRETARY.—The term ‘Secretary’ means  
17          the Secretary of Energy, acting through the Assist-  
18          ant Secretary for Energy Efficiency and Renewable  
19          Energy.

20          “(d) PROGRAM.—

21                 “(1) IN GENERAL.—The Secretary shall estab-  
22                 lish a program of research, development, and dem-  
23                 onstration for geothermal heat pumps and the direct  
24                 use of geothermal energy.

1           “(2) AREAS.—The program may include re-  
2           search, development, demonstration, and commercial  
3           application of—

4                   “(A) geothermal ground loop efficiency im-  
5                   provements through more efficient heat transfer  
6                   fluids;

7                   “(B) geothermal ground loop efficiency im-  
8                   provements through more efficient thermal  
9                   grouts for wells and trenches;

10                  “(C) geothermal ground loop installation  
11                  cost reduction through—

12                           “(i) improved drilling methods;

13                           “(ii) improvements in drilling equip-  
14                           ment;

15                           “(iii) improvements in design method-  
16                           ology and energy analysis procedures; and

17                           “(iv) improved methods for deter-  
18                           mination of ground thermal properties and  
19                           ground temperatures;

20                  “(D) installing geothermal ground loops  
21                  near the foundation walls of new construction  
22                  to take advantage of existing structures;

23                   “(E) using gray or black wastewater as a  
24                   method of heat exchange;

1           “(F) improving geothermal heat pump sys-  
2           tem economics through integration of geo-  
3           thermal systems with other building systems,  
4           including providing hot and cold water and re-  
5           jecting or circulating industrial process heat  
6           through refrigeration heat rejection and waste  
7           heat recovery;

8           “(G) advanced geothermal systems using  
9           variable pumping rates to increase efficiency;

10          “(H) geothermal heat pump efficiency im-  
11          provements;

12          “(I) use of hot water found in mines and  
13          mine shafts and other surface waters as the  
14          heat exchange medium;

15          “(J) heating of districts, neighborhoods,  
16          communities, large commercial or public build-  
17          ings (including office, retail, educational, gov-  
18          ernment, and institutional buildings and multi-  
19          family residential buildings and campuses), and  
20          industrial and manufacturing facilities;

21          “(K) geothermal system integration with  
22          solar thermal water heating or cool roofs and  
23          solar-regenerated desiccants to balance loads  
24          and use building hot water to store geothermal  
25          energy;



1           “(L) use of hot water coproduced from oil  
2           and gas recovery;

3           “(M) use of water sources at a tempera-  
4           ture of less than 150 degrees Celsius for direct  
5           use;

6           “(N) system integration of direct use with  
7           geothermal electricity production; and

8           “(O) coproduction of heat and power, in-  
9           cluding on-site use.

10          “(3) ENVIRONMENTAL IMPACTS.—In carrying  
11          out the program, the Secretary shall identify and  
12          mitigate potential environmental impacts in accord-  
13          ance with section 614(c).

14          “(e) GRANTS.—

15                 “(1) IN GENERAL.—The Secretary shall make  
16                 grants available to State and local governments, in-  
17                 stitutions of higher education, nonprofit entities,  
18                 utilities, and for-profit companies (including manu-  
19                 facturers of heat-pump and direct-use components  
20                 and systems) to promote the development of geo-  
21                 thermal heat pumps and the direct use of geo-  
22                 thermal energy.

23                 “(2) PRIORITY.—In making grants under this  
24                 subsection, the Secretary shall give priority to pro-  
25                 posals that apply to large buildings (including office,

1 retail, educational, government, institutional, and  
2 multifamily residential buildings and campuses and  
3 industrial and manufacturing facilities), commercial  
4 districts, and residential communities.

5 “(3) NATIONAL SOLICITATION.—Not later than  
6 180 days after the date of enactment of this section,  
7 the Secretary shall conduct a national solicitation for  
8 applications for grants under this section.

9 “(f) REPORTS.—

10 “(1) IN GENERAL.—Not later than 2 years  
11 after the date of enactment of this section and annu-  
12 ally thereafter, the Secretary shall submit to the  
13 Committee on Energy and Natural Resources of the  
14 Senate and the Committee on Science, Space, and  
15 Technology of the House of Representatives a report  
16 on progress made and results obtained under this  
17 section to develop geothermal heat pumps and direct  
18 use of geothermal energy.

19 “(2) AREAS.—Each of the reports required  
20 under this subsection shall include—

21 “(A) an analysis of progress made in each  
22 of the areas described in subsection (d)(2); and

23 “(B)(i) a description of any relevant rec-  
24 ommendations made during a review of the pro-  
25 gram; and

1                   “(ii) any plans to address the rec-  
2                   ommendations under clause (i).”.

3 **SEC. 2138. REPORT TO CONGRESS.**

4           Not later than 3 years after the date of enactment  
5 of this Act and not less frequently than once every 5 years  
6 thereafter, the Secretary and the Secretary of the Interior  
7 shall submit to the appropriate committees of Congress  
8 a report describing the progress made towards achieving  
9 the goals described in section 2131.

10 **SEC. 2139. AUTHORIZATION OF APPROPRIATIONS.**

11           There are authorized to be appropriated to carry out  
12 this subtitle such sums as are necessary.

13 **Subtitle L—Clean Coal Technology**  
14 **Research**

15 **SEC. 2141. FOSSIL ENERGY.**

16           Section 961(a) of the Energy Policy Act of 2005 (42  
17 U.S.C. 16291(a)) is amended by adding at the end the  
18 following:

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

1     **Subtitle M—Long-term Contracts**

2     **SEC. 2151. CONTRACTS FOR FEDERAL PURCHASES OF EN-**  
3                     **ERGY.**

4             Part 3 of title V of the National Energy Conservation  
5 Policy Act is amended by adding after section 553 (42  
6 U.S.C. 8259b) the following:

7     **“SEC. 554. LONG-TERM CONTRACTS FOR ENERGY.**

8             “(a) IN GENERAL.—Notwithstanding section  
9 501(b)(1)(B) of title 40, United States Code, a contract  
10 for the acquisition of renewable energy or energy from co-  
11 generation facilities for the Federal Government may be  
12 made for a period not to exceed 30 years.

13             “(b) STANDARDIZED ENERGY PURCHASE AGREE-  
14 MENT.—Not later than 90 days after the date of enact-  
15 ment of this section, the Secretary, acting through the  
16 Federal Energy Management Program, shall publish a  
17 standardized energy purchase agreement setting forth  
18 commercial terms and conditions that agencies may use  
19 to acquire renewable energy or energy from cogeneration  
20 facilities.

21             “(c) TECHNICAL ASSISTANCE.—The Secretary shall  
22 provide technical assistance to assist agencies in imple-  
23 menting this section.”.

1     **Subtitle N—Promoting Renewable**  
2             **Energy With Shared Solar**

3     **SEC. 2161. PROVISION OF INTERCONNECTION SERVICE AND**  
4             **NET BILLING SERVICE FOR COMMUNITY**  
5             **SOLAR FACILITIES.**

6             (a) IN GENERAL.—Section 111(d) of the Public Util-  
7     ity Regulatory Policies Act of 1978 (16 U.S.C. 2621(d))  
8     (as amended by section 2020(a)) is amended by adding  
9     at the end the following:

10             “(21) COMMUNITY SOLAR FACILITIES.—

11                 “(A) DEFINITIONS.—In this paragraph:

12                     “(i) COMMUNITY SOLAR FACILITY.—

13                         The term ‘community solar facility’ means  
14                         a solar photovoltaic system that—

15                             “(I) allocates electricity to mul-  
16                             tiple individual electric consumers of  
17                             an electric utility;

18                             “(II) has a nameplate rating of 2  
19                             megawatts or less; and

20                             “(III) is—

21                                 “(aa) owned by the electric  
22                                 utility, jointly owned, or third-  
23                                 party-owned;

1                   “(bb) connected to a local  
2                   distribution facility of the electric  
3                   utility; and

4                   “(cc) located on or off the  
5                   property of a consumer of the  
6                   electricity.

7                   “(ii) INTERCONNECTION SERVICE.—  
8                   The term ‘interconnection service’ means a  
9                   service provided by an electric utility to an  
10                  electric consumer, in accordance with the  
11                  standards described in paragraph (15),  
12                  through which a community solar facility is  
13                  connected to an applicable local distribu-  
14                  tion facility.

15                  “(iii) NET BILLING SERVICE.—The  
16                  term ‘net billing service’ means a service  
17                  provided by an electric utility to an electric  
18                  consumer through which electric energy  
19                  generated for that electric consumer from  
20                  a community solar facility may be used to  
21                  offset electric energy provided by the elec-  
22                  tric utility to the electric consumer during  
23                  the applicable billing period.

24                  “(B) REQUIREMENT.—On receipt of a re-  
25                  quest of an electric consumer served by the

1 electric utility, each electric utility shall make  
2 available to the electric consumer interconnec-  
3 tion service and net billing service for a commu-  
4 nity solar facility.”.

5 (b) COMPLIANCE.—

6 (1) TIME LIMITATIONS.—Section 112(b) of the  
7 Public Utility Regulatory Policies Act of 1978 (16  
8 U.S.C. 2622(b)) (as amended by section 2020(b)(1))  
9 is amended by adding at the end the following:

10 “(8)(A) Not later than 1 year after the date of  
11 enactment of this paragraph, each State regulatory  
12 authority (with respect to each electric utility for  
13 which the State has ratemaking authority) and each  
14 nonregulated utility shall commence consideration  
15 under section 111, or set a hearing date for consid-  
16 eration, with respect to the standard established by  
17 paragraph (21) of section 111(d).

18 “(B) Not later than 2 years after the date of  
19 enactment of this paragraph, each State regulatory  
20 authority (with respect to each electric utility for  
21 which the State has ratemaking authority), and each  
22 nonregulated electric utility shall complete the con-  
23 sideration and make the determination under section  
24 111 with respect to the standard established by  
25 paragraph (21) of section 111(d).”.

1 (2) FAILURE TO COMPLY.—

2 (A) IN GENERAL.—Section 112(c) of the  
3 Public Utility Regulatory Policies Act of 1978  
4 (16 U.S.C. 2622(c)) (as amended by section  
5 2020(b)(2)) is amended—

6 (i) by striking “such paragraph (14)”  
7 and all that follows through “paragraphs  
8 (16)” and inserting “such paragraph (14).  
9 In the case of the standard established by  
10 paragraph (15) of section 111(d), the ref-  
11 erence contained in this subsection to the  
12 date of enactment of this Act shall be  
13 deemed to be a reference to the date of en-  
14 actment of that paragraph (15). In the  
15 case of the standards established by para-  
16 graphs (16)”; and

17 (ii) by adding at the end the fol-  
18 lowing: “In the case of the standard estab-  
19 lished by paragraph (21) of section 111(d),  
20 the reference contained in this subsection  
21 to the date of enactment of this Act shall  
22 be deemed to be a reference to the date of  
23 enactment of that paragraph (21).”.

24 (B) TECHNICAL CORRECTION.—



1 (i) IN GENERAL.—Section 1254(b) of  
2 the Energy Policy Act of 2005 (Public  
3 Law 109–58; 119 Stat. 971) is amended  
4 by striking paragraph (2).

5 (ii) TREATMENT.—The amendment  
6 made by paragraph (2) of section 1254(b)  
7 of the Energy Policy Act of 2005 (Public  
8 Law 109–58; 119 Stat. 971) (as in effect  
9 on the day before the date of enactment of  
10 this Act) is void, and section 112(d) of the  
11 Public Utility Regulatory Policies Act of  
12 1978 (16 U.S.C. 2622(d)) shall be in ef-  
13 fect as if those amendments had not been  
14 enacted.

15 (3) PRIOR STATE ACTIONS.—

16 (A) IN GENERAL.—Section 112 of the  
17 Public Utility Regulatory Policies Act of 1978  
18 (16 U.S.C. 2622) is amended by adding at the  
19 end the following:

20 “(g) PRIOR STATE ACTIONS.—Subsections (b) and  
21 (c) shall not apply to the standard established by para-  
22 graph (21) of section 111(d) in the case of any electric  
23 utility in a State if, before the date of enactment of this  
24 subsection—

1           “(1) the State has implemented for the electric  
2 utility the standard (or a comparable standard);

3           “(2) the State regulatory authority for the  
4 State or the relevant nonregulated electric utility has  
5 conducted a proceeding to consider implementation  
6 of the standard (or a comparable standard) for the  
7 electric utility; or

8           “(3) the State legislature has voted on the im-  
9 plementation of the standard (or a comparable  
10 standard) for the electric utility.”.

11           (B) CROSS-REFERENCE.—Section 124 of  
12 the Public Utility Regulatory Policies Act of  
13 1978 (16 U.S.C. 2634) is amended by adding  
14 at the end the following: “In the case of the  
15 standard established by paragraph (21) of sec-  
16 tion 111(d), the reference contained in this sub-  
17 section to the date of enactment of this Act  
18 shall be deemed to be a reference to the date  
19 of enactment of that paragraph (21).”.

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

22           **SEC. 2171. REPORT.**

23           (a) IN GENERAL.—Not later than 1 year before the  
24 date on which the credits under sections 45L, 45S, 45T,  
25 48E, 179D, and 179F of the Internal Revenue Code of

1 1986 expire, the Secretary, in consultation with the Sec-  
2 retary of Treasury, shall submit to the Committees on Fi-  
3 nance and Energy of the Senate and the Committees on  
4 Natural Resources, Ways and Means, and Energy and  
5 Commerce of the House of Representative a report on  
6 whether continuation of the credits under sections 45L,  
7 45S, 45T, 48E, 179D, and 179F of the Internal Revenue  
8 Code of 1986 remains necessary to achieve the carbon sav-  
9 ings goal described in section 3001(1).

10 (b) REQUIREMENTS.—In preparing the report re-  
11 quired under subsection (a), the Secretary shall con-  
12 sider—

- 13 (1) regional differences in energy prices;
- 14 (2) the innovation and diffusion of new tech-  
15 nologies; and
- 16 (3) the interaction between the credits and  
17 other Federal and State incentives for renewable and  
18 conventional energy sources.

## 19 **Subtitle P—Loan Programs**

### 20 **SEC. 2181. TERMS AND CONDITIONS FOR INCENTIVES FOR** 21 **INNOVATIVE TECHNOLOGIES.**

22 (a) BORROWER PAYMENT OF SUBSIDY COST.—

- 23 (1) IN GENERAL.—Section 1702 of the Energy  
24 Policy Act of 2005 (42 U.S.C. 16512) is amended  
25 by adding at the end the following:

1 “(1) BORROWER PAYMENT OF SUBSIDY COST.—

2 “(1) IN GENERAL.—In addition to the require-  
3 ment in subsection (b)(1), no guarantee shall be  
4 made unless the Secretary has received from the  
5 borrower not less than 25 percent of the cost of the  
6 guarantee.

7 “(2) ESTIMATE.—The Secretary shall provide  
8 to the borrower, as soon as practicable, an estimate  
9 or range of the cost of the guarantee under para-  
10 graph (1).”.

11 (2) CONFORMING AMENDMENT.—Section  
12 1702(b) of the Energy Policy Act of 2005 (42  
13 U.S.C. 16512(b)) is amended—

14 (A) by striking “(1) IN GENERAL.—No  
15 guarantee” and inserting the following: “Sub-  
16 ject to subsection (1), no guarantee”;

17 (B) by redesignating subparagraphs (A),  
18 (B), and (C) as paragraphs (1), (2), and (3),  
19 respectively, and indenting appropriately; and

20 (C) in paragraph (3) (as so redesign-  
21 nated)—

22 (i) by striking “subparagraph (A)”  
23 and inserting “paragraph (1)”; and

24 (ii) by striking “subparagraph (B)”  
25 and inserting “paragraph (2)”.

1           (b) PROHIBITION ON SUBORDINATION OF DEBT.—  
2 Section 1702(d)(3) of the Energy Policy Act of 2005 (42  
3 U.S.C. 16512(d)(3)) is amended by striking “is not subor-  
4 dinate” and inserting “(including any reorganization, re-  
5 structuring, or termination of the obligation) shall not at  
6 any time be subordinate”.

7           (c) LOAN PROGRAM TRANSPARENCY.—Section 1703  
8 of the Energy Policy Act of 2005 (42 U.S.C. 16513) is  
9 amended by adding at the end the following:

10           “(f) LOAN STATUS.—

11                   “(1) REQUEST.—If the Secretary does not  
12 make a final decision on an application for a loan  
13 guarantee under this section by the date that is 270  
14 days after receipt of the application by the Sec-  
15 retary, on that date and every 90 days thereafter  
16 until the final decision is made, the applicant may  
17 request that the Secretary provide to the applicant  
18 a description of the status of the application.

19                   “(2) RESPONSE.—Not later than 10 days after  
20 receiving a request from an applicant under para-  
21 graph (1), the Secretary shall provide to the appli-  
22 cant a response that includes—

23                           “(A) a summary of any factors that are  
24 delaying a final decision on the application; and

1                   “(B) an estimate of when review of the ap-  
2                   plication will be completed.”.

3           (d) TEMPORARY PROGRAM FOR RAPID DEPLOYMENT  
4 OF RENEWABLE ENERGY AND ELECTRIC POWER TRANS-  
5 MISSION PROJECTS.—

6           (1) REPEAL.—Section 1705 of the Energy Pol-  
7 icy Act of 2005 (42 U.S.C. 16516) is repealed.

8           (2) RESCISSION.—There is rescinded the unob-  
9 ligated balance of amounts made available to carry  
10 out the loan guarantee program established under  
11 section 1705 of the Energy Policy Act of 2005 (42  
12 U.S.C. 16516) (before the amendment made by  
13 paragraph (1)).

14           (3) MANAGEMENT.—The Secretary shall ensure  
15 rigorous continued management and oversight of all  
16 outstanding loans guaranteed under the program de-  
17 scribed in subsection (b) until those loans have been  
18 repaid in full.

19 **SEC. 2182. STATE LOAN ELIGIBILITY.**

20           (a) DEFINITIONS.—Section 1701 of the Energy Pol-  
21 icy Act of 2005 (42 U.S.C. 16511) is amended by adding  
22 at the end the following:

23           “(6) STATE.—The term ‘State’ has the mean-  
24 ing given the term in section 202 of the Energy  
25 Conservation and Production Act (42 U.S.C. 6802).

1           “(7) STATE ENERGY FINANCING INSTITU-  
2           TION.—

3           “(A) IN GENERAL.—The term ‘State en-  
4           ergy financing institution’ means a quasi-inde-  
5           pendent entity or an entity within a State agen-  
6           cy or financing authority established by a  
7           State—

8                   “(i) to provide financing support or  
9                   credit enhancements, including loan guar-  
10                  antees and loan loss reserves, for eligible  
11                  projects; and

12                  “(ii) to create liquid markets for eligi-  
13                  ble projects, including warehousing and  
14                  securitization, or take other steps to reduce  
15                  financial barriers to the deployment of ex-  
16                  isting and new eligible projects.

17           “(B) INCLUSION.—The term ‘State energy  
18           financing institution’ includes an entity or orga-  
19           nization established to achieve the purposes de-  
20           scribed in clauses (i) and (ii) of subparagraph  
21           (A) by an Indian tribal entity or an Alaska Na-  
22           tive Corporation.”.

23           (b) TERMS AND CONDITIONS.—Section 1702 of the  
24           Energy Policy Act of 2005 (42 U.S.C. 16512) (as amend-  
25           ed by section 4001(a)(1)) is amended—

1           (1) in subsection (a), by inserting “or to a  
2     State energy financing institution” after “for  
3     projects”; and

4           (2) by adding at the end the following:

5     “(m) STATE ENERGY FINANCING INSTITUTIONS.—

6           “(1) ELIGIBILITY.—To be eligible for a guar-  
7     antee under this title, a State energy financing insti-  
8     tution—

9           “(A) shall meet the requirements of section  
10     1703(a)(1); and

11           “(B) shall not be required to meet the re-  
12     quirements of section 1703(a)(2).

13           “(2) PARTNERSHIPS AUTHORIZED.—In car-  
14     rying out a project receiving a loan guarantee under  
15     this title, State energy financing institutions may  
16     enter into partnerships with private entities, tribal  
17     entities, and Alaska Native corporations.”.

## 18     **TITLE III—CUTTING POLLUTION**

### 19           **AND WASTE**

#### 20           **Subtitle A—Carbon Savings Goal**

##### 21     **SEC. 3001. POLICY OF UNITED STATES ON ADDRESSING** 22           **CLIMATE CHANGE.**

23     It is the policy of the United States—

24           (1) to use appropriate authorities and available  
25     technologies to reduce the greenhouse gas emissions



1 of the United States by not less than 2 percent per  
2 year on average through 2025;

3 (2) to make the investments necessary to im-  
4 prove the resilience of vulnerable communities and  
5 infrastructure in the United States to the impacts of  
6 climate change that can no longer be prevented; and

7 (3) to exercise the international leadership posi-  
8 tion of the United States to address climate change  
9 by securing commitments from other major carbon-  
10 emitting countries to meet their own carbon pollu-  
11 tion reduction targets in a transparent and verifiable  
12 manner.

## 13 **Subtitle B—American Energy** 14 **Efficiency**

### 15 **SEC. 3011. ENERGY EFFICIENCY RESOURCE STANDARD FOR** 16 **RETAIL ELECTRICITY AND NATURAL GAS** 17 **SUPPLIERS.**

18 (a) IN GENERAL.—Title VI of the Public Utility Reg-  
19 ulatory Policies Act of 1978 (16 U.S.C. 2601 et seq.) is  
20 amended by adding at the end the following:

### 21 **“SEC. 610. FEDERAL ENERGY EFFICIENCY RESOURCE** 22 **STANDARD FOR RETAIL ELECTRICITY AND** 23 **NATURAL GAS SUPPLIERS.**

24 “(a) DEFINITIONS.—In this section:

25 “(1) BASE QUANTITY.—

1           “(A) IN GENERAL.—The term ‘base quan-  
2           tity’, with respect to a retail electricity supplier  
3           or retail natural gas supplier, means, for each  
4           calendar year for which a performance standard  
5           is established under subsection (c), the average  
6           annual quantity of electricity or natural gas de-  
7           livered by the retail electricity supplier or retail  
8           natural gas supplier to retail customers during  
9           the 3 calendar years immediately preceding the  
10          first year that compliance is required under  
11          subsection (c)(1).

12          “(B) EXCLUSION.—The term ‘base quan-  
13          tity’, with respect to a retail natural gas sup-  
14          plier, does not include natural gas delivered for  
15          purposes of electricity generation.

16          “(2) CUSTOMER FACILITY SAVINGS.—The term  
17          ‘customer facility savings’ means a reduction in end-  
18          use electricity or natural gas consumption (including  
19          waste heat energy savings) at a facility of an end-  
20          use consumer of electricity or natural gas served by  
21          a retail electricity supplier or natural gas supplier,  
22          as compared to—

23                 “(A) in the case of a new facility, con-  
24                 sumption at a reference facility of average effi-  
25                 ciency;

1           “(B) in the case of an existing facility,  
2           consumption at the facility during a base period  
3           of not less than 1 year;

4           “(C) in the case of new equipment that re-  
5           places existing equipment at the end of the use-  
6           ful life of the existing equipment, consumption  
7           by new equipment of average efficiency of the  
8           same equipment type, except that customer sav-  
9           ings under this subparagraph shall not be  
10          counted towards customer savings under sub-  
11          paragraph (A) or (B); and

12          “(D) in the case of new equipment that re-  
13          places existing equipment with remaining useful  
14          life—

15                 “(i) consumption of the existing  
16                 equipment for the remaining useful life of  
17                 the equipment; and

18                 “(ii) thereafter, consumption of new  
19                 equipment of average efficiency.

20          “(3) ELECTRICITY SAVINGS.—The term ‘elec-  
21          tricity savings’ means reductions in electricity con-  
22          sumption achieved through measures implemented  
23          after the date of enactment of this section, as deter-  
24          mined in accordance with regulations promulgated  
25          by the Secretary, that are limited to—

1           “(A) customer facility savings of elec-  
2           tricity, adjusted to reflect any associated in-  
3           crease in fuel consumption at the facility;

4           “(B) reductions in distribution system  
5           losses of electricity achieved by a retail elec-  
6           tricity supplier, as compared to losses attrib-  
7           utable to new or replacement distribution sys-  
8           tem equipment of average efficiency, as defined  
9           in regulations promulgated by the Secretary;

10           “(C) CHP savings;

11           “(D) codes and standards savings of elec-  
12           tricity; and

13           “(E) fuel switching energy savings that re-  
14           sults in net savings of electricity.

15           “(4) NATURAL GAS SAVINGS.—The term ‘nat-  
16           ural gas savings’ means reductions in natural gas  
17           consumption from measures implemented after the  
18           date of enactment of this section, as determined in  
19           accordance with regulations promulgated by the Sec-  
20           retary, that are limited to—

21           “(A) customer facility savings of natural  
22           gas, adjusted to reflect any associated increase  
23           in electricity consumption or consumption of  
24           other fuels at the facility;

1           “(B) reductions in leakage, operational  
2 losses, and consumption of natural gas fuel to  
3 operate a gas distribution system, achieved by  
4 a retail natural gas supplier, as compared to  
5 similar leakage, losses, and consumption during  
6 a base period of not less than 1 year;

7           “(C) codes and standards savings of nat-  
8 ural gas; and

9           “(D) fuel switching energy savings that re-  
10 sults in net savings of natural gas.

11           “(5) RETAIL ELECTRICITY SUPPLIER.—

12           “(A) IN GENERAL.—The term ‘retail elec-  
13 tricity supplier’ means, for any given calendar  
14 year, an electric utility that sells not less than  
15 1,000,000 megawatt hours of electric energy to  
16 electric consumers for purposes other than re-  
17 sale during the preceding calendar year.

18           “(B) INCLUSIONS AND LIMITATIONS.—For  
19 purposes of determining whether an electric  
20 utility qualifies as a retail electricity supplier  
21 under subparagraph (A)—

22           “(i) deliveries by any affiliate of an  
23 electric utility to electric consumers for  
24 purposes other than resale shall be consid-

1           ered to be deliveries by the electric utility;  
2           and

3                   “(ii) deliveries by any electric utility  
4           to a lessee, tenant, or affiliate of the elec-  
5           tric utility shall not be considered to be de-  
6           liveries to electric consumers.

7           “(6) RETAIL NATURAL GAS SUPPLIER.—

8                   “(A) IN GENERAL.—The term ‘retail nat-  
9           ural gas supplier’ means, for any given calendar  
10          year, a local distribution company (as defined  
11          in section 2 of the Natural Gas Policy Act of  
12          1978 (15 U.S.C. 3301)), that delivered to nat-  
13          ural gas consumers more than 5,000,000,000  
14          cubic feet of natural gas for purposes other  
15          than resale during the preceding calendar year.

16                   “(B) INCLUSIONS AND LIMITATIONS.—For  
17          purposes of determining whether a person  
18          qualifies as a retail natural gas supplier under  
19          subparagraph (A)—

20                   “(i) deliveries of natural gas by any  
21          affiliate of a local distribution company to  
22          consumers for purposes other than resale  
23          shall be considered to be deliveries by the  
24          local distribution company; and

1                   “(ii) deliveries of natural gas to a les-  
2                   see, tenant, or affiliate of a local distribu-  
3                   tion company shall not be considered to be  
4                   deliveries to natural gas consumers.

5                   “(b) ESTABLISHMENT OF PROGRAM.—

6                   “(1) REGULATIONS.—Not later than 1 year  
7                   after the date of enactment of this section, the Sec-  
8                   retary shall, by regulation, establish a program to  
9                   implement and enforce the requirements of this sec-  
10                  tion, including by—

11                  “(A) defining the terms ‘CHP savings’,  
12                  ‘code and standards savings’, ‘combined heat  
13                  and power system’, ‘cost-effective’, ‘fuel switch-  
14                  ing energy savings’, ‘reporting period’, ‘third-  
15                  party efficiency provider’, and ‘waste heat en-  
16                  ergy savings’;

17                  “(B) establishing measurement and  
18                  verification procedures and standards that  
19                  count only measures and savings that are addi-  
20                  tional to business-as-usual customer purchase  
21                  practices;

22                  “(C) establishing requirements under  
23                  which retail electricity suppliers and retail nat-  
24                  ural gas suppliers shall—

1                   “(i) demonstrate, document, and re-  
2                   port the compliance of the retail electricity  
3                   suppliers and retail natural gas suppliers  
4                   with the performance standards under sub-  
5                   section (c); and

6                   “(ii) estimate the impact of the stand-  
7                   ards on current and future electricity and  
8                   natural gas use in the service territories of  
9                   the suppliers;

10                  “(D) establishing requirements governing  
11                  applications for, and implementation of, dele-  
12                  gated State administration under subsection  
13                  (e); and

14                  “(E) establishing rules to govern transfers  
15                  of electricity or natural gas savings between  
16                  suppliers and third-party efficiency providers  
17                  serving the same State and between suppliers  
18                  and third-party efficiency providers serving dif-  
19                  ferent States.

20                  “(2) COORDINATION WITH STATE PROGRAMS.—  
21                  In establishing and implementing this section, the  
22                  Secretary shall, to the maximum extent practicable,  
23                  preserve the integrity and incorporate best practices  
24                  of existing State energy efficiency programs.

25                  “(c) PERFORMANCE STANDARDS.—



1           “(1) COMPLIANCE OBLIGATION.—Not later  
2 than May 1 of the calendar year immediately fol-  
3 lowing each reporting period—

4           “(A) each retail electricity supplier shall  
5 submit to the Secretary a report, in accordance  
6 with regulations promulgated by the Secretary,  
7 demonstrating that the retail electricity supplier  
8 has achieved cumulative electricity savings (ad-  
9 justed to account for any attrition of savings  
10 measures implemented in prior years) in each  
11 calendar year that are equal to the applicable  
12 percentage of the base quantity of the retail  
13 electricity supplier; and

14           “(B) each retail natural gas supplier shall  
15 submit to the Secretary a report, in accordance  
16 with regulations promulgated by the Secretary,  
17 demonstrating that it has achieved cumulative  
18 natural gas savings (adjusted to account for  
19 any attrition of savings measures implemented  
20 in prior years) in each calendar year that are  
21 equal to the applicable percentage of the base  
22 quantity of such retail natural gas supplier.

23           “(2) STANDARDS FOR 2017 THROUGH 2030.—  
24 For each of calendar years 2017 through 2030, the  
25 applicable percentages are as follows:

“Calendar Year	Cumulative Electricity Savings Percentage	Cumulative Natural Gas Savings Percentage
2017	1.00	0.50
2018	2.00	1.25
2019	3.00	2.00
2020	4.25	3.00
2021	5.50	4.00
2022	7.00	5.00
2023	8.50	6.00
2024	10.00	7.00
2025	11.50	8.00
2026	13.00	9.00
2027	14.75	10.00
2028	16.50	11.00
2029	18.25	12.00
2030	20.00	13.00.

1           “(3) SUBSEQUENT YEARS.—

2           “(A) CALENDAR YEARS 2031 THROUGH  
3           2040.—Not later than December 31, 2028, the  
4           Secretary shall promulgate regulations estab-  
5           lishing performance standards (expressed as ap-  
6           plicable percentages of base quantity for both  
7           cumulative electricity savings and cumulative  
8           natural gas savings) for each of calendar years  
9           2031 through 2040.

10           “(B) REQUIREMENTS.—The Secretary  
11           shall establish standards under this paragraph  
12           at levels reflecting the maximum achievable

1 level of cost-effective energy efficiency potential,  
2 taking into account—

3 “(i) cost-effective energy savings  
4 achieved by leading retail electricity sup-  
5 pliers and retail natural gas suppliers;

6 “(ii) opportunities for new codes and  
7 standard savings;

8 “(iii) technology improvements; and

9 “(iv) other indicators of cost-effective  
10 energy efficiency potential including dif-  
11 ferences between States.

12 “(C) MINIMUM PERCENTAGE.—In no case  
13 shall the applicable percentages for any cal-  
14 endar year be less than the applicable percent-  
15 ages for calendar year 2030.

16 “(4) DELAY OF SUBMISSION FOR FIRST RE-  
17 PORTING PERIOD.—

18 “(A) IN GENERAL.—Notwithstanding  
19 paragraphs (1) and (2), for the 2017 reporting  
20 period, the Secretary may accept a request from  
21 a retail electricity supplier or a retail natural  
22 gas supplier to delay the required submission of  
23 documentation of all or part of the required  
24 savings for up to 2 years.

1           “(B) PLAN FOR COMPLIANCE.—The re-  
2           quest for delay under subparagraph (A) shall  
3           include a plan for coming into full compliance  
4           by the end of the 2018–2019 reporting period.

5           “(5) APPLYING UNUSED SAVINGS TO FUTURE  
6           YEARS.—If savings achieved in a year exceed the  
7           performance standards specified in this subsection,  
8           any savings in excess of the performance standards  
9           may be applied toward performance standards speci-  
10          fied for future years.

11          “(d) ENFORCEMENT AND JUDICIAL REVIEW.—

12           “(1) REVIEW OF RETAIL SUPPLIER REPORTS.—

13           “(A) IN GENERAL.—The Secretary shall  
14           review each report submitted to the Secretary  
15           by a retail electricity supplier or retail natural  
16           gas supplier under subsection (c) to verify that  
17           the applicable performance standards under  
18           subsection (c) have been met.

19           “(B) EXCLUSION.—In determining compli-  
20           ance with the applicable performance standards  
21           under subsection (c), the Secretary shall ex-  
22           clude reported electricity savings or natural gas  
23           savings that are not adequately demonstrated  
24           and documented, in accordance with the regula-

1           tions promulgated under subsections (b) and  
2           (c).

3           “(2) PENALTY FOR FAILURE TO DOCUMENT  
4           ADEQUATE SAVINGS.—If a retail electricity supplier  
5           or a retail natural gas supplier fails to demonstrate  
6           compliance with an applicable performance standard  
7           under subsection (c), or to pay to the State an appli-  
8           cable alternative compliance payment under sub-  
9           section (e)(3), the Secretary shall assess against the  
10          retail electricity supplier or retail natural gas sup-  
11          plier a civil penalty for each failure in an amount  
12          equal to, as adjusted for inflation in accordance with  
13          such regulations as the Secretary may promulgate—

14                 “(A) \$100 per megawatt hour of electricity  
15                 savings or alternative compliance payment that  
16                 the retail electricity supplier failed to achieve or  
17                 make, respectively; or

18                 “(B) \$10 per million Btu of natural gas  
19                 savings or alternative compliance payment that  
20                 the retail natural gas supplier failed to achieve  
21                 or make, respectively.

22          “(3) OFFSETTING STATE PENALTIES.—The  
23          Secretary shall reduce the amount of any penalty  
24          under paragraph (2) by the amount paid by the rel-  
25          evant retail electricity supplier or retail natural gas

1 supplier to a State for failure to comply with the re-  
2 quirements of a State energy efficiency resource  
3 standard during the same compliance period.

4 “(4) ENFORCEMENT PROCEDURES.—The Sec-  
5 retary shall assess a civil penalty, as provided under  
6 paragraph (2), in accordance with the procedures  
7 described in section 333(d) of the Energy Policy and  
8 Conservation Act of 1954 (42 U.S.C. 6303).

9 “(e) STATE ADMINISTRATION.—

10 “(1) IN GENERAL.—On receipt of an applica-  
11 tion from the Governor of a State (including the  
12 Mayor of the District of Columbia), the Secretary  
13 may delegate to the State responsibility for admin-  
14 istering this section within the territory of the State  
15 if the Secretary determines that the State will imple-  
16 ment an energy efficiency program that meets or ex-  
17 ceeds the requirements of this section.

18 “(2) SECRETARIAL DETERMINATION.—Not  
19 later than 180 days after the date on which a com-  
20 plete application is received by the Secretary, the  
21 Secretary shall make a substantive determination  
22 approving or disapproving a State application, after  
23 public notice and comment.

24 “(3) ALTERNATIVE COMPLIANCE PAYMENTS.—

1           “(A) IN GENERAL.—As part of an applica-  
2           tion submitted under paragraph (1), a State  
3           may permit retail electricity suppliers or retail  
4           natural gas suppliers to pay to the State, by  
5           not later than May 1 of the calendar year im-  
6           mediately following the applicable reporting pe-  
7           riod, an alternative compliance payment in an  
8           amount equal to, as adjusted for inflation in ac-  
9           cordance with such regulations as the Secretary  
10          may promulgate, not less than—

11                   “(i) \$50 per megawatt hour of elec-  
12                   tricity savings needed to make up any def-  
13                   icit with regard to a compliance obligation  
14                   under the applicable performance stand-  
15                   ard; or

16                   “(ii) \$5 per million Btu of natural gas  
17                   savings needed to make up any deficit with  
18                   regard to a compliance obligation under  
19                   the applicable performance standard.

20          “(B) USE OF PAYMENTS.—Alternative  
21          compliance payments collected by a State under  
22          subparagraph (A) shall be used by the State to  
23          administer the delegated authority of the State  
24          under this section and to implement cost-effec-  
25          tive energy efficiency programs that—





1           retary finds deficiencies, the Secretary  
2           shall—

3                   “(I) notify the State of the defi-  
4                   ciencies;

5                   “(II) direct the State to correct  
6                   the deficiencies; and

7                   “(III) require the State to report  
8                   to the Secretary on progress made by  
9                   not later than 180 days after the date  
10                  on which the State receives notice  
11                  under subclause (I).

12                  “(ii) SUBSTANTIAL DEFICIENCIES.—If  
13                  the deficiencies are substantial, the Sec-  
14                  retary shall—

15                   “(I) disallow the reported elec-  
16                   tricity savings or natural gas savings  
17                   that the Secretary determines are not  
18                   credible due to deficiencies;

19                   “(II) re-review the State not  
20                   later than 2 years after the date on  
21                   which the original review was com-  
22                   pleted; and

23                   “(III) if substantial deficiencies  
24                   remain uncorrected after the review  
25                   provided for under subclause (II), re-

1                   voke the authority of the State to ad-  
2                   minister the program established  
3                   under this section.

4           “(f) INFORMATION AND REPORTS.—In accordance  
5 with section 13 of the Federal Energy Administration Act  
6 of 1974 (15 U.S.C. 772), the Secretary may require any  
7 retail electricity supplier, retail natural gas supplier, third-  
8 party efficiency provider, or any other entity that the Sec-  
9 retary determines appropriate, to provide any information  
10 the Secretary determines appropriate to carry out this sec-  
11 tion.

12           “(g) STATE LAW.—Nothing in this section dimin-  
13 ishes or qualifies any authority of a State or political sub-  
14 division of a State to adopt or enforce any law or regula-  
15 tion respecting electricity savings or natural gas savings,  
16 including any law or regulation establishing energy effi-  
17 ciency requirements that are more stringent than those  
18 under this section, except that no State law or regulation  
19 shall relieve any person of any requirement otherwise ap-  
20 plicable under this section.”.

21           (b) CONFORMING AMENDMENT.—The table of con-  
22 tents of the Public Utility Regulatory Policies Act of 1978  
23 (16 U.S.C. prec. 2601) is amended by adding at the end  
24 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.”.

1           **Subtitle C—Energy Efficiency**  
2                   **Retrofit Program**

3   **SEC. 3021. ENERGY EFFICIENCY RETROFIT PILOT PRO-**  
4                   **GRAM.**

5           (a) DEFINITIONS.—In this section:

6                   (1) APPLICANT.—The term “applicant” means  
7           a nonprofit organization that applies for a grant  
8           under this section.

9                   (2) ENERGY-EFFICIENCY IMPROVEMENT.—

10                   (A) IN GENERAL.—The term “energy-effi-  
11           ciency improvement” means an installed meas-  
12           ure (including a product, equipment, system,  
13           service, or practice) that results in a reduction  
14           in use by a nonprofit organization for energy or  
15           fuel supplied from outside the nonprofit build-  
16           ing.

17                   (B) INCLUSIONS.—The term “energy-effi-  
18           ciency improvement” includes an installed  
19           measure described in subparagraph (A) involv-  
20           ing—

21                   (i) repairing, replacing, or installing—

22                           (I) a roof or lighting system, or  
23                   component of a roof or lighting sys-  
24                   tem;

25                           (II) a window;

1 (III) a door, including a security  
2 door; or

3 (IV) a heating, ventilation, or air  
4 conditioning system or component of  
5 the system (including insulation and  
6 wiring and plumbing improvements  
7 needed to serve a more efficient sys-  
8 tem);

9 (ii) a renewable energy generation or  
10 heating system, including a solar, photo-  
11 voltaic, wind, geothermal, or biomass (in-  
12 cluding wood pellet) system or component  
13 of the system; and

14 (iii) any other measure taken to mod-  
15 ernize, renovate, or repair a nonprofit  
16 building to make the nonprofit building  
17 more energy efficient.

18 (3) NONPROFIT BUILDING.—

19 (A) IN GENERAL.—The term “nonprofit  
20 building” means a building operated and owned  
21 by a nonprofit organization.

22 (B) INCLUSIONS.—The term “nonprofit  
23 building” includes a building described in sub-  
24 paragraph (A) that is—

25 (i) a hospital;

- 1 (ii) a youth center;
- 2 (iii) a school;
- 3 (iv) a social-welfare program facility;
- 4 (v) a faith-based organization; and
- 5 (vi) any other nonresidential and non-
- 6 commercial structure.

7 (b) ESTABLISHMENT.—Not later than 1 year after  
8 the date of enactment of this Act, the Secretary shall es-  
9 tablish a pilot program to award grants for the purpose  
10 of retrofitting nonprofit buildings with energy-efficiency  
11 improvements.

12 (c) GRANTS.—

13 (1) IN GENERAL.—The Secretary may award  
14 grants under the program established under sub-  
15 section (b).

16 (2) APPLICATION.—The Secretary may award a  
17 grant under this section if an applicant submits to  
18 the Secretary an application at such time, in such  
19 form, and containing such information as the Sec-  
20 retary may prescribe.

21 (3) CRITERIA FOR GRANT.—In determining  
22 whether to award a grant under this section, the  
23 Secretary shall apply performance-based criteria,  
24 which shall give priority to applications based on—

25 (A) the energy savings achieved;

1 (B) the cost-effectiveness of the energy-ef-  
2 ficiency improvement;

3 (C) an effective plan for evaluation, meas-  
4 urement, and verification of energy savings;

5 (D) the financial need of the applicant;  
6 and

7 (E) the percentage of the matching con-  
8 tribution by the applicant.

9 (4) LIMITATION ON INDIVIDUAL GRANT  
10 AMOUNT.—Each grant awarded under this section  
11 shall not exceed—

12 (A) an amount equal to 50 percent of the  
13 energy-efficiency improvement; and

14 (B) \$200,000.

15 (5) COST SHARING.—

16 (A) IN GENERAL.—A grant awarded under  
17 this section shall be subject to a minimum non-  
18 Federal cost-sharing requirement of 50 percent.

19 (B) IN-KIND CONTRIBUTIONS.—The non-  
20 Federal share may be provided in the form of  
21 in-kind contributions of materials or services.

22 (d) AUTHORIZATION OF APPROPRIATIONS.—There is  
23 authorized to be appropriated to carry out this section  
24 \$10,000,000 for each of fiscal years 2016 through 2020,  
25 to remain available until expended.

1 **Subtitle D—Weatherization En-**  
2 **hancement and Local Energy**  
3 **Efficiency Investment and Ac-**  
4 **countability**

5 **SEC. 3031. FINDINGS.**

6 Congress finds that—

7 (1) the State energy program established under  
8 part D of title III of the Energy Policy and Con-  
9 servation Act (42 U.S.C. 6321 et seq.) (referred to  
10 in this section as “SEP”) and the Weatherization  
11 Assistance Program for Low-Income Persons estab-  
12 lished under part A of title IV of the Energy Con-  
13 servation and Production Act (42 U.S.C. 6861 et  
14 seq.) (referred to in this section as “WAP”) have  
15 proven to be beneficial, long-term partnerships  
16 among Federal, State, and local partners;

17 (2) the SEP and the WAP have been reauthor-  
18 ized on a bipartisan basis over many years to ad-  
19 dress changing national, regional, and State cir-  
20 cumstances and needs, especially through—

21 (A) the Energy Policy and Conservation  
22 Act (42 U.S.C. 6201 et seq.);

23 (B) the Energy Conservation and Produc-  
24 tion Act (42 U.S.C. 6801 et seq.);

1 (C) the State Energy Efficiency Programs  
2 Improvement Act of 1990 (Public Law 101–  
3 440; 104 Stat. 1006);

4 (D) the Energy Policy Act of 1992 (42  
5 U.S.C. 13201 et seq.);

6 (E) the Energy Policy Act of 2005 (42  
7 U.S.C. 15801 et seq.); and

8 (F) the Energy Independence and Security  
9 Act of 2007 (42 U.S.C. 17001 et seq.);

10 (3) the SEP, also known as the “State energy  
11 conservation program”—

12 (A) was first created in 1975 to implement  
13 a State-based, national program in support of  
14 energy efficiency, renewable energy, economic  
15 development, energy emergency preparedness,  
16 and energy policy; and

17 (B) has come to operate in every sector of  
18 the economy in support of the private sector to  
19 improve productivity and has dramatically re-  
20 duced the cost of government through energy  
21 savings at the State and local levels;

22 (4) Federal laboratory studies have concluded  
23 that, for every Federal dollar invested through the  
24 SEP, more than \$7 is saved in energy costs and al-  
25 most \$11 in non-Federal funds is leveraged;



1 (5) the WAP—

2 (A) was first created in 1976 to assist low-  
3 income families in response to the first oil em-  
4 bargo;

5 (B) has become the largest residential en-  
6 ergy conservation program in the United  
7 States, with more than 7,100,000 homes weath-  
8 erized since the WAP was created;

9 (C) saves an estimated 35 percent of con-  
10 sumption in the typical weatherized home, yield-  
11 ing average annual savings of \$437 per year in  
12 home energy costs;

13 (D) has created thousands of jobs in both  
14 the construction sector and in the supply chain  
15 of materials suppliers, vendors, and manufac-  
16 turers who supply the WAP;

17 (E) returns \$2.51 in energy savings for  
18 every Federal dollar spent in energy and non-  
19 energy benefits over the life of weatherized  
20 homes;

21 (F) serves as a foundation for residential  
22 energy efficiency retrofit standards, technical  
23 skills, and workforce training for the emerging  
24 broader market and reduces residential and

1 power plant emissions of carbon dioxide by 2.65  
2 metric tons each year per home; and

3 (G) has decreased national energy con-  
4 sumption by the equivalent of 24,100,000 bar-  
5 rels of oil annually;

6 (6) the WAP can be enhanced with the addition  
7 of a targeted portion of the Federal funds through  
8 an innovative program that supports projects per-  
9 formed by qualified nonprofit organizations that  
10 have a demonstrated capacity to build, renovate, re-  
11 pair, or improve the energy efficiency of a significant  
12 number of low-income homes, building on the suc-  
13 cess of the existing program without replacing the  
14 existing WAP network or creating a separate deliv-  
15 ery mechanism for basic WAP services;

16 (7) the WAP has increased energy efficiency  
17 opportunities by promoting new, competitive public-  
18 private sector models of retrofitting low-income  
19 homes through new Federal partnerships;

20 (8) improved monitoring and reporting of the  
21 work product of the WAP has yielded benefits, and  
22 expanding independent verification of efficiency work  
23 will support the long-term goals of the WAP;

24 (9) reports of the Government Accountability  
25 Office in 2011, the Inspector General of the Depart-

1       ment, and State auditors have identified State-level  
2       deficiencies in monitoring efforts that can be ad-  
3       dressed in a manner that will ensure that WAP  
4       funds are used more effectively;

5           (10) through the history of the WAP, the WAP  
6       has evolved with improvements in efficiency tech-  
7       nology, including, in the 1990s, many States adopt-  
8       ing advanced home energy audits, which has led to  
9       great returns on investment; and

10          (11) as the home energy efficiency industry has  
11       become more performance-based, the WAP should  
12       continue to use those advances in technology and the  
13       professional workforce.

14   **SEC. 3032. REAUTHORIZATION OF WEATHERIZATION AS-**  
15                   **SISTANCE PROGRAM.**

16       Section 422 of the Energy Conservation and Produc-  
17       tion Act (42 U.S.C. 6872) is amended by striking “appro-  
18       priated—” and all that follows through the period at the  
19       end and inserting “appropriated \$450,000,000 for each  
20       of fiscal years 2016 through 2020.”.

1 **SEC. 3033. GRANTS FOR NEW, SELF-SUSTAINING LOW-IN-**  
2 **COME, SINGLE-FAMILY, AND MULTIFAMILY**  
3 **HOUSING ENERGY RETROFIT MODEL PRO-**  
4 **GRAMS TO ELIGIBLE MULTI-STATE HOUSING**  
5 **AND ENERGY NONPROFIT ORGANIZATIONS.**

6 The Energy Conservation and Production Act is  
7 amended by inserting after section 414B (42 U.S.C.  
8 6864b) the following:

9 **“SEC. 414C. GRANTS FOR NEW, SELF-SUSTAINING LOW-IN-**  
10 **COME, SINGLE-FAMILY, AND MULTIFAMILY**  
11 **HOUSING ENERGY RETROFIT MODEL PRO-**  
12 **GRAMS TO ELIGIBLE MULTI-STATE HOUSING**  
13 **AND ENERGY NONPROFIT ORGANIZATIONS.**

14 “(a) PURPOSES.—The purposes of this section are—

15 “(1) to expand the number of low-income, sin-  
16 gle-family and multifamily homes that receive energy  
17 efficiency retrofits;

18 “(2) to promote innovation and new models of  
19 retrofitting low-income homes through new Federal  
20 partnerships with covered organizations that lever-  
21 age substantial donations, donated materials, volun-  
22 teer labor, homeowner labor equity, and other pri-  
23 vate sector resources;

24 “(3) to assist the covered organizations in dem-  
25 onstrating, evaluating, improving, and replicating

1 widely the model low-income energy retrofit pro-  
2 grams of the covered organizations; and

3 “(4) to ensure that the covered organizations  
4 make the energy retrofit programs of the covered or-  
5 ganizations self-sustaining by the time grant funds  
6 have been expended.

7 “(b) DEFINITIONS.—In this section:

8 “(1) COVERED ORGANIZATION.—The term ‘cov-  
9 ered organization’ means an organization that—

10 “(A) is described in section 501(c)(3) of  
11 the Internal Revenue Code of 1986 and exempt  
12 from taxation under 501(a) of that Code; and

13 “(B) has an established record of con-  
14 structing, renovating, repairing, or making en-  
15 ergy efficient a total of not less than 250  
16 owner-occupied, single-family or multifamily  
17 homes per year for low-income households, ei-  
18 ther directly or through affiliates, chapters, or  
19 other direct partners (using the most recent  
20 year for which data are available).

21 “(2) LOW-INCOME.—The term ‘low-income’  
22 means an income level that is not more than 200  
23 percent of the poverty level (as determined in ac-  
24 cordance with criteria established by the Director of  
25 the Office of Management and Budget) applicable to

1 a family of the size involved, except that the Sec-  
2 retary may establish a higher or lower level if the  
3 Secretary determines that a higher or lower level is  
4 necessary to carry out this section.

5 “(3) WEATHERIZATION ASSISTANCE PROGRAM  
6 FOR LOW-INCOME PERSONS.—The term ‘Weatheriza-  
7 tion Assistance Program for Low-Income Persons’  
8 means the program established under this part (in-  
9 cluding part 440 of title 10, Code of Federal Regu-  
10 lations, or successor regulations).

11 “(c) COMPETITIVE GRANT PROGRAM.—The Sec-  
12 retary shall make grants to covered organizations through  
13 a national competitive process for use in accordance with  
14 this section.

15 “(d) AWARD FACTORS.—In making grants under this  
16 section, the Secretary shall consider—

17 “(1) the number of low-income homes the appli-  
18 cant—

19 “(A) has built, renovated, repaired, or  
20 made more energy efficient as of the date of the  
21 application; and

22 “(B) can reasonably be projected to build,  
23 renovate, repair, or make energy efficient dur-  
24 ing the 10-year period beginning on the date of  
25 the application;

1           “(2) the qualifications, experience, and past  
2 performance of the applicant, including experience  
3 successfully managing and administering Federal  
4 funds;

5           “(3) the number and diversity of States and cli-  
6 mates in which the applicant works as of the date  
7 of the application;

8           “(4) the amount of non-Federal funds, donated  
9 or discounted materials, discounted or volunteer  
10 skilled labor, volunteer unskilled labor, homeowner  
11 labor equity, and other resources the applicant will  
12 provide;

13           “(5) the extent to which the applicant could  
14 successfully replicate the energy retrofit program of  
15 the applicant and sustain the program after the  
16 grant funds have been expended;

17           “(6) regional diversity;

18           “(7) urban, suburban, and rural localities; and

19           “(8) such other factors as the Secretary deter-  
20 mines to be appropriate.

21           “(e) APPLICATIONS.—

22           “(1) IN GENERAL.—Not later than 180 days  
23 after the date of enactment of this section, the Sec-  
24 retary shall request proposals from covered organiza-  
25 tions.

1           “(2) ADMINISTRATION.—To be eligible to re-  
2           ceive a grant under this section, an applicant shall  
3           submit to the Secretary an application at such time,  
4           in such manner, and containing such information as  
5           the Secretary may require.

6           “(3) AWARDS.—Not later than 90 days after  
7           the date of issuance of a request for proposals, the  
8           Secretary shall award grants under this section.

9           “(f) ELIGIBLE USES OF GRANT FUNDS.—A grant  
10          under this section may be used for—

11           “(1) energy efficiency audits, cost-effective ret-  
12           rofit, and related activities in different climatic re-  
13           gions of the United States;

14           “(2) energy efficiency materials and supplies;

15           “(3) organizational capacity—

16           “(A) to significantly increase the number  
17           of energy retrofits;

18           “(B) to replicate an energy retrofit pro-  
19           gram in other States; and

20           “(C) to ensure that the program is self-  
21           sustaining after the Federal grant funds are ex-  
22           pended;

23           “(4) energy efficiency, audit and retrofit train-  
24           ing, and ongoing technical assistance;



1           “(5) information to homeowners on proper  
2 maintenance and energy savings behaviors;

3           “(6) quality control and improvement;

4           “(7) data collection, measurement, and  
5 verification;

6           “(8) program monitoring, oversight, evaluation,  
7 and reporting;

8           “(9) management and administration (up to a  
9 maximum of 10 percent of the total grant);

10          “(10) labor and training activities; and

11          “(11) such other activities as the Secretary de-  
12 termines to be appropriate.

13          “(g) MAXIMUM AMOUNT.—

14           “(1) IN GENERAL.—The amount of a grant  
15 provided under this section shall not exceed—

16           “(A) if the amount made available to carry  
17 out this section for a fiscal year is  
18 \$225,000,000 or more, \$5,000,000; and

19           “(B) if the amount made available to carry  
20 out this section for a fiscal year is less than  
21 \$225,000,000, \$1,500,000.

22          “(2) TECHNICAL AND TRAINING ASSISTANCE.—

23          The total amount of a grant provided under this sec-  
24 tion shall be reduced by the cost of any technical

1 and training assistance provided by the Secretary  
2 that relates to the grant.

3 “(h) GUIDELINES.—

4 “(1) IN GENERAL.—Not later than 90 days  
5 after the date of enactment of this section, the Sec-  
6 retary shall issue guidelines to implement the grant  
7 program established under this section.

8 “(2) ADMINISTRATION.—The guidelines—

9 “(A) shall not apply to the Weatherization  
10 Assistance Program for Low-Income Persons,  
11 in whole or major part; but

12 “(B) may rely on applicable provisions of  
13 law governing the Weatherization Assistance  
14 Program for Low-Income Persons to estab-  
15 lish—

16 “(i) standards for allowable expendi-  
17 tures;

18 “(ii) a minimum savings-to-investment  
19 ratio;

20 “(iii) standards—

21 “(I) to carry out training pro-  
22 grams;

23 “(II) to conduct energy audits  
24 and program activities;

1 “(III) to provide technical assist-  
2 ance;

3 “(IV) to monitor program activi-  
4 ties; and

5 “(V) to verify energy and cost  
6 savings;

7 “(iv) liability insurance requirements;  
8 and

9 “(v) recordkeeping requirements,  
10 which shall include reporting to the Office  
11 of Weatherization and Intergovernmental  
12 Programs of the Department of Energy  
13 applicable data on each home retrofitted.

14 “(i) REVIEW AND EVALUATION.—The Secretary shall  
15 review and evaluate the performance of any covered orga-  
16 nization that receives a grant under this section (which  
17 may include an audit), as determined by the Secretary.

18 “(j) COMPLIANCE WITH STATE AND LOCAL LAW.—  
19 Nothing in this section or any program carried out using  
20 a grant provided under this section supersedes or other-  
21 wise affects any State or local law, to the extent that the  
22 State or local law contains a requirement that is more  
23 stringent than the applicable requirement of this section.

24 “(k) ANNUAL REPORTS.—The Secretary shall submit  
25 to Congress annual reports that provide—

1 “(1) findings;

2 “(2) a description of energy and cost savings  
3 achieved and actions taken under this section; and

4 “(3) any recommendations for further action.

5 “(1) FUNDING.—Of the amount of funds that are  
6 made available to carry out the Weatherization Assistance  
7 Program for each of fiscal years 2016 through 2020 under  
8 section 422, the Secretary shall use to carry out this sec-  
9 tion for each of fiscal years 2016 through 2020—

10 “(1) 2 percent of the amount if the amount is  
11 less than \$225,000,000;

12 “(2) 5 percent of the amount if the amount is  
13 \$225,000,000 or more but less than \$260,000,000;

14 “(3) 10 percent of the amount if the amount is  
15 \$260,000,000 or more but less than \$400,000,000;

16 and

17 “(4) 20 percent of the amount if the amount is  
18 \$400,000,000 or more.”.

19 **SEC. 3034. STANDARDS PROGRAM.**

20 Section 415 of the Energy Conservation and Produc-  
21 tion Act (42 U.S.C. 6865) is amended by adding at the  
22 end the following:

23 “(f) STANDARDS PROGRAM.—

24 “(1) CONTRACTOR QUALIFICATION.—Effective  
25 beginning January 1, 2016, to be eligible to carry

1 out weatherization using funds made available under  
2 this part, a contractor shall be selected through a  
3 competitive bidding process and be—

4 “(A) accredited by the Building Perform-  
5 ance Institute;

6 “(B) an Energy Smart Home Performance  
7 Team accredited under the Residential Energy  
8 Services Network; or

9 “(C) accredited by an equivalent accredita-  
10 tion or program accreditation-based State cer-  
11 tification program approved by the Secretary.

12 “(2) GRANTS FOR ENERGY RETROFIT MODEL  
13 PROGRAMS.—

14 “(A) IN GENERAL.—To be eligible to re-  
15 ceive a grant under section 414C, a covered or-  
16 ganization (as defined in section 414C(b)) shall  
17 use a crew chief who—

18 “(i) is certified or accredited in ac-  
19 cordance with paragraph (1); and

20 “(ii) supervises the work performed  
21 with grant funds.

22 “(B) VOLUNTEER LABOR.—A volunteer  
23 who performs work for a covered organization  
24 that receives a grant under section 414C shall  
25 not be required to be certified under this sub-

1 section if the volunteer is not directly installing  
2 or repairing mechanical equipment or other  
3 items that require skilled labor.

4 “(C) TRAINING.—The Secretary shall use  
5 training and technical assistance funds available  
6 to the Secretary to assist covered organizations  
7 under section 414C in providing training to ob-  
8 tain certification required under this subsection,  
9 including provisional or temporary certification.

10 “(3) MINIMUM EFFICIENCY STANDARDS.—Ef-  
11 fective beginning October 1, 2016, the Secretary  
12 shall ensure that—

13 “(A) each retrofit for which weatherization  
14 assistance is provided under this part meets  
15 minimum efficiency and quality of work stand-  
16 ards established by the Secretary after weather-  
17 ization of a dwelling unit;

18 “(B) at least 10 percent of the dwelling  
19 units are randomly inspected by a third party  
20 accredited under this subsection to ensure com-  
21 pliance with the minimum efficiency and quality  
22 of work standards established under subpara-  
23 graph (A); and

24 “(C) the standards established under this  
25 subsection meet or exceed the industry stand-

1           ards for home performance work that are in ef-  
2           fect on the date of enactment of this subsection,  
3           as determined by the Secretary.”.

4 **SEC. 3035. REAUTHORIZATION OF STATE ENERGY PRO-**  
5 **GRAM.**

6           Section 365(f) of the Energy Policy and Conservation  
7 Act (42 U.S.C. 6325(f)) is amended by striking  
8 “\$125,000,000 for each of fiscal years 2007 through  
9 2012” and inserting “\$75,000,000 for each of fiscal years  
10 2016 through 2020”.

11 **Subtitle E—Utility Energy Service**  
12 **Contracts Improvement**

13 **SEC. 3041. FINDINGS.**

14           Congress finds that—

15           (1) the Federal Government is the largest con-  
16           sumer of energy in the United States;

17           (2) Federal agencies are expected to meet, by  
18           law, Executive order, and mandate, stringent energy  
19           efficiency and conservation targets;

20           (3) the utility energy service contract (referred  
21           to in this section as “UESC”) was developed to pro-  
22           vide Federal agencies an effective means to imple-  
23           ment energy efficiency, renewable energy and water  
24           efficiency projects, and has been used successfully to

1 invest nearly \$2,700,000,000 in property at Federal  
2 facilities;

3 (4) the General Services Administration, which  
4 manages more than 9,600 Federal properties and is  
5 the lead agency for procuring utility services for the  
6 Federal Government, has determined that UESCs  
7 may extend beyond a 10-year period under the law;

8 (5) the Federal Energy Management Program,  
9 which oversees the UESC program and is a principal  
10 office guiding agencies to use funding more effec-  
11 tively in meeting Federal and agency-specific energy  
12 and resource management objectives, has determined  
13 that UESCs may extend beyond a 10-year period  
14 under the law;

15 (6) extensive precedent exists for Federal agen-  
16 cies to contract for energy saving services using con-  
17 tracts with term limits of more than 10 years but  
18 not to exceed 25 years;

19 (7) a number of Federal agencies, contrary to  
20 congressional intent, have sought to limit UESC  
21 term limits to periods of less than 10 years; and

22 (8) greater flexibility with UESCs will help re-  
23 duce the operational cost of Federal agencies, ulti-  
24 mately saving money for taxpayers.



1 **SEC. 3042. UTILITY ENERGY SERVICE CONTRACTS.**

2 Part 3 of title V of the National Energy Conservation  
3 Policy Act (as amended by section 2151) is amended by  
4 adding after section 554 the following:

5 **“SEC. 555. UTILITY ENERGY SERVICE CONTRACTS.**

6 “(a) IN GENERAL.—Each Federal agency may use,  
7 to the maximum extent practicable, measures provided by  
8 law to meet energy efficiency and conservation mandates  
9 and laws, including through utility energy service con-  
10 tracts.

11 “(b) CONTRACT PERIOD.—The term of a utility en-  
12 ergy service contract entered into by a Federal agency may  
13 have a contract period that extends beyond 10 years, but  
14 not to exceed 25 years.

15 “(c) REQUIREMENTS.—The conditions of a utility en-  
16 ergy service contract entered into by a Federal agency  
17 shall include requirements for measurement, verification,  
18 and performance assurances or guarantees of the sav-  
19 ings.”.

20 **Subtitle F—State Residential**  
21 **Building Energy Efficiency**  
22 **Loan Pilot Program**

23 **SEC. 3051. STATE RESIDENTIAL BUILDING ENERGY EFFI-**  
24 **CIENCY UPGRADES LOAN PILOT PROGRAM.**

25 (a) LOANS FOR RESIDENTIAL BUILDING ENERGY  
26 EFFICIENCY UPGRADES.—Part D of title III of the En-

1 energy Policy and Conservation Act (42 U.S.C. 6321 et seq.)

2 is amended by adding at the end the following:

3 **“SEC. 367. LOANS FOR RESIDENTIAL BUILDING ENERGY EF-**  
4 **FICIENCY UPGRADES.**

5 “(a) DEFINITIONS.—In this section:

6 “(1) CONSUMER-FRIENDLY.—The term ‘con-

7 sumer-friendly’, with respect to a loan repayment

8 approach, means a loan repayment approach that—

9 “(A) emphasizes convenience for cus-

10 tomers;

11 “(B) is of low cost to consumers; and

12 “(C) emphasizes simplicity and ease of use

13 for consumers in the billing process.

14 “(2) ELIGIBLE ENTITY.—The term ‘eligible en-

15 tity’ means—

16 “(A) a State or territory of the United

17 States; and

18 “(B) a tribal organization (as defined in

19 section 4 of the Indian Self-Determination and

20 Education Assistance Act (25 U.S.C. 450b)).

21 “(3) ENERGY ADVISOR PROGRAM.—

22 “(A) IN GENERAL.—The term ‘energy ad-

23 visor program’ means any program to provide

24 to owners or residents of residential buildings

25 advice, information, and support in the identi-

1           fication, prioritization, and implementation of  
2           energy efficiency and energy savings measures.

3           “(B) INCLUSIONS.—The term ‘energy ad-  
4           visor program’ includes a program that pro-  
5           vides—

6                   “(i) interpretation of energy audit re-  
7                   ports;

8                   “(ii) assistance in the prioritization of  
9                   improvements;

10                   “(iii) assistance in finding qualified  
11                   contractors;

12                   “(iv) assistance in contractor bid re-  
13                   views;

14                   “(v) education on energy conservation  
15                   and energy efficiency;

16                   “(vi) explanations of available incen-  
17                   tives and tax credits;

18                   “(vii) assistance in completion of re-  
19                   bate and incentive paperwork; and

20                   “(viii) any other similar type of sup-  
21                   port.

22           “(4) ENERGY EFFICIENCY.—The term ‘energy  
23           efficiency’ means a decrease in homeowner or resi-  
24           dential tenant consumption of energy (including elec-

1       tricity and thermal energy) that is achieved without  
2       reducing the quality of energy services through—

3               “(A) a measure or program that targets  
4       customer behavior;

5               “(B) equipment or energy systems;

6               “(C) a device; or

7               “(D) other material.

8       “(5) ENERGY EFFICIENCY UPGRADE.—

9               “(A) IN GENERAL.—The term ‘energy effi-  
10       ciency upgrade’ means any project or activity—

11               “(i) the primary purpose of which is  
12       increasing energy efficiency; and

13               “(ii) that is carried out on a residen-  
14       tial building.

15               “(B) INCLUSIONS.—The term ‘energy effi-  
16       ciency upgrade’ includes the installation or im-  
17       provement of a renewable energy facility for  
18       heating or electricity generation serving a resi-  
19       dential building carried out in conjunction with  
20       an energy efficiency project or activity.

21       “(6) PROGRAM ENTITY.—The term ‘program  
22       entity’ means a local government, utility, or other  
23       entity that carries out a financing program under  
24       subsection (e)(2)(A) pursuant to a contract or other  
25       agreement with an eligible entity.

1           “(7) RECIPIENT HOUSEHOLD.—The term ‘re-  
2 recipient household’ means the owner or tenant of a  
3 residential building who receives financing under  
4 this section for an energy efficiency upgrade of the  
5 residential building.

6           “(8) RESIDENTIAL BUILDING.—

7           “(A) IN GENERAL.—The term ‘residential  
8 building’ means a building used for residential  
9 purposes.

10           “(B) INCLUSIONS.—The term ‘residential  
11 building’ includes—

12           “(i) a single-family residence;

13           “(ii) a multifamily residence composed  
14 not more than 4 units; and

15           “(iii) a mixed-use building that in-  
16 cludes not more than 4 residential units.

17           “(b) ESTABLISHMENT OF PROGRAM.—

18           “(1) IN GENERAL.—The Secretary shall estab-  
19 lish a program under this part under which the Sec-  
20 retary shall make available to eligible entities loans  
21 for the purpose of establishing or expanding pro-  
22 grams that provide to recipient households financing  
23 for energy efficiency upgrades of residential build-  
24 ings.

1           “(2) CONSULTATION.—In establishing the pro-  
2           gram under paragraph (1), the Secretary shall con-  
3           sult, as the Secretary determines to be appropriate,  
4           with stakeholders and the public.

5           “(3) NO REQUIREMENT TO PARTICIPATE.—No  
6           eligible entity shall be required to participate in any  
7           manner in the program established under paragraph  
8           (1).

9           “(4) DEADLINES.—The Secretary shall—

10           “(A) not later than 1 year after the date  
11           of enactment of this section, implement the pro-  
12           gram established under paragraph (1) (includ-  
13           ing soliciting applications from eligible entities  
14           in accordance with subsection (c)); and

15           “(B) not later than 2 years after the date  
16           of enactment of this section, disburse the initial  
17           loans provided under this section.

18           “(c) APPLICATIONS.—

19           “(1) IN GENERAL.—To be eligible to receive a  
20           loan under this section, an eligible entity shall sub-  
21           mit to the Secretary an application at such time, in  
22           such manner, and containing such information as  
23           the Secretary may require.

24           “(2) SELECTION DATE.—Not later than 21  
25           months after the date of enactment of this section,

1 the Secretary shall select eligible entities to receive  
2 the initial loans provided under this section, in ac-  
3 cordance with the requirements described in para-  
4 graph (3).

5 “(3) REQUIREMENTS.—In selecting eligible en-  
6 tities to receive loans under this section, the Sec-  
7 retary shall—

8 “(A) to the maximum extent practicable,  
9 ensure—

10 “(i) that both innovative and estab-  
11 lished approaches to the challenges of fi-  
12 nancing energy efficiency upgrades are  
13 supported;

14 “(ii) that energy efficiency upgrades  
15 are conducted and validated to comply with  
16 best practices for work quality, as deter-  
17 mined by the Secretary;

18 “(iii) regional diversity among eligible  
19 entities that receive the loans, including  
20 participation by rural States and small  
21 States;

22 “(iv) significant participation by fami-  
23 lies with income levels at or below the me-  
24 dian income level for the applicable geo-

1 graphical region, as determined by the Sec-  
2 retary; and

3 “(v) the incorporation of an energy  
4 advisor program by, as applicable—

5 “(I) eligible entities; or

6 “(II) program entities;

7 “(B) evaluate applications based primarily  
8 on—

9 “(i) the projected reduction in energy  
10 use, as determined in accordance with such  
11 specific and commonly available method-  
12 ology as the Secretary shall establish, by  
13 regulation;

14 “(ii) the creditworthiness of the eligi-  
15 ble entity; and

16 “(iii) the incorporation of measures  
17 for making the loan repayment system for  
18 recipient households as consumer-friendly  
19 as practicable;

20 “(C) evaluate applications based second-  
21 arily on—

22 “(i) the extent to which the proposed  
23 financing program of the eligible entity in-  
24 corporates best practices for such a pro-  
25 gram, as determined by the Secretary;



1                   “(ii)(I) whether the eligible entity has  
2                   created a plan for evaluating the effective-  
3                   ness of the proposed financing program;  
4                   and

5                   “(II) whether that plan includes—

6                   “(aa) a robust strategy for col-  
7                   lecting, managing, and analyzing  
8                   data, as well as making the data  
9                   available to the public; and

10                  “(bb) experimental studies, which  
11                  may include investigations of how  
12                  human behavior impacts the effective-  
13                  ness of efficiency improvements;

14                  “(iii) the extent to which Federal  
15                  funds are matched by funding from State,  
16                  local, philanthropic, private sector, and  
17                  other sources;

18                  “(iv) the extent to which the proposed  
19                  financing program will be coordinated and  
20                  marketed with other existing or planned  
21                  energy efficiency or energy conservation  
22                  programs administered by—

23                  “(I) utilities and rural coopera-  
24                  tives;

1                   “(II) State, tribal, territorial, or  
2                   local governments; or

3                   “(III) community development fi-  
4                   nancial institutions; and

5                   “(v) such other factors as the Sec-  
6                   retary determines to be appropriate; and

7                   “(D) not provide an advantage or dis-  
8                   advantage to applications that include renew-  
9                   able energy in the program.

10                  “(d) ADMINISTRATIVE PROVISIONS.—

11                   “(1) TERM.—The Secretary shall establish  
12                  terms for loans provided to eligible entities under  
13                  this section—

14                   “(A) in a manner that—

15                   “(i) provides for a high degree of cost  
16                   recovery; and

17                   “(ii) ensures that, with respect to all  
18                   loans provided to or by eligible entities  
19                   under this section, the loans are competi-  
20                   tive with, or superior to, other forms of fi-  
21                   nancing for similar purposes; and

22                   “(B) subject to the condition that the term  
23                   of a loan provided to an eligible entity under  
24                   this section shall not exceed 35 years.

25                   “(2) INTEREST RATES.—

1           “(A) IN GENERAL.—Subject to subpara-  
2 graph (B), the Secretary, at the discretion of  
3 the Secretary, shall charge interest on a loan  
4 provided to an eligible entity under this section  
5 at a fixed rate equal, or approximately equal, to  
6 the interest rate charged on Treasury securities  
7 of comparable maturity.

8           “(B) LEVERAGED LOANS.—The interest  
9 rate and other terms of the loans provided to  
10 eligible entities under this section shall be es-  
11 tablished in a manner that ensures that the  
12 total amount of the loans is equal to not less  
13 than 20 times, and not more than 50 times, an  
14 amount equivalent to 80 percent of the amount  
15 appropriated for administrative and general fi-  
16 nancial support costs pursuant to subsection  
17 (g)(2).

18           “(3) NO PENALTY ON EARLY REPAYMENT.—  
19 The Secretary shall not assess any penalty for early  
20 repayment by an eligible entity of a loan provided  
21 under this section.

22           “(4) RETURN OF UNUSED PORTION.—As a con-  
23 dition of receipt of a loan under this section, an eli-  
24 gible entity shall agree to return to the general fund  
25 of the Treasury any portion of the loan amount that

1 is unused by the eligible entity within a reasonable  
2 period after the date of receipt of the loan, as deter-  
3 mined by the Secretary.

4 “(e) USE OF FUNDS.—

5 “(1) IN GENERAL.—An eligible entity shall use  
6 a loan provided under this section to establish or ex-  
7 pand 1 or more financing programs—

8 “(A) the purpose of which is to enable re-  
9 cipient households to undertake energy effi-  
10 ciency upgrades of residential buildings;

11 “(B) that may, at the sole discretion of the  
12 eligible entity, require an outlay of capital by  
13 recipient households in accordance with the  
14 goals of the program under this section; and

15 “(C) that incorporate a consumer-friendly  
16 loan repayment approach.

17 “(2) STRUCTURE OF FINANCING PROGRAM.—A  
18 financing program of an eligible entity may—

19 “(A) consist—

20 “(i) primarily or entirely of a financ-  
21 ing program administered by—

22 “(I) the applicable State; or

23 “(II) a program entity; or

24 “(ii) of a combination of programs de-  
25 scribed in clause (i);

1 “(B) rely on financing provided by—

2 “(i) the eligible entity; or

3 “(ii) a third party, acting through the  
4 eligible entity; and

5 “(C) include a provision pursuant to which  
6 a recipient household shall agree to return to  
7 the eligible entity any portion of the assistance  
8 that is unused by the recipient household within  
9 a reasonable period after the date of receipt of  
10 the assistance, as determined by the eligible en-  
11 tity.

12 “(3) FORM OF ASSISTANCE.—Assistance from  
13 an eligible entity under this subsection may be pro-  
14 vided in any form, or in accordance with any pro-  
15 gram, authorized by Federal law (including regula-  
16 tions), including in the form of—

17 “(A) a revolving loan fund;

18 “(B) a credit enhancement structure de-  
19 signed to mitigate the effects of default; or

20 “(C) a program that—

21 “(i) adopts any other approach for  
22 providing financing for energy efficiency  
23 upgrades producing significant energy effi-  
24 ciency gains; and

1                   “(ii) incorporates measures for mak-  
2                   ing the loan repayment system for recipi-  
3                   ent households as consumer-friendly as  
4                   practicable.

5                   “(4) SCOPE OF ASSISTANCE.—Assistance pro-  
6                   vided by an eligible entity under this subsection may  
7                   be used to pay for costs associated with carrying out  
8                   an energy efficiency upgrade, including materials  
9                   and labor.

10                  “(5) ADDITIONAL ASSISTANCE.—In addition to  
11                  the amount of the loan provided to an eligible entity  
12                  by the Secretary under subsection (b), the eligible  
13                  entity or program entity, as applicable, may provide  
14                  to recipient households such assistance under this  
15                  subsection as the eligible entity or program entity  
16                  considers to be appropriate from any other funds of  
17                  the eligible entity or program entity, including funds  
18                  provided to the eligible entity by the Secretary for  
19                  administrative costs pursuant to this section.

20                  “(6) LIMITATIONS.—

21                         “(A) INTEREST RATES.—

22                                 “(i) INTEREST CHARGED BY ELIGIBLE  
23                                 ENTITIES.—The interest rate charged by  
24                                 an eligible entity on assistance provided  
25                                 under this subsection—

1 “(I) shall be fixed; and

2 “(II) shall not exceed the interest  
3 rate paid by the eligible entity to the  
4 Secretary under subsection (d)(2).

5 “(ii) INTEREST CHARGED BY PRO-  
6 GRAM ENTITIES.—A program entity that  
7 receives funding from an eligible entity  
8 under this subsection for the purpose of  
9 capitalizing a residential energy efficiency  
10 financing program may charge interest on  
11 any loan provided by the program entity at  
12 a fixed rate that is as low as practicable,  
13 but not more than 5 percent more than the  
14 applicable interest rate paid by the eligible  
15 entity to the Secretary under subsection  
16 (d)(2).

17 “(B) NO PENALTY ON EARLY REPAY-  
18 MENT.—An eligible entity or program entity, as  
19 applicable, shall not assess any penalty for early  
20 repayment by any recipient household to the eli-  
21 gible entity or program entity, as applicable.

22 “(f) REPORTS.—

23 “(1) ELIGIBLE ENTITIES.—

24 “(A) IN GENERAL.—Not later than 2 years  
25 after the date of receipt of the loan, and annu-

1           ally thereafter for the term of the loan, an eligi-  
2           ble entity that receives a loan under this section  
3           shall submit to the Secretary a report describ-  
4           ing the performance of each program and activ-  
5           ity carried out using the loan, including  
6           anonymized loan performance data.

7           “(B) REQUIREMENTS.—The Secretary, in  
8           consultation with eligible entities and other  
9           stakeholders (such as lending institutions and  
10          the real estate industry), shall establish such re-  
11          quirements for the reports under this para-  
12          graph as the Secretary determines to be appro-  
13          priate—

14                   “(i) to ensure that the reports are  
15                   clear, consistent, and straightforward; and

16                   “(ii) taking into account the reporting  
17                   requirements for similar programs in  
18                   which the eligible entities are participating,  
19                   if any.

20          “(2) SECRETARY.—The Secretary shall submit  
21          to Congress and make available to the public—

22                   “(A) not less frequently than once each  
23                   year, a report describing the performance of the  
24                   program under this section, including a syn-  
25                   thesis and analysis of the information provided



1 in the reports submitted to the Secretary under  
2 paragraph (1)(A); and

3 “(B) on termination of the program under  
4 this section, an assessment of the success of,  
5 and education provided by, the measures car-  
6 ried out by eligible entities during the term of  
7 the program.

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

11 “(1) \$37,500,000 for energy advisor programs;

12 “(2) \$25,000,000 for administrative and gen-  
13 eral financial support costs to the Secretary of car-  
14 rying out this section; and

15 “(3) \$37,500,000 for administrative costs to  
16 States in carrying out this section.”.

17 (b) REORGANIZATION.—

18 (1) IN GENERAL.—Part D of title III of the  
19 Energy Policy and Conservation Act (42 U.S.C.  
20 6321 et seq.) is amended—

21 (A) by redesignating sections 362, 363,  
22 364, 365, and 366 as sections 364, 365, 366,  
23 363, and 362, respectively, and moving the sec-  
24 tions so as to appear in numerical order;

25 (B) in section 362 (as so redesignated)—

1 (i) in paragraph (3)(B)(i), by striking  
2 “section 367, and” and inserting “section  
3 367 (as in effect on the day before the  
4 date of enactment of the State Energy Ef-  
5 ficiency Programs Improvement Act of  
6 1990 (42 U.S.C. 6201 note; Public Law  
7 101–440)); and”;

8 (ii) in each of paragraphs (4) and (6),  
9 by striking “section 365(e)(1)” each place  
10 it appears and inserting “section  
11 363(e)(1)”;

12 (C) in section 363 (as so redesignated)—

13 (i) in subsection (b), by striking “the  
14 provisions of sections 362 and 364 and  
15 subsection (a) of section 363” and insert-  
16 ing “sections 364, 365(a), and 366”; and

17 (ii) in subsection (g)(1)(A), in the sec-  
18 ond sentence, by striking “section 362”  
19 and inserting “section 364”; and

20 (D) in section 365 (as so redesignated)—

21 (i) in subsection (a)—

22 (I) in paragraph (1), by striking  
23 “section 362,” and inserting “section  
24 364;”; and

1 (II) in paragraph (2), by striking  
 2 “section 362(b) or (e)” and inserting  
 3 “subsection (b) or (e) of section 364”;  
 4 and

5 (ii) in subsection (b)(2), in the matter  
 6 preceding subparagraph (A), by striking  
 7 “section 362(b) or (e)” and inserting “sub-  
 8 section (b) or (e) of section 364”.

9 (2) CONFORMING AMENDMENTS.—Section 391  
 10 of the Energy Policy and Conservation Act (42  
 11 U.S.C. 6371) is amended—

12 (A) in paragraph (2)(M), by striking “sec-  
 13 tion 365(e)(2)” and inserting “section  
 14 363(e)(2)”; and

15 (B) in paragraph (10), by striking “section  
 16 362 of this Act” and inserting “section 364”.

17 (3) CLERICAL AMENDMENT.—The table of con-  
 18 tents of the Energy Policy and Conservation Act (42  
 19 U.S.C. 6201 note; Public Law 94–163) is amended  
 20 by striking the items relating to part D of title III  
 21 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.”.

1           **Subtitle G—Smart Energy and**  
2                           **Water Efficiency**

3   **SEC. 3061. SMART ENERGY AND WATER EFFICIENCY PILOT**  
4                           **PROGRAM.**

5           Subtitle A of title IX of the Energy Policy Act of  
6   2005 (42 U.S.C. 16191 et seq.) is amended by adding at  
7   the end the following:

8   **“SEC. 918. SMART ENERGY AND WATER EFFICIENCY PILOT**  
9                           **PROGRAM.**

10          “(a) DEFINITIONS.—In this section:

11                  “(1) ELIGIBLE ENTITY.—The term ‘eligible en-  
12          tity’ means—

13                          “(A) a utility;

14                          “(B) a municipality;

15                          “(C) a water district;

16                          “(D) an Indian tribe or Alaska Native vil-  
17          lage; and

18                          “(E) any other authority that provides  
19          water, wastewater, or water reuse services.

20                  “(2) SMART ENERGY AND WATER EFFICIENCY  
21          PILOT PROGRAM.—The term ‘smart energy and  
22          water efficiency pilot program’ or ‘pilot program’  
23          means the pilot program established under sub-  
24          section (b).

1       “(b) SMART ENERGY AND WATER EFFICIENCY  
2 PILOT PROGRAM.—

3               “(1) IN GENERAL.—The Secretary shall estab-  
4 lish and carry out a smart energy and water effi-  
5 ciency pilot program in accordance with this section.

6               “(2) PURPOSE.—The purpose of the smart en-  
7 ergy and water efficiency pilot program is to award  
8 grants to eligible entities to demonstrate unique, ad-  
9 vanced, or innovative technology-based solutions that  
10 will—

11               “(A) increase the energy efficiency of  
12 water, wastewater, and water reuse systems;

13               “(B) improve energy efficiency of water,  
14 wastewater, and water reuse systems to help  
15 communities across the United States make  
16 measurable progress in conserving water, saving  
17 energy, and reducing costs;

18               “(C) support the implementation of inno-  
19 vative and unique processes and the installation  
20 of established advanced automated systems that  
21 provide real-time data on energy and water; and

22               “(D) improve energy-water conservation  
23 and quality and predictive maintenance through  
24 technologies that utilize internet connected

1 technologies, including sensors, intelligent gate-  
2 ways, and security embedded in hardware.

3 “(3) PROJECT SELECTION.—

4 “(A) IN GENERAL.—The Secretary shall  
5 make competitive, merit-reviewed grants under  
6 the pilot program to not less than 3, but not  
7 more than 5, eligible entities.

8 “(B) SELECTION CRITERIA.—In selecting  
9 an eligible entity to receive a grant under the  
10 pilot program, the Secretary shall consider—

11 “(i) energy and cost savings;

12 “(ii) the uniqueness, commercial via-  
13 bility, and reliability of the technology to  
14 be used;

15 “(iii) the degree to which the project  
16 integrates next-generation sensors soft-  
17 ware, analytics, and management tools;

18 “(iv) the anticipated cost-effectiveness  
19 of the pilot project through measurable en-  
20 ergy efficiency savings, water savings or  
21 reuse, and infrastructure costs averted;

22 “(v) whether the technology can be  
23 deployed in a variety of geographic regions  
24 and the degree to which the technology can  
25 be implemented in a wide range of applica-

1 tions ranging in scale from small towns to  
2 large cities, including tribal communities;

3 “(vi) whether the technology has been  
4 successfully deployed elsewhere;

5 “(vii) whether the technology was  
6 sourced from a manufacturer based in the  
7 United States; and

8 “(viii) whether the project will be  
9 completed in 5 years or less.

10 “(C) APPLICATIONS.—

11 “(i) IN GENERAL.—Subject to clause  
12 (ii), an eligible entity seeking a grant  
13 under the pilot program shall submit to  
14 the Secretary an application at such time,  
15 in such manner, and containing such infor-  
16 mation as the Secretary determines to be  
17 necessary.

18 “(ii) CONTENTS.—An application  
19 under clause (i) shall, at a minimum, in-  
20 clude—

21 “(I) a description of the project;

22 “(II) a description of the tech-  
23 nology to be used in the project;

1                   “(III) the anticipated results, in-  
2                   cluding energy and water savings, of  
3                   the project;

4                   “(IV) a comprehensive budget for  
5                   the project;

6                   “(V) the names of the project  
7                   lead organization and any partners;

8                   “(VI) the number of users to be  
9                   served by the project;

10                  “(VII) a description of the ways  
11                  in which the proposal would meet per-  
12                  formance measures established by the  
13                  Secretary; and

14                  “(VIII) any other information  
15                  that the Secretary determines to be  
16                  necessary to complete the review and  
17                  selection of a grant recipient.

18                  “(4) ADMINISTRATION.—

19                         “(A) IN GENERAL.—Not later than 300  
20                         days after the date of enactment of this section,  
21                         the Secretary shall select grant recipients under  
22                         this section.

23                         “(B) EVALUATIONS.—

24                                 “(i) ANNUAL EVALUATIONS.—The  
25                                 Secretary shall annually carry out an eval-



1           uation of each project for which a grant is  
2           provided under this section that meets per-  
3           formance measures and benchmarks devel-  
4           oped by the Secretary, consistent with the  
5           purposes of this section.

6           “(ii)     REQUIREMENTS.—Consistent  
7           with the performance measures and bench-  
8           marks developed under clause (i), in car-  
9           rying out an evaluation under that clause,  
10          the Secretary shall—

11                   “(I) evaluate the progress and  
12                   impact of the project; and

13                   “(II) assesses the degree to  
14                   which the project is meeting the goals  
15                   of the pilot program.

16          “(C)   TECHNICAL AND POLICY ASSIST-  
17          ANCE.—On the request of a grant recipient, the  
18          Secretary shall provide technical and policy as-  
19          sistance.

20          “(D)   BEST PRACTICES.—The Secretary  
21          shall make available to the public through the  
22          Internet and other means the Secretary con-  
23          siders to be appropriate—

24                   “(i) a copy of each evaluation carried  
25                   out under subparagraph (B); and

1                   “(ii) a description of any best prac-  
2                   tices identified by the Secretary as a result  
3                   of those evaluations.

4                   “(E) REPORT TO CONGRESS.—The Sec-  
5                   retary shall submit to Congress a report con-  
6                   taining the results of each evaluation carried  
7                   out under subparagraph (B).

8                   “(c) AUTHORIZATION OF APPROPRIATIONS.—There  
9                   is authorized to be appropriated to carry out this section  
10                  \$15,000,000, to remain available until expended.”.

11                  **Subtitle H—Regional Energy**  
12                  **Partnerships**

13                  **SEC. 3071. DEFINITIONS.**

14                  In this subtitle:

15                   (1) COOPERATIVE AGREEMENT.—The term “co-  
16                   operative agreement” has the meaning given the  
17                   term in sections 6302 and 6305 of title 31, United  
18                   States Code.

19                   (2) SECRETARIES.—The term “Secretaries”  
20                   means—

21                   (A) the Secretary, acting through the As-  
22                   sistant Secretary of the Office of Electricity De-  
23                   livery and Energy Reliability in consultation  
24                   with the Assistant Secretary of Energy Effi-  
25                   ciency and Renewable Energy, the Assistant

1 Secretary of Fossil Energy, and the Director of  
2 the Office of Nuclear Energy, Science, and  
3 Technology Programs; and

4 (B) the Secretary of the Interior, acting  
5 through the Assistant Secretary for Land and  
6 Minerals Management in consultation with the  
7 Director of the Bureau of Land Management,  
8 the Director of the Bureau of Ocean Energy  
9 Management, the Assistant Secretary for In-  
10 dian Affairs, and the Assistant Secretary for  
11 Fish and Wildlife and Parks.

12 (3) STATE.—The term “State” means—

13 (A) a State;

14 (B) the District of Columbia;

15 (C) the Commonwealth of Puerto Rico;

16 and

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

19 **SEC. 3072. REGIONAL ENERGY PARTNERSHIPS.**

20 (a) IN GENERAL.—The Secretaries shall provide as-  
21 sistance in accordance with this section for the purpose  
22 of developing energy strategies and plans that help har-  
23 monize and promote national, regional, and State energy  
24 goals, including goals for advancing resilient energy sys-

1 tems to mitigate risks and prepare for emerging energy  
2 challenges.

3 (b) TECHNICAL ASSISTANCE.—The Secretaries may  
4 provide such technical assistance to States, political sub-  
5 divisions of States, substate regional organizations (in-  
6 cluding organizations that cross State boundaries),  
7 multistate regional organizations, Indian tribes, and non-  
8 profit organizations as the Secretaries determine appro-  
9 priate to promote—

10 (1) the development and improvement of re-  
11 gional energy strategies, where appropriate, and  
12 plans that sustain and promote energy system mod-  
13 ernization across the United States;

14 (2) investment in energy infrastructure, techno-  
15 logical capacity, innovation, and workforce develop-  
16 ment to keep pace with the changing energy eco-  
17 system;

18 (3) structural transformation of the financial,  
19 regulatory, legal, and institutional systems that gov-  
20 ern energy planning, production, and delivery within  
21 States and regions; and

22 (4) public-private partnerships for the imple-  
23 mentation of regional energy strategies and plans.

24 (c) COOPERATIVE AGREEMENTS.—

1           (1) IN GENERAL.—The Secretaries may enter  
2 into cooperative agreements with one or more States  
3 and Indian tribes, on a regional basis, to develop  
4 and implement strategies and plans to address the  
5 energy challenges of States, Indian tribes, and re-  
6 gions.

7           (2) REQUIREMENTS.—A cooperative agreement  
8 entered into under this subsection shall include pro-  
9 visions covering or providing—

10                   (A) the purpose and goals of the coopera-  
11 tive agreement, such as advancing energy effi-  
12 ciency, clean energy, fuel and supply diversity,  
13 energy system resiliency, economic development,  
14 or other goals to make measurable, significant  
15 progress toward specified metrics and objectives  
16 that are agreed to by the States or Indian  
17 tribes and the Secretaries;

18                   (B) the roles and responsibilities of the  
19 States or Indian tribes and the Secretaries for  
20 various functions of the cooperative agreement,  
21 including outreach, communication, resources,  
22 and capabilities;

23                   (C) a comprehensive framework for the de-  
24 velopment of energy strategies and plans for  
25 States, Indian tribes, or regions;

1 (D) timeframes with associated metrics  
2 and objectives;

3 (E) a governance structure to resolve con-  
4 flicts and facilitate decisionmaking consistent  
5 with underlying authorities; and

6 (F) other provisions determined necessary  
7 by the Secretaries, in consultation with the  
8 States or Indian tribes, to achieve the purposes  
9 described in paragraph (1).

10 (d) STAFF.—

11 (1) IN GENERAL.—Not later than 30 days after  
12 the date of the entering into a cooperative agree-  
13 ment under subsection (c), the Secretaries shall, as  
14 appropriate, assign or employ individuals who have  
15 expertise in the technical and regulatory issues relat-  
16 ing to the cooperative agreement, including par-  
17 ticular expertise in (as applicable)—

18 (A) energy systems integration;

19 (B) renewable energy and energy effi-  
20 ciency;

21 (C) innovative financing mechanisms;

22 (D) utility regulatory policy;

23 (E) modeling and analysis;

24 (F) facilitation and arbitration;

1 (G) energy assurance and emergency pre-  
2 paredness; and

3 (H) cyber and physical security of energy  
4 systems.

5 (2) DUTIES.—Each individual assigned to carry  
6 out a cooperative agreement under paragraph (1)  
7 shall—

8 (A) report to a location in the applicable  
9 State, Indian tribe, or region not later than 90  
10 days after the date of assignment;

11 (B) be responsible for issues and technical  
12 assistance relating to the cooperative agree-  
13 ment;

14 (C) participate as part of the team of per-  
15 sonnel working on developing and implementing  
16 the applicable regional energy strategy and  
17 plan; and

18 (D) build capacity within the State, Indian  
19 tribe, or region to continue to implement the  
20 goals of this subtitle after the expiration of the  
21 cooperative agreement.

22 (e) COMPREHENSIVE FRAMEWORK.—Under a coop-  
23 erative agreement, a comprehensive framework shall be  
24 developed that identifies opportunities and actions across

1 various energy sectors and cross-cutting issue areas, in-  
2 cluding—

3 (1) end-use efficiency;

4 (2) energy supply, including electric generation  
5 and fuels;

6 (3) energy storage and delivery;

7 (4) transportation;

8 (5) technical integration, including standards  
9 and interdependencies;

10 (6) institutional structures;

11 (7) regulatory policies;

12 (8) financial incentives; and

13 (9) market mechanisms.

14 (f) AWARDS.—

15 (1) DEFINITIONS.—In this subsection:

16 (A) APPLICATION GROUP.—The term “ap-  
17 plication group” means a group of States or In-  
18 dian tribes that have—

19 (i) entered into a cooperative agree-  
20 ment, on a regional basis, with the Secre-  
21 taries under subsection (c); and

22 (ii) submitted an application for an  
23 award under paragraph (2)(A).



1 (B) PARTNER STATE.—The term “partner  
2 State” means a State or Indian tribe that is  
3 part of an application group.

4 (2) APPLICATIONS.—

5 (A) IN GENERAL.—Subject to subpara-  
6 graph (B), an application group may apply to  
7 the Secretaries for awards under this sub-  
8 section.

9 (B) INDIVIDUAL STATES.—An individual  
10 State or Indian tribe that has entered into a co-  
11 operative agreement with the Secretaries under  
12 subsection (c) may apply to the Secretaries for  
13 an award under this subsection if the State or  
14 Indian tribe demonstrates to the Secretaries the  
15 uniqueness of the energy challenges facing the  
16 State or Indian tribe.

17 (3) BASE AMOUNT.—Subject to paragraph (4),  
18 the Secretaries shall provide 6 awards under this  
19 subsection, with a base amount of \$20,000,000 for  
20 each award.

21 (4) BONUS AMOUNT FOR APPLICATION  
22 GROUPS.—

23 (A) IN GENERAL.—Subject to subpara-  
24 graph (B), the Secretaries shall increase the  
25 amount of an award provided under this sub-

1 section to an application group for a successful  
2 application under paragraph (2)(A) by the  
3 quotient obtained by dividing—

4 (i) the product obtained by multi-  
5 plying—

6 (I) the number of partner States  
7 in the application group; and

8 (II) \$100,000,000; by

9 (ii) the total number of partner States  
10 of all successful applications under this  
11 subsection.

12 (B) MAXIMUM AMOUNT.—The amount of a  
13 bonus determined under subparagraph (A) shall  
14 not exceed an amount that represents  
15 \$5,000,000 for each partner State that is a  
16 member of the relevant application group.

17 (5) LIMITATION.—A State or Indian tribe shall  
18 not be part of more than 1 award under this sub-  
19 section.

20 (6) SELECTION CRITERIA.—In selecting appli-  
21 cations for awards under this subsection, the Secre-  
22 taries shall consider—

23 (A) existing commitments from States or  
24 Indian tribes, such as memoranda of under-  
25 standing;

1 (B) for States that are part of the contig-  
2 uous 48 States, the number of contiguous  
3 States involved that cover a region;

4 (C) the diversity of the regions represented  
5 by all applications;

6 (D) the amount of cost-share or in-kind  
7 contributions from States or Indian tribes;

8 (E) the scope and focus of regional and  
9 State programs and strategies, with an empha-  
10 sis on energy system resiliency and grid mod-  
11 ernization, efficiency, and clean energy;

12 (F) a management and oversight plan to  
13 ensure that objectives are met;

14 (G) an outreach plan for the inclusion of  
15 stakeholders in the process for developing and  
16 implementing State or regional energy strate-  
17 gies and plans;

18 (H) the inclusion of tribal entities;

19 (I) plans to fund and sustain activities  
20 identified in regional energy strategies and  
21 plans; and

22 (J) the clarity of roles and responsibilities  
23 of each State and the Secretaries.

24 (7) USE OF AWARDS.—

1 (A) IN GENERAL.—Awards provided under  
2 this subsection shall be used to achieve the pur-  
3 pose of this section, including by—

4 (i) conducting technical analyses, re-  
5 source studies, and energy system base-  
6 lines;

7 (ii) convening and providing education  
8 to stakeholders on emerging energy issues;

9 (iii) building decision support and  
10 planning tools; and

11 (iv) improving communication between  
12 and participation of stakeholders.

13 (B) LIMITATION.—Awards provided under  
14 this subsection shall not be used for—

15 (i) capitalization of green banks or  
16 loan guarantees; or

17 (ii) building facilities or funding cap-  
18 ital projects.

19 **SEC. 3073. AUTHORIZATION OF APPROPRIATIONS.**

20 (a) IN GENERAL.—There is authorized to be appro-  
21 priated to carry out this subtitle \$250,000,000, to remain  
22 available until expended.

23 (b) ALLOCATION.—Of the amount authorized to be  
24 appropriated under subsection (a)—

1           (1) \$120,000,000 shall be used for the base  
2 amount of awards under section 3072(f)(3);

3           (2) \$100,000,000 shall be used for the bonus  
4 amount of awards under section 3072(f)(4); and

5           (3) \$30,000,000 shall be for the administration  
6 of this subtitle, including—

7                 (A) the assignment of staff under section  
8 3072(d); and

9                 (B) if the Secretaries determine appro-  
10 priate, the sharing of best practices from re-  
11 gional partnerships by parties to cooperative  
12 agreements entered into under this subtitle.

13         (c) STATE ENERGY OFFICES.—Funds provided to a  
14 State under this subtitle shall be provided to the office  
15 within the State that is responsible for developing the  
16 State energy plan for the State under part D of title III  
17 of the Energy Policy and Conservation Act (42 U.S.C.  
18 6321 et seq.).

19         (d) MAINTENANCE OF FUNDING.—The funding pro-  
20 vided to States under this subtitle shall supplement (and  
21 not supplant) funding provided under part D of title III  
22 of the Energy Policy and Conservation Act (42 U.S.C.  
23 6321 et seq.).

1       **Subtitle I—Energy Productivity**  
2                   **Innovation Challenge**

3       **SEC. 3081. DEFINITIONS.**

4           In this subtitle:

5               (1) ENERGY PRODUCTIVITY.—The term “en-  
6           energy productivity” means, in the case of a State or  
7           Indian tribe, the gross State or tribal product per  
8           British thermal unit of energy consumed in the  
9           State or tribal land of the Indian tribe, respectively.

10               (2) INDIAN TRIBE.—The term “Indian tribe”  
11           has the meaning given the term in section 4 of the  
12           Indian Self-Determination and Education Assistance  
13           Act (25 U.S.C. 450b).

14               (3) STATE.—The term “State” has the mean-  
15           ing given the term in section 3 of the Energy Policy  
16           and Conservation Act (42 U.S.C. 6202).

17       **SEC. 3082. PHASE 1: INITIAL ALLOCATION OF GRANTS TO**  
18                   **STATES.**

19           (a) IN GENERAL.—Not later than 30 days after the  
20           date of enactment of this Act, the Secretary shall issue  
21           an invitation to States to submit plans to participate in  
22           an electric and thermal energy productivity challenge in  
23           accordance with this section.

24           (b) GRANTS.—

1           (1) IN GENERAL.—Subject to section 3085, the  
2           Secretary shall use funds made available under sec-  
3           tion 3086(b)(1) to provide an initial allocation of  
4           grants to not more than 25 States.

5           (2) AMOUNT.—The amount of a grant provided  
6           to a State under this section shall be not less than  
7           \$500,000 nor more than \$1,750,000.

8           (c) SUBMISSION OF PLANS.—To receive a grant  
9           under this section, not later than 90 days after the date  
10          of issuance of the invitation under subsection (a), a State  
11          (in consultation with energy utilities, regulatory bodies,  
12          and others) shall submit to the Secretary an application  
13          to receive the grant by submitting a revised State energy  
14          conservation plan under section 362 of the Energy Policy  
15          and Conservation Act (42 U.S.C. 6322).

16          (d) DECISION BY SECRETARY.—

17               (1) BASIS.—The Secretary shall base the deci-  
18               sion of the Secretary on an application submitted  
19               under this section on—

20                       (A) plans for improvement in electric and  
21                       thermal energy productivity consistent with this  
22                       subtitle; and

23                       (B) other factors determined appropriate  
24                       by the Secretary, including geographic diversity.

25               (2) RANKING.—The Secretary shall—

1 (A) rank revised plans submitted under  
2 this section in order of the greatest to least  
3 likely contribution to improving energy produc-  
4 tivity in the State; and

5 (B) provide grants under this section in  
6 accordance with the ranking and the scale and  
7 scope of a plan.

8 (e) PLAN REQUIREMENTS.—A plan submitted under  
9 subsection (c) shall provide—

10 (1) a description of the manner in which—

11 (A) energy savings will be monitored and  
12 verified and energy productivity improvements  
13 will be calculated using inflation-adjusted dol-  
14 lars;

15 (B) a statewide baseline of energy use and  
16 potential resources for calendar year 2010 will  
17 be established to measure improvements;

18 (C) the plan will promote achievement of  
19 energy savings and demand reduction goals;

20 (D) public and private sector investments  
21 in energy efficiency will be leveraged with avail-  
22 able Federal funding; and

23 (E) the plan will not cause cost-shifting  
24 among utility customer classes or negatively im-  
25 pact low-income populations; and



1 (2) an assurance that—

2 (A) the State energy office required to sub-  
3 mit the plan, the energy utilities in the State  
4 participating in the plan, and the State public  
5 service commission are cooperating and coordi-  
6 nating programs and activities under this sub-  
7 title;

8 (B) the State is cooperating with local  
9 units of government, Indian tribes, and energy  
10 utilities to expand programs as appropriate;  
11 and

12 (C) grants provided under this subtitle will  
13 be used to supplement and not supplant Fed-  
14 eral, State, or ratepayer-funded programs or ac-  
15 tivities in existence on the date of enactment of  
16 this Act.

17 (f) USES.—A State may use grants provided under  
18 this section to promote—

19 (1) the expansion of policies and programs that  
20 will advance industrial energy efficiency, waste heat  
21 recovery, combined heat and power, and waste heat-  
22 to-power utilization;

23 (2) the expansion of policies and programs that  
24 will advance energy efficiency construction and ret-  
25 rofits for public and private commercial buildings

1 (including schools, hospitals, and residential build-  
2 ings, including multifamily buildings) such as  
3 through expanded energy service performance con-  
4 tracts, equivalent utility energy service contracts,  
5 zero net-energy buildings, and improved building en-  
6 ergy efficiency codes;

7 (3) the expansion of residential policies and  
8 programs designed to implement best practice poli-  
9 cies and tools for residential retrofit programs  
10 that—

11 (A) reduce administrative and delivery  
12 costs for energy efficiency projects;

13 (B) encourage streamlining and automa-  
14 tion to support contractor engagement; and

15 (C) implement systems that encourage pri-  
16 vate investment and market innovation;

17 (4) the establishment or expansion of incentives  
18 in the electric utility sector to enhance demand re-  
19 sponse and energy efficiency, including consideration  
20 of additional incentives to promote the purposes of  
21 section 111(d) of the Public Utility Regulatory Poli-  
22 cies Act of 1978 (16 U.S.C. 2621(d)), such as ap-  
23 propriate, cost-effective policies regarding rate struc-  
24 tures, grid improvements, behavior change, combined  
25 heat and power and waste heat-to-power incentives,

1 financing of energy efficiency programs, data use in-  
2 centives, district heating, and regular energy audits;  
3 and

4 (5) leadership by example, in which State ac-  
5 tivities involving both facilities and vehicle fleets can  
6 be a model for other action to promote energy effi-  
7 ciency and can be expanded with Federal grants pro-  
8 vided under this subtitle.

9 **SEC. 3083. PHASE 2: SUBSEQUENT ALLOCATION OF GRANTS**  
10 **TO STATES.**

11 (a) **REPORTS.**—Not later than 18 months after the  
12 receipt of grants under section 3082, each State (in con-  
13 sultation with other parties described in subsection  
14 (b)(3)(F)) that received grants under section 3082 may  
15 submit to the Secretary a report that describes—

16 (1) the performance of the programs and activi-  
17 ties carried out with the grants; and

18 (2) in consultation with other parties described  
19 in subsection (b)(3)(F), the manner in which addi-  
20 tional funds would be used to carry out programs  
21 and activities to promote the purposes of this sub-  
22 title.

23 (b) **GRANTS.**—

24 (1) **IN GENERAL.**—Not later than 180 days  
25 after the date of the receipt of the reports required

1 under subsection (a), subject to section 3085, the  
2 Secretary shall use amounts made available under  
3 section 3086(b)(2) to provide grants to not more  
4 than 6 States to carry out the programs and activi-  
5 ties described in subsection (a)(2).

6 (2) AMOUNT.—The amount of a grant provided  
7 to a State under this section shall be not more than  
8 \$15,000,000.

9 (3) BASIS.—The Secretary shall base the deci-  
10 sion of the Secretary to provide grants under this  
11 section on—

12 (A) the performance of the State in the  
13 programs and activities carried out with grants  
14 provided under section 3082;

15 (B) the potential of the programs and ac-  
16 tivities described in subsection (a)(2) to achieve  
17 the purposes of this subtitle;

18 (C) the desirability of maintaining a total  
19 project portfolio that is geographically and  
20 functionally diverse;

21 (D) the amount of non-Federal funds that  
22 are leveraged as a result of the grants to ensure  
23 that Federal dollars are leveraged effectively;

1 (E) plans for continuation of the improve-  
2 ments after the receipt of grants under this  
3 subtitle; and

4 (F) demonstrated effort by the State to in-  
5 volve diverse groups, including—

6 (i) investor-owned, cooperative, and  
7 public power utilities;

8 (ii) local governments; and

9 (iii) nonprofit organizations.

10 **SEC. 3084. ALLOCATION OF GRANTS TO INDIAN TRIBES.**

11 (a) IN GENERAL.—Not later than 30 days after the  
12 date of enactment of this Act, the Secretary shall invite  
13 Indian tribes to submit plans to participate in an electric  
14 and thermal energy productivity challenge in accordance  
15 with this section.

16 (b) SUBMISSION OF PLANS.—To receive a grant  
17 under this section, not later than 90 days after the date  
18 of issuance of the invitation under subsection (a), an In-  
19 dian tribe shall submit to the Secretary a plan to increase  
20 electric and thermal energy productivity by the Indian  
21 tribe.

22 (c) DECISION BY SECRETARY.—

23 (1) IN GENERAL.—Not later than 90 days after  
24 the submission of plans under subsection (b), the

1 Secretary shall make a final decision on the alloca-  
2 tion of grants under this section.

3 (2) BASIS.—The Secretary shall base the deci-  
4 sion of the Secretary under paragraph (1) on—

5 (A) plans for improvement in electric and  
6 thermal energy productivity consistent with this  
7 subtitle;

8 (B) plans for continuation of the improve-  
9 ments after the receipt of grants under this  
10 subtitle; and

11 (C) other factors determined appropriate  
12 by the Secretary, including—

13 (i) geographic diversity; and

14 (ii) size differences among Indian  
15 tribes.

16 (3) LIMITATION.—An individual Indian tribe  
17 shall not receive more than 20 percent of the total  
18 amount available to carry out this section.

19 **SEC. 3085. ADMINISTRATION.**

20 (a) INDEPENDENT EVALUATION.—To evaluate pro-  
21 gram performance and effectiveness under this subtitle,  
22 the Secretary shall consult with the National Research  
23 Council regarding requirements for data and evaluation  
24 for recipients of grants under this subtitle.

1 (b) COORDINATION WITH STATE ENERGY CON-  
2 SERVATION PROGRAMS.—

3 (1) IN GENERAL.—Grants to States under this  
4 subtitle shall be provided through additional funding  
5 to carry out State energy conservation programs  
6 under part D of title III of the Energy Policy and  
7 Conservation Act (42 U.S.C. 6321 et seq.).

8 (2) RELATIONSHIP TO STATE ENERGY CON-  
9 SERVATION PROGRAMS.—

10 (A) IN GENERAL.—A grant provided to a  
11 State under this subtitle shall be used to sup-  
12 plement (and not supplant) funds provided to  
13 the State under part D of title III of the En-  
14 ergy Policy and Conservation Act (42 U.S.C.  
15 6321 et seq.).

16 (B) MINIMUM FUNDING.—A grant shall  
17 not be provided to a State for a fiscal year  
18 under this subtitle if the amount of funding  
19 provided to all State grantees under the base  
20 formula for the fiscal year under part D of title  
21 III of the Energy Policy and Conservation Act  
22 (42 U.S.C. 6321 et seq.) is less than  
23 \$50,000,000.

1 (c) VOLUNTARY PARTICIPATION.—The participation  
2 of a State in a challenge established under this subtitle  
3 shall be voluntary.

4 **SEC. 3086. AUTHORIZATION OF APPROPRIATIONS.**

5 (a) IN GENERAL.—There is authorized to be appro-  
6 priated to carry out this subtitle \$100,000,000 for the pe-  
7 riod of fiscal years 2016 and 2017.

8 (b) ALLOCATION.—Of the total amount of funds  
9 made available under subsection (a)—

10 (1) 30 percent shall be used to provide an ini-  
11 tial allocation of grants to States under section  
12 3082;

13 (2) 61 percent shall be used to provide a subse-  
14 quent allocation of grants to States under section  
15 3083;

16 (3) 4 percent shall be used to make grants to  
17 Indian tribes under section 3084; and

18 (4) 5 percent shall be available to the Secretary  
19 for the cost of administration and technical support  
20 to carry out this subtitle.

21 **Subtitle J—Smart Buildings**

22 **SEC. 3091. DEFINITIONS.**

23 (a) DEFINITIONS.—In this section:



1           (1) PROGRAM.—The term “program” means  
2           the Federal Smart Building Program established  
3           under subsection (b)(1).

4           (2) SMART BUILDING.—The term “smart build-  
5           ing” means a building, or collection of buildings,  
6           with an energy system that—

7                   (A) is flexible and automated;

8                   (B) has extensive operational monitoring  
9                   and communication connectivity, allowing re-  
10                  mote monitoring and analysis of all building  
11                  functions;

12                  (C) takes a systems-based approach in in-  
13                  tegrating the overall building operations for  
14                  control of energy generation, consumption, and  
15                  storage;

16                  (D) communicates with utilities and other  
17                  third-party commercial entities, if appropriate;  
18                  and

19                  (E) is cybersecure.

20           (3) SMART BUILDING ACCELERATOR.—The  
21           term “smart building accelerator” means an initia-  
22           tive that is designed to demonstrate specific innova-  
23           tive policies and approaches—

24                   (A) with clear goals and a clear timeline;

25                  and

1           (B) that, on successful demonstration,  
2           would accelerate investment in energy effi-  
3           ciency.

4       (b) FEDERAL SMART BUILDING PROGRAM.—

5           (1) ESTABLISHMENT.—Not later than 1 year  
6           after the date of enactment of this Act, the Sec-  
7           retary shall establish a program to be known as the  
8           “Federal Smart Building Program”—

9           (A) to implement smart building tech-  
10          nology; and

11          (B) to demonstrate the costs and benefits  
12          of smart buildings.

13       (2) SELECTION.—

14           (A) IN GENERAL.—The Secretary shall co-  
15          ordinate the selection of not fewer than 1 build-  
16          ing from among each of several key Federal  
17          agencies, as described in paragraph (4), to com-  
18          pose an appropriately diverse set of smart  
19          buildings based on size, type, and geographic lo-  
20          cation.

21           (B) INCLUSION OF COMMERCIALY OPER-  
22          ATED BUILDINGS.—In making selections under  
23          subparagraph (A), the Secretary may include  
24          buildings that are owned by the Federal Gov-  
25          ernment but are commercially operated.

1           (3) TARGETS.—Not later than 18 months after  
2 the date of enactment of this Act, the Secretary  
3 shall establish targets for the number of smart  
4 buildings to be commissioned and evaluated by key  
5 Federal agencies by 3 years and 6 years after the  
6 date of enactment of this Act.

7           (4) FEDERAL AGENCY DESCRIBED.—The key  
8 Federal agencies referred to in this subsection shall  
9 include buildings operated by—

- 10                   (A) the Department of the Army;  
11                   (B) the Department of the Navy;  
12                   (C) the Department of the Air Force;  
13                   (D) the Department;  
14                   (E) the Department of the Interior;  
15                   (F) the Department of Veterans Affairs;  
16           and  
17                   (G) the General Services Administration.

18           (5) REQUIREMENT.—In implementing the pro-  
19 gram, the Secretary shall leverage existing financing  
20 mechanisms including energy savings performance  
21 contracts, utility energy service contracts, and an-  
22 nual appropriations.

23           (6) EVALUATION.—Using the guidelines of the  
24 Federal Energy Management Program relating to  
25 whole-building evaluation, measurement, and

1 verification, the Secretary shall evaluate the costs  
2 and benefits of the buildings selected under para-  
3 graph (2), including an identification of—

4 (A) which advanced building tech-  
5 nologies—

6 (i) are most cost-effective; and

7 (ii) show the most promise for—

8 (I) increasing building energy  
9 savings;

10 (II) increasing service perform-  
11 ance to building occupants;

12 (III) reducing environmental im-  
13 pacts; and

14 (IV) establishing cybersecurity;  
15 and

16 (B) any other information the Secretary  
17 determines to be appropriate.

18 (7) AWARDS.—The Secretary may expand  
19 awards made under the Federal Energy Manage-  
20 ment Program and the Better Building Challenge to  
21 recognize specific agency achievements in accel-  
22 erating the adoption of smart building technologies.

23 (c) SURVEY OF PRIVATE SECTOR SMART BUILD-  
24 INGS.—

1           (1) SURVEY.—The Secretary shall conduct a  
2 survey of privately owned smart buildings through-  
3 out the United States, including commercial build-  
4 ings, laboratory facilities, hospitals, multifamily resi-  
5 dential buildings, and buildings owned by nonprofit  
6 organizations and institutions of higher education.

7           (2) SELECTION.—From among the smart build-  
8 ings surveyed under paragraph (1), the Secretary  
9 shall select not fewer than 1 building each from an  
10 appropriate range of building sizes, types, and geo-  
11 graphic locations.

12           (3) EVALUATION.—Using the guidelines of the  
13 Federal Energy Management Program relating to  
14 whole-building evaluation, measurement, and  
15 verification, the Secretary shall evaluate the costs  
16 and benefits of the buildings selected under para-  
17 graph (2), including an identification of—

18                   (A) which advanced building technologies  
19 and systems—

20                           (i) are most cost-effective; and

21                           (ii) show the most promise for—

22                                   (I) increasing building energy  
23 savings;

24                                   (II) increasing service perform-  
25 ance to building occupants;

1 (III) reducing environmental im-  
2 pacts; and

3 (IV) establishing cybersecurity;  
4 and

5 (B) any other information the Secretary  
6 determines to be appropriate.

7 (d) LEVERAGING EXISTING PROGRAMS.—

8 (1) BETTER BUILDING CHALLENGE.—As part  
9 of the Better Building Challenge of the Department,  
10 the Secretary, in consultation with major private  
11 sector property owners, shall develop smart building  
12 accelerators to demonstrate innovative policies and  
13 approaches that will accelerate the transition to  
14 smart buildings in the public, institutional, and com-  
15 mercial buildings sectors.

16 (2) RESEARCH AND DEVELOPMENT.—

17 (A) IN GENERAL.—The Secretary shall  
18 conduct research and development to address  
19 key barriers to the integration of advanced  
20 building technologies and to accelerate the tran-  
21 sition to smart buildings.

22 (B) INCLUSION.—The research and devel-  
23 opment conducted under subparagraph (A)  
24 shall include research and development on—

- 1 (i) achieving whole-building, systems-  
2 level efficiency through smart system and  
3 component integration;
- 4 (ii) improving physical components,  
5 such as sensors and controls, to be adapt-  
6 ive, anticipatory, and networked;
- 7 (iii) reducing the cost of key compo-  
8 nents to accelerate the adoption of smart  
9 building technologies;
- 10 (iv) data management, including the  
11 capture and analysis of data and the inter-  
12 operability of the energy systems;
- 13 (v) protecting against cybersecurity  
14 threats and addressing security  
15 vulnerabilities of building systems or  
16 equipment;
- 17 (vi) business models, including how  
18 business models may limit the adoption of  
19 smart building technologies and how to  
20 support transactive energy;
- 21 (vii) integration and application of  
22 combined heat and power systems and en-  
23 ergy storage for resiliency;
- 24 (viii) characterization of buildings and  
25 components;

- 1 (ix) consumer and utility protections;
- 2 (x) continuous management, including
- 3 the challenges of managing multiple energy
- 4 systems and optimizing systems for dis-
- 5 parate stakeholders; and
- 6 (xi) other areas of research and devel-
- 7 opment, as determined appropriate by the
- 8 Secretary.

9 (e) REPORT.—Not later than 2 years after the date

10 of enactment of this Act, and every 2 years thereafter until

11 a total of 3 reports have been made, the Secretary shall

12 submit to the Committee on Energy and Natural Re-

13 sources of the Senate and the Committee on Energy and

14 Commerce of the House of Representatives a report on—

15 (1) the establishment of the Federal Smart

16 Building Program and the evaluation of Federal

17 smart buildings under subsection (b);

18 (2) the survey and evaluation of private sector

19 smart buildings under subsection (c); and

20 (3) any recommendations of the Secretary to

21 further accelerate the transition to smart buildings.



1                   **Subtitle K—Energy Study**

2   **SEC. 3101. ENERGY INFORMATION STUDY.**

3           (a) IN GENERAL.—Not later than 2 years after the  
4 date of enactment of this Act, the Secretary shall complete  
5 a study, with opportunity for public comment—

6                   (1) on the impact of—

7                           (A) State and local performance  
8 benchmarking and disclosure policies, and any  
9 associated building efficiency policies, for com-  
10 mercial and multifamily buildings; and

11                           (B) programs and systems in which utili-  
12 ties provide aggregated information regarding  
13 whole building energy consumption and usage  
14 information to owners of multitenant commer-  
15 cial, residential, and mixed-use buildings;

16                   (2) that identifies best practice policy ap-  
17 proaches studied under paragraph (1) that have re-  
18 sulted in the greatest improvements in building en-  
19 ergy efficiency; and

20                   (3) that considers—

21                           (A) compliance rates and the benefits and  
22 costs of the policies and programs on building  
23 owners, utilities, tenants, and other parties;

24                           (B) utility practices, programs, and sys-  
25 tems that provide aggregated energy consump-

1           tion information to multitenant building own-  
2           ers, and the impact of public utility commis-  
3           sions and State privacy laws on those practices,  
4           programs, and systems;

5           (C) exceptions to compliance in existing  
6           laws where building owners are not able to  
7           gather or access whole building energy informa-  
8           tion from tenants or utilities;

9           (D) the treatment of buildings with—

10           (i) multiple uses;

11           (ii) uses for which baseline informa-  
12           tion is not available; and

13           (iii) uses that require high levels of  
14           energy intensities, such as data centers,  
15           trading floors, and television studios;

16           (E) implementation practices, including  
17           disclosure methods and phase-in of compliance;

18           (F) the safety and security of  
19           benchmarking tools offered by government  
20           agencies, and the resiliency of those tools  
21           against cyber attacks; and

22           (G) international experiences with regard  
23           to building benchmarking and disclosure laws  
24           and data aggregation for multitenant buildings.

1 (b) SUBMISSION TO CONGRESS.—At the conclusion  
2 of the study, the Secretary shall submit to Congress a re-  
3 port on the results of the study.

4 **SEC. 3102. GRANTS TO UTILITIES.**

5 (a) GRANTS TO UTILITIES.—Based on the results of  
6 the research for the portion of the study described in sec-  
7 tion 3101(a)(1)(B), and with criteria developed following  
8 public notice and comment, the Secretary may make com-  
9 petitive awards to utilities, utility regulators, and utility  
10 partners to develop and implement effective and promising  
11 programs to provide aggregated whole building energy  
12 consumption information to multitenant building owners.

13 (b) AUTHORIZATION OF APPROPRIATIONS.—There is  
14 authorized to be appropriated to carry out this section  
15 \$5,000,000 for each of fiscal years 2016 through 2020,  
16 to remain available until expended.

17 **SEC. 3103. GRANTS TO STATES AND UNITS OF LOCAL GOV-**  
18 **ERNMENT.**

19 (a) GRANTS TO UTILITIES.—Based on the results of  
20 the research for the portion of the study described in sec-  
21 tion 3101(a)(1)(B), and with criteria developed following  
22 public notice and comment, the Secretary may make com-  
23 petitive awards to States and units of local government  
24 to develop and implement effective and promising  
25 benchmarking and disclosure policies, and any associated

1 building efficiency policies, for commercial and multi-  
2 family buildings.

3 (b) AUTHORIZATION OF APPROPRIATIONS.—There is  
4 authorized to be appropriated to carry out this section  
5 \$5,000,000 for each of fiscal years 2016 through 2020,  
6 to remain available until expended.

7 **SEC. 3104. INPUT FROM STAKEHOLDERS.**

8 The Secretary shall seek input from stakeholders to  
9 maximize the effectiveness of the actions taken under this  
10 subtitle.

11 **SEC. 3105. REPORT.**

12 Not later than 2 years after the date of enactment  
13 of this Act, and every 2 years thereafter, the Secretary  
14 shall submit to Congress a report on the progress made  
15 in complying with this subtitle.

16 **Subtitle L—Alternative Fueled**  
17 **Vehicles**

18 **SEC. 3111. ALTERNATIVE FUELED VEHICLE FLEETS AND IN-**  
19 **FRASTRUCTURE.**

20 (a) UTILITY INCENTIVE PROGRAMS.—Section  
21 546(c)(1) of the National Energy Conservation Policy Act  
22 (42 U.S.C. 8256(c)(1)) is amended by inserting “(includ-  
23 ing measures to support the use of alternative fueled vehi-  
24 cles (as defined in section 400AA(g) of the Energy Policy  
25 and Conservation Act (42 U.S.C. 6374(g))) or the fueling

1 or charging infrastructure necessary for those vehicles)”  
2 after “demand”.

3 (b) ENERGY SAVINGS PERFORMANCE CONTRACTS.—

4 (1) AUTHORITY TO ENTER CONTRACTS.—Sec-  
5 tion 801(a)(2)(B) of the National Energy Conserva-  
6 tion Policy Act (42 U.S.C. 8287(a)(2)(B)) is amend-  
7 ed in the first sentence by inserting “or petroleum”  
8 after “utilities”.

9 (2) PAYMENT OF COSTS.—Section 802 of the  
10 National Energy Conservation Policy Act (42 U.S.C.  
11 8287a) is amended by inserting “petroleum,” after  
12 “water,”.

13 (3) DEFINITIONS.—Section 804 of the National  
14 Energy Conservation Policy Act (42 U.S.C. 8287e)  
15 is amended—

16 (A) in paragraph (2)—

17 (i) in subparagraph (C), by striking  
18 “and” after the semicolon;

19 (ii) in subparagraph (D), by striking  
20 the period at the end and inserting “; or”;  
21 and

22 (iii) by adding at the end the fol-  
23 lowing:

24 “(E) a reduction in the use of petroleum  
25 through the use of alternative fueled vehicles or

1 the fueling or charging infrastructure necessary  
2 for alternative fueled vehicles, including the use  
3 of contracts to support alternative fueled vehi-  
4 cles or infrastructure.”;

5 (B) in paragraph (4)—

6 (i) in subparagraph (A), by striking  
7 “or” after the semicolon;

8 (ii) in subparagraph (B), by striking  
9 the period at the end and inserting “; or”;  
10 and

11 (iii) by adding at the end the fol-  
12 lowing:

13 “(C) a measure to support the use of alter-  
14 native fueled vehicles or the fueling or charging  
15 infrastructure necessary for alternative fueled  
16 vehicles, including the use of contracts to sup-  
17 port alternative fueled vehicles or infrastruc-  
18 ture.”;

19 (C) by redesignating paragraphs (1), (2),  
20 (3), and (4), as paragraphs (5), (3), (4), and  
21 (2), respectively, and moving so as to appear in  
22 numerical order; and

23 (D) by inserting before paragraph (2) (as  
24 so redesignated) the following:

1           “(1) ALTERNATIVE FUELED VEHICLE.—The  
2 term ‘alternative fueled vehicle’ has the meaning  
3 given the term in section 400AA(g) of the Energy  
4 Policy and Conservation Act (42 U.S.C. 6374(g)).”.

## 5           **Subtitle M—Outer Continental** 6           **Shelf**

7           **SEC. 3121. REPEAL OF OUTER CONTINENTAL SHELF DEEP**  
8           **WATER AND DEEP GAS ROYALTY RELIEF.**

9           (a) IN GENERAL.—Sections 344 and 345 of the En-  
10 ergy Policy Act of 2005 (42 U.S.C. 15904, 15905) are  
11 repealed.

12          (b) ADMINISTRATION.—The Secretary of the Interior  
13 shall not be required to provide for royalty relief in the  
14 lease sale terms beginning with the first lease sale held  
15 on or after the date of enactment of this Act for which  
16 a final notice of sale has not been published.

17           **SEC. 3122. DISPOSITION OF QUALIFIED OUTER CONTI-**  
18           **NENTAL SHELF REVENUES FROM 181 AREA,**  
19           **181 SOUTH AREA, AND 2002–2007 PLANNING**  
20           **AREAS OF GULF OF MEXICO.**

21          Section 105 of the Gulf of Mexico Energy Security  
22 Act of 2006 (43 U.S.C. 1331 note) is amended to read  
23 as follows:

1 **“SEC. 105. DISPOSITION OF QUALIFIED OUTER CONTI-**  
2 **NENTAL SHELF REVENUES FROM 181 AREA,**  
3 **181 SOUTH AREA, AND 2002–2007 PLANNING**  
4 **AREAS OF GULF OF MEXICO.**

5 “Notwithstanding section 9 of the Outer Continental  
6 Shelf Lands Act (43 U.S.C. 1338) and subject to the other  
7 provisions of this section, for each applicable fiscal year,  
8 the Secretary of the Treasury shall deposit—

9 “(1) 87.5 percent of qualified outer Continental  
10 Shelf revenues in the general fund of the Treasury;  
11 and

12 “(2) 12.5 percent of qualified outer Continental  
13 Shelf revenues in a special account in the Land and  
14 Water Conservation Fund established under section  
15 200302 of title 54, United States Code, from which  
16 the Secretary shall disburse, without further appro-  
17 priation, 100 percent to provide financial assistance  
18 to States in accordance with section 200305 of that  
19 title, which shall be considered income to the Land  
20 and Water Conservation Fund for purposes of sec-  
21 tion 200302 of that title.”.



1 **Subtitle N—Venting and Flaring of**  
2 **Gas**

3 **SEC. 3131. REGULATIONS TO PREVENT OR MINIMIZE VENT-**  
4 **ING AND FLARING OF GAS.**

5 (a) IN GENERAL.—Not later than 180 days after the  
6 date of enactment of this Act, the Secretary of the Interior  
7 shall issue regulations under this subtitle—

8 (1) to prevent or minimize the venting and flar-  
9 ing of gas in oil and gas production operations on  
10 Federal land onshore and offshore in the United  
11 States; and

12 (2) to promote the capture and beneficial use or  
13 reinjection of gas in the operations referred to in  
14 paragraph (1).

15 (b) ROYALTIES.—A regulation issued under this sec-  
16 tion shall include provisions that treat gas that is flared  
17 or vented in operations under a lease under this subtitle  
18 as production for which royalty is required to be paid to  
19 the United States.

20 (c) LIMITATION ON APPLICATION TO EXISTING  
21 LEASES.—Regulations issued under subsection (a) shall  
22 not apply with respect to production under a lease in effect  
23 on the date of enactment of this Act to the extent such  
24 application would constitute a breach of the terms of the  
25 lease by the United States.

1 **SEC. 3132. ASSESSMENT OF VENTING AND FLARING OF GAS**  
2 **IN PRODUCTION OPERATIONS IN UNITED**  
3 **STATES.**

4 Not later than 18 months after the date of enactment  
5 of this Act, the Comptroller General of the United States  
6 shall—

7 (1) assess the venting and flaring of gas in oil  
8 and gas production operations on Federal land on-  
9 shore and offshore in the United States; and

10 (2) submit to Congress a report on the venting  
11 and flaring of gas in oil and gas production oper-  
12 ations on Federal land onshore and offshore in the  
13 United States, including an estimate of the volume  
14 of gas that is vented or flared in such operations  
15 each year.

16 **SEC. 3133. REGULATIONS.**

17 The Secretary of the Interior shall issue regulations  
18 that define the terms “vent”, “venting”, “flare”, and  
19 “flaring” for purposes of this subtitle.

20 **Subtitle O—Production Incentive**  
21 **Fee**

22 **SEC. 3141. PRODUCTION INCENTIVE FEE.**

23 (a) ESTABLISHMENT.—

24 (1) IN GENERAL.—Not later than 180 days  
25 after the date of enactment of this Act, the Sec-  
26 retary of the Interior (referred to in this section as

1 the “Secretary”) shall issue regulations to establish  
2 an annual production incentive fee with respect to  
3 Federal onshore and offshore land that is subject to  
4 a lease for production of oil or natural gas under  
5 which production is not occurring.

6 (2) APPLICATION.—The annual production in-  
7 centive fee described in paragraph (1) shall apply  
8 with respect to land that is subject to a lease de-  
9 scribed in paragraph (1) that is—

10 (A) in effect on the date on which final  
11 regulations are issued pursuant to this sub-  
12 section; or

13 (B) executed after that date.

14 (b) AMOUNT.—For each acre of land from which oil  
15 or natural gas is produced for less than 90 days in a cal-  
16 endar year, the amount of the fee shall be—

17 (1) in the case of onshore land—

18 (A) for each of the first 3 years of the  
19 lease, \$4 per acre (in 2015 dollars);

20 (B) for the fourth year of the lease, \$6 per  
21 acre (in 2015 dollars); and

22 (C) for the fifth year of the lease and each  
23 year thereafter for which the lease is otherwise  
24 in effect, \$8 per acre (in 2015 dollars); and

25 (2) in the case of offshore land—

1 (A) for each of the third, fourth, and fifth  
2 years of the lease, \$4 per acre (in 2015 dol-  
3 lars);

4 (B) for the sixth year of the lease, \$6 per  
5 acre (in 2015 dollars); and

6 (C) for the seventh year of the lease and  
7 each year thereafter for which the lease is oth-  
8 erwise in effect, \$8 per acre (in 2015 dollars).

9 (c) ASSESSMENT AND COLLECTION.—The Secretary  
10 shall assess and collect the fee established under this sec-  
11 tion.

12 (d) DEPOSIT.—Amounts received by the Secretary  
13 for the fee under this section shall be reserved for the Sec-  
14 retary for expenditures on inspection, enforcement, and  
15 permitting relating to oil and gas.

16 (e) REGULATIONS.—The Secretary may issue regula-  
17 tions to prevent evasion of the fee under this section.

## 18 **Subtitle P—Reauthorization of** 19 **Desalination Act**

### 20 **SEC. 3151. REAUTHORIZATION OF DESALINATION ACT.**

21 (a) DEFINITIONS.—Section 2 of the Water Desalina-  
22 tion Act of 1996 (42 U.S.C. 10301 note; Public Law 104–  
23 298) is amended—

24 (1) by redesignating paragraphs (1), (2), (3),  
25 (4), and (5) as paragraphs (2), (3), (5), (6), and

1 (4), respectively, and moving the paragraphs so as  
2 to appear in numerical order; and

3 (2) by inserting before paragraph (2) (as so re-  
4 designated) the following:

5 “(1) ADMINISTRATOR.—The term ‘Adminis-  
6 trator’ means the Administrator of the Environ-  
7 mental Protection Agency.”.

8 (b) AUTHORIZATION OF RESEARCH AND STUDIES.—  
9 Section 3 of the Water Desalination Act of 1996 (42  
10 U.S.C. 10301 note; Public Law 104–298) is amended by  
11 adding at the end the following:

12 “(e) PRIORITIZATION.—In carrying out this section,  
13 the Secretary of the Interior shall prioritize funding for  
14 research—

15 “(1) to reduce energy consumption and lower  
16 the cost of seawater and brackish water desalination;

17 “(2) to reduce the environmental impacts of  
18 seawater desalination and develop technology and  
19 strategies to minimize those impacts;

20 “(3) to improve existing reverse osmosis and  
21 membrane technology;

22 “(4) to carry out basic and applied research on  
23 next generation desalination technologies, including  
24 graphene membranes, forward osmosis, hybrid mem-  
25 brane-thermal desalination, improved energy recov-

1       ery systems, and renewable energy-powered desalina-  
2       tion systems that could significantly reduce desalina-  
3       tion costs; and

4               “(5) to develop portable or modular desalina-  
5       tion units capable of providing temporary emergency  
6       water supplies for domestic or military deployment  
7       purposes.”.

8       (c) DESALINATION DEMONSTRATION AND DEVELOP-  
9       MENT.—Section 4 of the Water Desalination Act of 1996  
10      (42 U.S.C. 10301 note; Public Law 104–298) is amended  
11      by adding at the end the following:

12       “(c) PRIORITIZATION.—In carrying out demonstra-  
13      tion and development activities under this section, the Sec-  
14      retary shall prioritize projects—

15               “(1) in drought-stricken States and commu-  
16      nities;

17               “(2) in States that have authorized funding for  
18      research and development of desalination tech-  
19      nologies and projects; and

20               “(3) that can reduce reliance on imported water  
21      supplies that have an impact on species listed under  
22      the Endangered Species Act of 1973 (16 U.S.C.  
23      1531 et seq.).”.

1 (d) AUTHORIZATION OF APPROPRIATIONS.—Section  
2 8 of the Water Desalination Act of 1996 (42 U.S.C. 10301  
3 note; Public Law 104–298) is amended—

4 (1) in subsection (a), in the first sentence—

5 (A) by striking “\$5,000,000” and inserting  
6 “\$10,000,000”; and

7 (B) by striking “2013” and inserting  
8 “2020”; and

9 (2) in subsection (b), by striking “for each of  
10 fiscal years 2012 through 2013” and inserting “for  
11 each of fiscal years 2016 through 2020”.

12 (e) CONSULTATION.—Section 9 of the Water Desali-  
13 nation Act of 1996 (42 U.S.C. 10301 note; Public Law  
14 104–298) is amended—

15 (1) by striking the section designation and  
16 heading and all that follows through “In carrying  
17 out” in the first sentence and inserting the fol-  
18 lowing:

19 **“SEC. 9. CONSULTATION AND COORDINATION.**

20 “(a) CONSULTATION.—In carrying out”;

21 (2) in the second sentence, by striking “The au-  
22 thorization” and inserting the following:

23 “(c) OTHER DESALINATION PROGRAMS.—The au-  
24 thorization”; and

1           (3) by inserting after subsection (a) (as des-  
2           ignated by paragraph (1)) the following:

3           “(b) COORDINATION OF FEDERAL DESALINATION  
4 RESEARCH AND DEVELOPMENT.—

5           “(1) IN GENERAL.—The White House Office of  
6           Science and Technology Policy shall develop a co-  
7           ordinated strategic plan that—

8                   “(A) establishes priorities for future Fed-  
9                   eral investments in desalination; and

10                   “(B) coordinates the activities of Federal  
11                   agencies involved in desalination, including the  
12                   Bureau of Reclamation, the National Science  
13                   Foundation, the Office of Naval Research of the  
14                   Department of Defense, the National Labora-  
15                   tories of the Department of Energy, the United  
16                   States Geological Survey, the Environmental  
17                   Protection Agency, and the National Oceanic  
18                   and Atmospheric Administration.”.

19           (f) DESALINATION PROJECT ASSISTANCE.—The  
20           Water Desalination Act of 1996 (42 U.S.C. 10301 note;  
21           Public Law 104–298) is amended by adding at the end  
22           the following:

23           **“SEC. 10. FEASIBILITY STUDY AND DESIGN ASSISTANCE.**

24                   “(a) IN GENERAL.—In order to facilitate the develop-  
25                   ment of water desalination projects, the Administrator



1 shall develop and implement a program to provide finan-  
2 cial assistance to study the feasibility and support the de-  
3 sign of desalination facilities (including associated water  
4 distribution infrastructure) that provide usable water.

5 “(b) FEASIBILITY STUDIES.—

6 “(1) IN GENERAL.—The Administrator may  
7 provide grant assistance to a non-Federal project  
8 sponsor to evaluate and determine the feasibility of  
9 a public or public-private desalination project.

10 “(2) FEDERAL SHARE.—The Federal share for  
11 a feasibility study under paragraph (1) shall not ex-  
12 ceed 50 percent of the cost of the study.

13 “(3) CRITERIA FOR ELIGIBILITY.—In carrying  
14 out this subsection, the Administrator shall establish  
15 criteria to determine projects eligible for grant fund-  
16 ing based on the ability of the projects to provide re-  
17 gional water supply benefits, including—

18 “(A) improving water supply reliability in  
19 regions subject to frequent and severe drought;

20 “(B) enhancement of public health, safety,  
21 ecosystems, and watershed sustainability;

22 “(C) preservation of groundwater through  
23 reduction of withdrawals from aquifers;

1           “(D) offsetting demand for water conveyed  
2           from environmentally sensitive areas outside  
3           service area of the project; and

4           “(E) mitigation of saltwater intrusion to  
5           aquifers.

6           “(c) PROJECT DESIGN.—

7           “(1) IN GENERAL.—The Administrator may  
8           provide grant assistance to a non-Federal project  
9           sponsor for the design of a public or public-private  
10          desalination project.

11          “(2) FEDERAL SHARE.—The Federal share for  
12          project design under paragraph (1) shall not exceed  
13          25 percent of the cost of project design of the  
14          project.

15          “(3) CRITERIA FOR ELIGIBILITY.—In carrying  
16          out this subsection, the Administrator shall establish  
17          criteria to determine projects eligible for grant fund-  
18          ing, including—

19                  “(A) completion of a feasibility study de-  
20                  scribed in subsection (b);

21                  “(B) demonstration of technical feasibility  
22                  and cost effectiveness;

23                  “(C) completion of all required State and  
24                  Federal environmental impact analyses;

1           “(D) receipt of all necessary local, State,  
2           and Federal permits;

3           “(E) demonstration of financial capability  
4           of non-Federal project sponsors;

5           “(F) quantification and net cost of water  
6           produced by the project; and

7           “(G) identification of users of produced  
8           water supply, including water purchase agree-  
9           ments and other contractually binding mecha-  
10          nisms.

11          “(d) GUIDANCE.—Not later than 180 days after the  
12          date of enactment of this section, the Administrator shall  
13          publish appropriate guidance to implement this section.

14          “(e) AUTHORIZATION OF APPROPRIATIONS.—There  
15          is authorized to be appropriated to carry out this section  
16          \$10,000,000 for each of fiscal years 2016 through 2020,  
17          to remain available until expended.

18          “(f) REPORT ON DESALINATION TECHNOLOGY.—Not  
19          later than 90 days after the date of enactment of this sec-  
20          tion, the Secretary of the Navy shall submit to Congress  
21          a report on the application of desalinization technology for  
22          defense and national security purposes to provide drought  
23          relief to areas impacted by sharp declines in water sup-  
24          ply.”.

1 **SEC. 3152. PROMOTING WATER EFFICIENCY WITH**  
2 **WATERSENSE.**

3 (a) **IN GENERAL.**—There is established within the  
4 Environmental Protection Agency a program, to be known  
5 as the “WaterSense Program”, to identify and promote  
6 water efficient products, buildings, landscapes, facilities,  
7 processes, and services—

8 (1) to reduce water use;

9 (2) to reduce the strain on water, wastewater,  
10 and stormwater infrastructure;

11 (3) to conserve energy used to pump, heat,  
12 transport, and treat water; and

13 (4) to preserve water resources for future gen-  
14 erations through voluntary labeling of, or other  
15 forms of communications regarding, products, build-  
16 ings, landscapes, facilities, processes, and services  
17 that meet the highest water efficiency and perform-  
18 ance criteria.

19 (b) **DUTIES.**—The Administrator of the Environ-  
20 mental Protection Agency (referred to in this section as  
21 the “Administrator”) shall—

22 (1) establish—

23 (A) a WaterSense label to be used for cer-  
24 tain items; and

25 (B) the procedure by which an item may  
26 be certified to display the WaterSense label;

1           (2) promote WaterSense-labeled products,  
2 buildings, landscapes, facilities, processes, and serv-  
3 ices in the marketplace as the preferred technologies  
4 and services for—

5                   (A) reducing water use; and

6                   (B) ensuring product and service perform-  
7                   ance;

8           (3) work to enhance public awareness of the  
9 WaterSense label through public outreach, edu-  
10 cation, and other means;

11           (4) preserve the integrity of the WaterSense  
12 label by—

13                   (A) establishing and maintaining perform-  
14                   ance criteria so that products, buildings, land-  
15                   scapes, facilities, processes, and services labeled  
16                   with the WaterSense label perform as well as,  
17                   or better than, less water-efficient counterparts;

18                   (B) overseeing WaterSense certifications  
19                   made by third parties;

20                   (C) conducting reviews of the use of the  
21                   WaterSense label in the marketplace and taking  
22                   corrective action in any case in which misuse of  
23                   the label is identified; and

24                   (D) carrying out such other measures as  
25                   the Administrator determines to be appropriate;

1           (5) at least once every 6 years, review and, if  
2 appropriate, update WaterSense criteria for cat-  
3 egories of products, buildings, landscapes, facilities,  
4 processes, and services;

5           (6) to the maximum extent practicable, at least  
6 annually estimate and make available to the public  
7 the production and relative market shares of, and  
8 the savings of water, energy, and capital costs of  
9 water, wastewater, and stormwater infrastructure  
10 attributable to the use of WaterSense-labeled prod-  
11 ucts, buildings, landscapes, facilities, processes, and  
12 services;

13           (7) solicit comments from interested parties and  
14 the public prior to establishing or revising a  
15 WaterSense category, specification, installation cri-  
16 terion, or other criterion;

17           (8) provide reasonable notice to interested par-  
18 ties and the public of any changes (including effec-  
19 tive dates), on the adoption of a new or revised cat-  
20 egory, specification, installation criterion, or other  
21 criterion, along with—

22                   (A) an explanation of the changes; and

23                   (B) as appropriate, responses to comments  
24 submitted by interested parties and the public;

1           (9) provide appropriate lead time (as deter-  
2           mined by the Administrator) prior to the applicable  
3           effective date for a new or significant revision to a  
4           category, specification, installation criterion, or other  
5           criterion, taking into account the timing require-  
6           ments of the manufacturing, marketing, training,  
7           and distribution process for the specific product,  
8           building and landscape, or service category ad-  
9           dressed;

10           (10) identify and, if appropriate, implement  
11           other voluntary approaches in commercial, institu-  
12           tional, residential, industrial, and municipal sectors  
13           to encourage recycling and reuse technologies to im-  
14           prove water efficiency or lower water use; and

15           (11) if appropriate, authorize the WaterSense  
16           label for use on products that are labeled by the En-  
17           ergy Star program implemented by the Adminis-  
18           trator and the Secretary of Energy.

19           (c) AUTHORIZATION OF APPROPRIATIONS.—There  
20           are authorized to be appropriated to carry out this sec-  
21           tion—

22           (1) \$5,000,000 for fiscal year 2016;

23           (2) \$5,000,000 for fiscal year 2017;

24           (3) \$5,000,000 for fiscal year 2018;

25           (4) \$5,000,000 for fiscal year 2019; and

1           (5) for each fiscal year thereafter, the applica-  
2           ble amount for the preceding fiscal year, as adjusted  
3           to reflect changes for the 12-month period ending  
4           the preceding November 30 in the Consumer Price  
5           Index for All Urban Consumers published by the  
6           Bureau of Labor Statistics of the Department of  
7           Labor.

8   **SEC. 3153. INCREASING OPPORTUNITIES FOR AGRICUL-**  
9                           **TURAL CONSERVATION.**

10          (a) IN GENERAL.—The Secretary of the Interior (re-  
11          ferred to in this section as the “Secretary”) shall offer  
12          to enter into voluntary agreements with public water agen-  
13          cies or other entities that receive water from any project  
14          operated by the Bureau of Reclamation to implement  
15          water conservation programs.

16          (b) USES OF CONSERVED WATER.—

17                  (1) IN GENERAL.—Except as provided in para-  
18                  graph (2), of the quantity of water conserved as a  
19                  result of an agreement entered into pursuant to sub-  
20                  section (a)—

21                          (A) 25 percent shall be retained by the  
22                          public water agency or entity with which the  
23                          Secretary has entered into the agreement; and

24                          (B) 75 percent shall be retained by the  
25                          Secretary, of which—



1                   (i) 33 percent shall be used or mar-  
2                   keted on an annual basis for purposes that  
3                   will promote groundwater recharge and  
4                   conservation; and

5                   (ii) 67 percent shall be used on an an-  
6                   nual basis for refuge water supply or other  
7                   authorized project purposes.

8                   (2) EXCEPTIONS.—For good reason in a par-  
9                   ticular instance, the Secretary and the public water  
10                  agency or entity with which the Secretary has en-  
11                  tered into an agreement may agree to modify the  
12                  percentages referred to in paragraph (1).

13                  (c) CONTRIBUTED FUNDS.—

14                  (1) IN GENERAL.—Any existing water service or  
15                  repayment contractor within the project service area  
16                  of a water conservation agreement under this section  
17                  may contribute funds for the implementation of the  
18                  agreement.

19                  (2) ACTION BY SECRETARY.—The Secretary  
20                  shall provide to each contractor that contributes  
21                  funds under paragraph (1) such portion of the water  
22                  described in subsection (b)(1)(B)(ii) as the Secretary  
23                  determines to be appropriate, but not to exceed the  
24                  proportion of funds contributed by the contractor.

1           (3) **ADDITIONAL WATER.**—If a contractor con-  
2 tributes more than 50 percent of the cost of a  
3 project carried out under an agreement under this  
4 section, the Secretary may enter into an agreement  
5 with the contractor to provide to the contractor such  
6 portion of the water described in subsection  
7 (b)(1)(B)(i) for groundwater recharge and conserva-  
8 tion as the Secretary determines to be appropriate,  
9 subject to the condition that the contractor shall not  
10 receive a higher proportion of the water conserved  
11 than the proportion of funds contributed by the con-  
12 tractor.

13 **SEC. 3154. SUPPORT FOR INNOVATIVE WATER SUPPLY AND**  
14 **CONSERVATION TECHNOLOGIES.**

15       (a) **IN GENERAL.**—To promote the development of  
16 innovative water supply and conservation technologies, the  
17 Administrator of the Environmental Protection Agency  
18 (referred to in this section as the “Administrator”) may  
19 award, on a competitive basis, grants and enter into con-  
20 tracts to assist in the financing of research and dem-  
21 onstration projects for those innovative technologies.

22       (b) **ELIGIBLE ENTITIES.**—To be eligible to receive an  
23 award under this section, an entity shall be—

24           (1) a local entity;

1           (2) a public nonprofit institution or organiza-  
2           tion;

3           (3) a commercial entity;

4           (4) a federally recognized Indian tribe; or

5           (5) a nonprofit institution or organization.

6           (c) ELIGIBILITY CRITERIA.—The Administrator shall  
7           establish criteria for an entity described in subsection (b)  
8           to be eligible to receive a grant from, or enter into a con-  
9           tract with, the Administrator under this section, includ-  
10          ing—

11           (1) demonstration of the technical feasibility of  
12           the proposal and the qualifications of the entity to  
13           carry out the proposal;

14           (2) demonstration of the financial capability  
15           and creditworthiness of non-Federal project spon-  
16           sors;

17           (3) compliance with all applicable laws and re-  
18           ceipt of all necessary local, State, and Federal per-  
19           mits; and

20           (4) quantification of the estimated water to be  
21           produced or saved by the project and the net cost of  
22           the project.

23           (d) EVALUATION CRITERIA.—The Administrator  
24           shall establish criteria for evaluating on a competitive

1 basis eligible applicants under this section, including the  
2 degree to which the proposed technology—

3 (1) proposes an innovation that has broad, fun-  
4 damental implications for water savings or water  
5 supply;

6 (2) is economically feasible;

7 (3) could reduce the costs of water supply, in-  
8 cluding reductions in associated energy costs;

9 (4) would solve environmental concerns or pro-  
10 vide environmental benefits;

11 (5) has a proof of concept, and a likely path to  
12 success within a reasonable timeframe; and

13 (6) is aimed at the development of a specific  
14 water saving or water supply application, as opposed  
15 to basic research aimed at discovery and funda-  
16 mental knowledge generation.

17 (e) AUTHORITY TO ENGAGE OTHERS.—

18 (1) IN GENERAL.—In carrying out research  
19 under this section, the Administrator may engage  
20 such personnel, industrial or engineering entities,  
21 Federal laboratories, water resources research and  
22 technology institutions, other facilities, and edu-  
23 cational institutions as the Administrator determines  
24 to be necessary.

1           (2) TECHNICAL AND ADMINISTRATIVE ASSIST-  
2 ANCE.—The Administrator may—

3           (A) accept technical and administrative as-  
4 sistance from States and public or private agen-  
5 cies in connection with studies, surveys, loca-  
6 tion, construction, operation, and other work re-  
7 lating to the desalting of water; and

8           (B) enter into contracts or agreements  
9 that—

10           (i) establish the purposes for which  
11 the assistance is contributed; and

12           (ii) provide for the sharing of costs  
13 between the Administrator and any such  
14 agency.

15 (f) COST SHARING.—

16           (1) FEDERAL COST SHARE.—Subject to para-  
17 graph (2), the Federal share of the cost of a project  
18 under this section shall not exceed 25 percent, un-  
19 less the Administrator determines that the project is  
20 not feasible without an increased Federal contribu-  
21 tion.

22           (2) MAXIMUM FEDERAL COST SHARE.—Not-  
23 withstanding paragraph (1), the Federal share of  
24 the cost of a project under this section shall not ex-  
25 ceed 50 percent of the total project cost.

1 (3) PROCEDURES FOR ALLOCATING COSTS.—

2 (A) IN GENERAL.—The Administrator  
3 shall prescribe appropriate procedures to imple-  
4 ment this section.

5 (B) NON-FEDERAL COSTS.—The costs of  
6 operation, maintenance, repair, and rehabilita-  
7 tion of any facility funded under this section  
8 shall be a non-Federal responsibility.

9 (g) AUTHORIZATION OF APPROPRIATIONS.—There is  
10 authorized to be appropriated to carry out this section  
11 \$35,000,000 for the period of fiscal years 2016 through  
12 2020.

13 **TITLE IV—INVESTING IN**  
14 **RESEARCH AND DEVELOPMENT**

15 **SEC. 4001. BASIC RESEARCH.**

16 Section 971(b) of the Energy Policy Act of 2005 (42  
17 U.S.C. 16311(b)) is amended—

18 (1) in paragraph (6), by striking “and” at the  
19 end;

20 (2) in paragraph (7), by striking the period at  
21 the end and inserting “; and”; and

22 (3) by adding at the end the following:

23 “(8) \$15,000,000,000 for each of fiscal years  
24 2016 through 2020.”.

1 **SEC. 4002. ADVANCED RESEARCH PROJECTS AGENCY-EN-**  
2 **ERGY.**

3 Section 5012 of the America COMPETES Act (42  
4 U.S.C. 16538) is amended—

5 (1) in subsection (a)(3), by striking “subsection  
6 (n)(1)” and inserting “subsection (o)(1)”;

7 (2) in subsection (i), by striking paragraph (1)  
8 and inserting the following:

9 “(1) IN GENERAL.—To the maximum extent  
10 practicable, the Director shall ensure that—

11 “(A) the activities of ARPA–E are coordi-  
12 nated with, and do not duplicate the efforts of,  
13 programs and laboratories within the Depart-  
14 ment and other relevant research agencies; and

15 “(B) ARPA–E does not provide funding  
16 for a project unless the prospective grantee  
17 demonstrates sufficient attempts to secure pri-  
18 vate financing or indicates that the project is  
19 not independently commercially viable.”;

20 (3) by redesignating subsection (n) as sub-  
21 section (o);

22 (4) by inserting after subsection (m) the fol-  
23 lowing:

24 “(n) PROTECTION OF INFORMATION.—The following  
25 types of information collected by the ARPA–E from recipi-  
26 ents of financial assistance awards shall be considered

1 privileged and confidential and not subject to disclosure  
2 under section 552 of title 5, United States Code:

3 “(1) Plans for commercialization of technologies  
4 developed under the award, including business plans,  
5 technology-to-market plans, market studies, and cost  
6 and performance models.

7 “(2) Investments provided to an awardee from  
8 third parties (such as venture capital firms, hedge  
9 funds, and private equity firms), including amounts  
10 and the percentage of ownership of the awardee pro-  
11 vided in return for the investments.

12 “(3) Additional financial support that the  
13 awardee—

14 “(A) plans to or has invested into the tech-  
15 nology developed under the award; or

16 “(B) is seeking from third parties.

17 “(4) Revenue from the licensing or sale of new  
18 products or services resulting from research con-  
19 ducted under the award.”; and

20 (5) in subsection (o) (as redesignated by para-  
21 graph (3))—

22 (A) in paragraph (2)—

23 (i) in the matter preceding subpara-  
24 graph (A), by striking “paragraphs (4)  
25 and (5)” and inserting “paragraph (4)”;



1 (ii) in subparagraph (D), by striking  
2 “and” at the end;

3 (iii) in subparagraph (E), by striking  
4 the period at the end and inserting “;  
5 and”; and

6 (iv) by adding at the end the fol-  
7 lowing:

8 “(F) \$1,000,000, 000 for each of fiscal  
9 years 2016 through 2020.”; and

10 (B) in paragraph (4)(B), by striking  
11 “(e)(2)(D)” and inserting “(e)(2)(C)”.

12 **TITLE V—INVESTING IN CLEAN**  
13 **ENERGY**

14 **SEC. 5001. AMENDMENT OF 1986 CODE.**

15 Except as otherwise expressly provided, whenever in  
16 this title an amendment or repeal is expressed in terms  
17 of an amendment to, or repeal of, a section or other provi-  
18 sion, the reference shall be considered to be made to a  
19 section or other provision of the Internal Revenue Code  
20 of 1986.

1           **Subtitle A—Clean Energy Tax**  
2                                   **Credits**

3   **SEC. 5011. CLEAN ENERGY PRODUCTION CREDIT.**

4           (a) IN GENERAL.—Subpart D of part IV of sub-  
5 chapter A of chapter 1 is amended by adding at the end  
6 the following new section:

7   **“SEC. 45S. CLEAN ENERGY PRODUCTION CREDIT.**

8           “(a) AMOUNT OF CREDIT.—

9                           “(1) IN GENERAL.—For purposes of section 38,  
10 the clean energy production credit for any taxable  
11 year is an amount equal to the product of—

12                                   “(A) the applicable credit rate (as deter-  
13 mined under paragraph (2)), multiplied by

14                                   “(B) the kilowatt hours of electricity—

15   “(i) produced by the taxpayer at a  
16 qualified facility, and

17   “(ii)(I) sold by the taxpayer to an un-  
18 related person during the taxable year, or

19   “(II) in the case of a qualified facility  
20 which is equipped with a metering device  
21 which is owned and operated by an unre-  
22 lated person, sold, consumed, or stored by  
23 the taxpayer during the taxable year.

24                           “(2) APPLICABLE CREDIT RATE.—

25                                   “(A) IN GENERAL.—

1                   “(i) MAXIMUM CREDIT RATE.—Except  
2                   as provided in clause (ii), the applicable  
3                   credit rate is 1.5 cents.

4                   “(ii) REDUCTION OF CREDIT BASED  
5                   ON GREENHOUSE GAS EMISSION RATE.—  
6                   The applicable credit rate shall be reduced  
7                   (but not below zero) by an amount which  
8                   bears the same ratio to the amount in ef-  
9                   fect under clause (i) as the greenhouse gas  
10                  emissions rate for the qualified facility  
11                  bears to 372 grams of CO<sub>2</sub>e per KWh.

12                  “(B) ROUNDING.—If any amount deter-  
13                  mined under subparagraph (A)(ii) is not a mul-  
14                  tiple of 0.1 cent, such amount shall be rounded  
15                  to the nearest multiple of 0.1 cent.

16                  “(b) GREENHOUSE GAS EMISSIONS RATE.—

17                  “(1) IN GENERAL.—For purposes of this sec-  
18                  tion, the term ‘greenhouse gas emissions rate’ means  
19                  the amount of greenhouse gases emitted into the at-  
20                  mosphere by a qualified facility in the production of  
21                  electricity, expressed as grams of CO<sub>2</sub>e per KWh.

22                  “(2) NON-FOSSIL FUEL COMBUSTION AND GAS-  
23                  IFICATION.—In the case of a qualified facility which  
24                  produces electricity through combustion or gasifi-  
25                  cation of a non-fossil fuel, the greenhouse gas emis-

1       sions rate for such facility shall be equal to the net  
2       rate of greenhouse gases emitted into the atmos-  
3       phere by such facility in the production of electricity,  
4       expressed as grams of CO<sub>2</sub>e per KWh.

5               “(3) ESTABLISHMENT OF SAFE HARBOR FOR  
6       QUALIFIED FACILITIES.—

7               “(A) IN GENERAL.—The Secretary, in con-  
8       sultation with the Administrator of the Envi-  
9       ronmental Protection Agency, shall, by regula-  
10      tion, establish safe-harbor greenhouse gas emis-  
11      sions rates for types or categories of qualified  
12      facilities, which a taxpayer may elect to use for  
13      purposes of this section.

14              “(B) ROUNDING.—In establishing the safe-  
15      harbor greenhouse gas emissions rates for  
16      qualified facilities, the Secretary may round  
17      such rates to the nearest multiple of 37.2  
18      grams of CO<sub>2</sub>e per KWh (or, in the case of a  
19      greenhouse gas emissions rate which is less  
20      than 18.6 grams of CO<sub>2</sub>e per KWh, by round-  
21      ing such rate to zero).

22              “(4) CARBON CAPTURE AND SEQUESTRATION  
23      EQUIPMENT.—For purposes of this subsection, the  
24      amount of greenhouse gases emitted into the atmos-  
25      phere by a qualified facility in the production of

1 electricity shall not include any qualified carbon di-  
2 oxide (as defined in section 48E(c)(3)(A)) that is  
3 captured and disposed of by the taxpayer.

4 “(c) INFLATION ADJUSTMENT.—

5 “(1) IN GENERAL.—In the case of a calendar  
6 year beginning after 2018, the 1.5 cent amount in  
7 clause (i) of subsection (a)(2)(A) shall be adjusted  
8 by multiplying such amount by the inflation adjust-  
9 ment factor for the calendar year in which the sale  
10 or use of the electricity occurs. If any amount as in-  
11 creased under the preceding sentence is not a mul-  
12 tiple of 0.1 cent, such amount shall be rounded to  
13 the nearest multiple of 0.1 cent.

14 “(2) ANNUAL COMPUTATION.—The Secretary  
15 shall, not later than April 1 of each calendar year,  
16 determine and publish in the Federal Register the  
17 inflation adjustment factor for such calendar year in  
18 accordance with this subsection.

19 “(3) INFLATION ADJUSTMENT FACTOR.—The  
20 term ‘inflation adjustment factor’ means, with re-  
21 spect to a calendar year, a fraction the numerator  
22 of which is the GDP implicit price deflator for the  
23 preceding calendar year and the denominator of  
24 which is the GDP implicit price deflator for the cal-  
25 endar year 1992. The term ‘GDP implicit price

1 deflator’ means the most recent revision of the im-  
2 plicit price deflator for the gross domestic product  
3 as computed and published by the Department of  
4 Commerce before March 15 of the calendar year.

5 “(d) CREDIT PHASE-OUT.—

6 “(1) IN GENERAL.—Subject to paragraph (3),  
7 if the Secretary, in consultation with the Secretary  
8 of Energy and the Administrator of the Environ-  
9 mental Protection Agency, determines that the an-  
10 nual greenhouse gas emissions from electrical pro-  
11 duction in the United States are equal to or less  
12 than 72 percent of the annual greenhouse gas emis-  
13 sions from electrical production in the United States  
14 for calendar year 2005, the amount of the clean en-  
15 ergy production credit under subsection (a) for any  
16 qualified facility placed in service during a calendar  
17 year described in paragraph (2) shall be equal to the  
18 product of—

19 “(A) the amount of the credit determined  
20 under subsection (a) without regard to this sub-  
21 section, multiplied by

22 “(B) the phase-out percentage under para-  
23 graph (2).

24 “(2) PHASE-OUT PERCENTAGE.—The phase-out  
25 percentage under this paragraph is equal to—

1           “(A) for a facility placed in service during  
2           the first calendar year following the calendar  
3           year in which the determination described in  
4           paragraph (1) is made, 75 percent,

5           “(B) for a facility placed in service during  
6           the second calendar year following such deter-  
7           mination year, 50 percent,

8           “(C) for a facility placed in service during  
9           the third calendar year following such deter-  
10          mination year, 25 percent, and

11          “(D) for a facility placed in service during  
12          any calendar year subsequent to the year de-  
13          scribed in subparagraph (C), 0 percent.

14          “(3) DEADLINE TO BEGIN PHASE-OUT.—If the  
15          Secretary, in consultation with the Secretary of En-  
16          ergy and the Administrator of the Environmental  
17          Protection Agency, determines that the annual  
18          greenhouse gas emissions from electrical production  
19          in the United States for each year before calendar  
20          year 2026 are greater than the percentage specified  
21          in paragraph (1), then the determination described  
22          in such paragraph shall be deemed to have been  
23          made for calendar year 2025.

24          “(e) DEFINITIONS.—In this section:

1           “(1) CO<sub>2</sub>e PER KWh.—The term ‘CO<sub>2</sub>e per  
2           KWh’ means, with respect to any greenhouse gas,  
3           the equivalent carbon dioxide per kilowatt hour of  
4           electricity produced.

5           “(2) GREENHOUSE GAS.—The term ‘greenhouse  
6           gas’ has the same meaning given such term under  
7           section 211(o)(1)(G) of the Clean Air Act (42  
8           U.S.C. 7545(o)(1)(G)), as in effect on the date of  
9           the enactment of this section.

10           “(3) QUALIFIED FACILITY.—

11           “(A) IN GENERAL.—Subject to subpara-  
12           graphs (B) and (C), the term ‘qualified facility’  
13           means a facility which is—

14                   “(i) used for the generation of elec-  
15                   tricity, and

16                   “(ii) originally placed in service after  
17                   December 31, 2017.

18           “(B) 10-YEAR PRODUCTION CREDIT.—For  
19           purposes of this section, a facility shall only be  
20           treated as a qualified facility during the 10-year  
21           period beginning on the date the facility was  
22           originally placed in service.

23           “(C) EXPANSION OF FACILITY; INCRE-  
24           MENTAL PRODUCTION.—A qualified facility  
25           shall include either of the following in connec-



1           tion with a facility described in subparagraph  
2           (A)(i) that was previously placed in service, but  
3           only to the extent of the increased amount of  
4           electricity produced at the facility by reason of  
5           the following:

6                   “(i) A new unit placed in service after  
7                   December 31, 2017.

8                   “(ii) Any efficiency improvements or  
9                   additions of capacity placed in service after  
10                  December 31, 2017.

11           “(D) COORDINATION WITH OTHER CRED-  
12           ITS.—The term ‘qualified facility’ shall not in-  
13           clude any facility for which—

14                   “(i) a renewable electricity production  
15                   credit determined under section 45 is al-  
16                   lowed under section 38 for the taxable year  
17                   or any prior taxable year,

18                   “(ii) an energy credit determined  
19                   under section 48 is allowed under section  
20                   38 for the taxable year or any prior tax-  
21                   able year, or

22                   “(iii) a clean energy investment credit  
23                   determined under section 48E is allowed  
24                   under section 38 for the taxable year or  
25                   any prior taxable year.

1       “(f) FINAL GUIDANCE.—Not later than January 1,  
2 2017, the Secretary, in consultation with the Adminis-  
3 trator of the Environmental Protection Agency, shall issue  
4 final guidance regarding implementation of this section,  
5 including calculation of greenhouse gas emission rates for  
6 qualified facilities and determination of clean energy pro-  
7 duction credits under this section.

8       “(g) SPECIAL RULES.—

9           “(1) ONLY PRODUCTION IN THE UNITED  
10 STATES TAKEN INTO ACCOUNT.—Consumption or  
11 sales shall be taken into account under this section  
12 only with respect to electricity the production of  
13 which is within—

14           “(A) the United States (within the mean-  
15 ing of section 638(1)), or

16           “(B) a possession of the United States  
17 (within the meaning of section 638(2)).

18       “(2) COMBINED HEAT AND POWER SYSTEM  
19 PROPERTY.—

20           “(A) IN GENERAL.—For purposes of sub-  
21 section (a)(1)(B), the kilowatt hours of elec-  
22 tricity produced by a taxpayer at a qualified fa-  
23 cility shall include any production in the form  
24 of useful thermal energy by any combined heat  
25 and power system property within such facility.

1           “(B) COMBINED HEAT AND POWER SYS-  
2           TEM PROPERTY.—For purposes of this para-  
3           graph, the term ‘combined heat and power sys-  
4           tem property’ has the same meaning given such  
5           term by section 48(c)(3) (without regard to  
6           subparagraphs (A)(iv), (B), and (D) thereof).

7           “(C) CONVERSION FROM BTU TO KWH.—

8           “(i) IN GENERAL.—For purposes of  
9           subparagraph (A), the amount of kilowatt  
10          hours of electricity produced in the form of  
11          useful thermal energy shall be equal to the  
12          quotient of—

13                   “(I) the total useful thermal en-  
14                   ergy produced by the combined heat  
15                   and power system property within the  
16                   qualified facility, divided by

17                           “(II) the heat rate for such facil-  
18                   ity.

19           “(ii) HEAT RATE.—For purposes of  
20          this subparagraph, the term ‘heat rate’  
21          means the amount of energy used by the  
22          qualified facility to generate 1 kilowatt  
23          hour of electricity, expressed as British  
24          thermal units per net kilowatt hour gen-  
25          erated.

1           “(3) PRODUCTION ATTRIBUTABLE TO THE TAX-  
2           PAYER.—In the case of a qualified facility in which  
3           more than 1 person has an ownership interest, ex-  
4           cept to the extent provided in regulations prescribed  
5           by the Secretary, production from the facility shall  
6           be allocated among such persons in proportion to  
7           their respective ownership interests in the gross  
8           sales from such facility.

9           “(4) RELATED PERSONS.—Persons shall be  
10          treated as related to each other if such persons  
11          would be treated as a single employer under the reg-  
12          ulations prescribed under section 52(b). In the case  
13          of a corporation which is a member of an affiliated  
14          group of corporations filing a consolidated return,  
15          such corporation shall be treated as selling electricity  
16          to an unrelated person if such electricity is sold to  
17          such a person by another member of such group.

18          “(5) PASS-THRU IN THE CASE OF ESTATES AND  
19          TRUSTS.—Under regulations prescribed by the Sec-  
20          retary, rules similar to the rules of subsection (d) of  
21          section 52 shall apply.

22          “(6) ALLOCATION OF CREDIT TO PATRONS OF  
23          AGRICULTURAL COOPERATIVE.—

24                 “(A) ELECTION TO ALLOCATE.—



1 with respect to the organization for the  
2 taxable year, and

3 “(ii) shall be included in the amount  
4 determined under subsection (a) for the  
5 first taxable year of each patron ending on  
6 or after the last day of the payment period  
7 (as defined in section 1382(d)) for the tax-  
8 able year of the organization or, if earlier,  
9 for the taxable year of each patron ending  
10 on or after the date on which the patron  
11 receives notice from the cooperative of the  
12 apportionment.

13 “(C) SPECIAL RULES FOR DECREASE IN  
14 CREDITS FOR TAXABLE YEAR.—If the amount  
15 of the credit of a cooperative organization de-  
16 termined under subsection (a) for a taxable  
17 year is less than the amount of such credit  
18 shown on the return of the cooperative organi-  
19 zation for such year, an amount equal to the  
20 excess of—

21 “(i) such reduction, over

22 “(ii) the amount not apportioned to  
23 such patrons under subparagraph (A) for  
24 the taxable year,

1 shall be treated as an increase in tax imposed  
2 by this chapter on the organization. Such in-  
3 crease shall not be treated as tax imposed by  
4 this chapter for purposes of determining the  
5 amount of any credit under this chapter.

6 “(D) ELIGIBLE COOPERATIVE DEFINED.—  
7 For purposes of this section, the term ‘eligible  
8 cooperative’ means a cooperative organization  
9 described in section 1381(a) which is owned  
10 more than 50 percent by agricultural producers  
11 or by entities owned by agricultural producers.  
12 For this purpose an entity owned by an agricul-  
13 tural producer is one that is more than 50 per-  
14 cent owned by agricultural producers.”.

15 (b) CONFORMING AMENDMENTS.—

16 (1) Section 38(b) is amended—

17 (A) in paragraph (35), by striking “plus”  
18 at the end,

19 (B) in paragraph (36), by striking the pe-  
20 riod at the end and inserting “, plus”, and

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

23 “(37) the clean energy production credit deter-  
24 mined under section 45S(a).”.

1           (2) The table of sections for subpart D of part  
2           IV of subchapter A of chapter 1 is amended by add-  
3           ing at the end the following new item:

          “Sec. 45S. Clean energy production credit.”.

4           (c) EFFECTIVE DATE.—The amendments made by  
5 this section shall apply to facilities placed in service after  
6 December 31, 2017.

7 **SEC. 5012. CLEAN ENERGY INVESTMENT CREDIT.**

8           (a) BUSINESS CREDIT.—

9           (1) IN GENERAL.—Subpart E of part IV of  
10          subchapter A of chapter 1 is amended by inserting  
11          after section 48D the following new section:

12 **“SEC. 48E. CLEAN ENERGY INVESTMENT CREDIT.**

13          “(a) INVESTMENT CREDIT FOR QUALIFIED PROP-  
14          PERTY.—

15               “(1) IN GENERAL.—For purposes of section 46,  
16          the clean energy investment credit for any taxable  
17          year is an amount equal to the sum of—

18                       “(A) the clean energy percentage of the  
19                       qualified investment for such taxable year with  
20                       respect to any qualified facility, plus

21                       “(B) 30 percent of the qualified invest-  
22                       ment for such taxable year with respect to  
23                       qualified carbon capture and sequestration  
24                       equipment, plus



1           “(C) 30 percent of the qualified investment  
2           for such taxable year with respect to energy  
3           storage property.

4           “(2) CLEAN ENERGY PERCENTAGE.—

5           “(A) IN GENERAL.—

6           “(i) MAXIMUM PERCENTAGE.—Except  
7           as provided in clause (ii), the clean energy  
8           percentage is 30 percent.

9           “(ii) REDUCTION OF PERCENTAGE  
10           BASED ON GREENHOUSE GAS EMISSIONS  
11           RATE.—The clean energy percentage shall  
12           be reduced (but not below zero) by an  
13           amount which bears the same ratio to 30  
14           percent as the anticipated greenhouse gas  
15           emissions rate for the qualified facility  
16           bears to 372 grams of CO<sub>2e</sub> per KWh.

17           “(B) ROUNDING.—If any amount deter-  
18           mined under subparagraph (A)(ii) is not a mul-  
19           tiple of 1 percent, such amount shall be round-  
20           ed to the nearest multiple of 1 percent.

21           “(3) COORDINATION WITH REHABILITATION  
22           CREDIT.—The clean energy percentage shall not  
23           apply to that portion of the basis of any property  
24           which is attributable to qualified rehabilitation ex-  
25           penditures (as defined in section 47(c)(2)).

1       “(b) QUALIFIED INVESTMENT WITH RESPECT TO  
2 ANY QUALIFIED FACILITY.—

3           “(1) IN GENERAL.—For purposes of subsection  
4 (a)(1)(A), the qualified investment with respect to  
5 any qualified facility for any taxable year is the  
6 basis of any qualified property placed in service by  
7 the taxpayer during such taxable year which is part  
8 of a qualified facility.

9           “(2) QUALIFIED PROPERTY.—The term ‘quali-  
10 fied property’ means property—

11           “(A) which is—

12           “(i) tangible personal property, or

13           “(ii) other tangible property (not in-  
14 cluding a building or its structural compo-  
15 nents), but only if such property is used as  
16 an integral part of the qualified facility,

17           “(B) with respect to which depreciation (or  
18 amortization in lieu of depreciation) is allow-  
19 able,

20           “(C) which is constructed, reconstructed,  
21 erected, or acquired by the taxpayer, and

22           “(D) the original use of which commences  
23 with the taxpayer.

24           “(3) QUALIFIED FACILITY.—The term ‘quali-  
25 fied facility’ has the same meaning given such term

1 by section 45S(e)(3) (without regard to subpara-  
2 graphs (B) and (D) thereof). Such term shall not in-  
3 clude any facility for which a renewable electricity  
4 production credit under section 45 or an energy  
5 credit determined under section 48 is allowed under  
6 section 38 for the taxable year or any prior taxable  
7 year.

8 “(c) QUALIFIED INVESTMENT WITH RESPECT TO  
9 QUALIFIED CARBON CAPTURE AND SEQUESTRATION  
10 EQUIPMENT.—

11 “(1) IN GENERAL.—For purposes of subsection  
12 (a)(1)(B), the qualified investment with respect to  
13 qualified carbon capture and sequestration equip-  
14 ment for any taxable year is the basis of any quali-  
15 fied carbon capture and sequestration equipment  
16 placed in service by the taxpayer during such taxable  
17 year.

18 “(2) QUALIFIED CARBON CAPTURE AND SE-  
19 QUESTRATION EQUIPMENT.—The term ‘qualified  
20 carbon capture and sequestration equipment’ means  
21 property—

22 “(A) installed in a facility placed in service  
23 before January 1, 2018, which produces elec-  
24 tricity,

1           “(B) which results in at least a 50 percent  
2 reduction in the carbon dioxide emissions rate  
3 at the facility, as compared to such rate before  
4 installation of such equipment, through the cap-  
5 ture and disposal of qualified carbon dioxide (as  
6 defined in paragraph (3)(A)),

7           “(C) with respect to which depreciation is  
8 allowable,

9           “(D) which is constructed, reconstructed,  
10 erected, or acquired by the taxpayer, and

11           “(E) the original use of which commences  
12 with the taxpayer.

13           “(3) QUALIFIED CARBON DIOXIDE.—

14           “(A) IN GENERAL.—The term ‘qualified  
15 carbon dioxide’ means carbon dioxide captured  
16 from an industrial source which—

17           “(i) would otherwise be released into  
18 the atmosphere as industrial emission of  
19 greenhouse gas,

20           “(ii) is measured at the source of cap-  
21 ture and verified at the point of disposal or  
22 injection,

23           “(iii) is disposed of by the taxpayer in  
24 secure geological storage, and

1                   “(iv) is captured and disposed of with-  
2                   in the United States (within the meaning  
3                   of section 638(1)) or a possession of the  
4                   United States (within the meaning of sec-  
5                   tion 638(2)).

6                   “(B) SECURE GEOLOGICAL STORAGE.—  
7                   The term ‘secure geological storage’ has the  
8                   same meaning given to such term under section  
9                   45Q(d)(2).

10                  “(d) QUALIFIED INVESTMENT WITH RESPECT TO  
11 ENERGY STORAGE PROPERTY.—

12                   “(1) IN GENERAL.—For purposes of subsection  
13                   (a)(1)(C), the qualified investment with respect to  
14                   energy storage property for any taxable year is the  
15                   basis of any energy storage property placed in serv-  
16                   ice by the taxpayer during such taxable year.

17                   “(2) ENERGY STORAGE PROPERTY.—The term  
18                   ‘energy storage property’ means property—

19                   “(A) installed at or near a facility which  
20                   produces electricity,

21                   “(B) which receives, stores, and delivers  
22                   electricity or energy for conversion to electricity  
23                   which is sold by the taxpayer to an unrelated  
24                   person (or, in the case of a facility which is  
25                   equipped with a metering device which is owned

1 and operated by an unrelated person, sold or  
2 consumed by the taxpayer), which may in-  
3 clude—

4 “(i) hydroelectric pumped storage,

5 “(ii) compressed air energy storage,

6 “(iii) regenerative fuel cells,

7 “(iv) batteries,

8 “(v) superconducting magnetic energy  
9 storage,

10 “(vi) thermal energy storage systems,

11 “(vii) fuel cells (as defined in section  
12 48(c)(1)),

13 “(viii) any other relevant technology  
14 identified by the Secretary (in consultation  
15 with the Secretary of Energy), and

16 “(ix) any combination of the prop-  
17 erties described in clauses (i) through  
18 (viii),

19 “(C) with respect to which depreciation is  
20 allowable,

21 “(D) which is constructed, reconstructed,  
22 erected, or acquired by the taxpayer,

23 “(E) the original use of which commences  
24 with the taxpayer, and

1           “(F) which is placed in service after De-  
2           cember 31, 2017.

3           “(e) GREENHOUSE GAS EMISSIONS RATE.—

4           “(1) IN GENERAL.—For purposes of this sec-  
5           tion, the term ‘greenhouse gas emissions rate’ has  
6           the same meaning given such term under subsection  
7           (b) of section 45S.

8           “(2) ESTABLISHMENT OF SAFE HARBOR FOR  
9           QUALIFIED PROPERTY.—

10           “(A) IN GENERAL.—The Secretary, in con-  
11           sultation with the Administrator of the Envi-  
12           ronmental Protection Agency, shall, by regula-  
13           tion, establish safe-harbor greenhouse gas emis-  
14           sions rates for types or categories of qualified  
15           property which are part of a qualified facility,  
16           which a taxpayer may elect to use for purposes  
17           of this section.

18           “(B) ROUNDING.—In establishing the safe-  
19           harbor greenhouse gas emissions rates for  
20           qualified property, the Secretary may round  
21           such rates to the nearest multiple of 37.2  
22           grams of CO<sub>2</sub>e per KWh (or, in the case of a  
23           greenhouse gas emissions rate which is less  
24           than 18.6 grams of CO<sub>2</sub>e per KWh, by round-  
25           ing such rate to zero).

1       “(f) CERTAIN PROGRESS EXPENDITURE RULES  
2 MADE APPLICABLE.—Rules similar to the rules of sub-  
3 section (c)(4) and (d) of section 46 (as in effect on the  
4 day before the date of the enactment of the Revenue Rec-  
5 onciliation Act of 1990) shall apply for purposes of sub-  
6 section (a).

7       “(g) CREDIT PHASE-OUT.—

8           “(1) IN GENERAL.—Subject to paragraph (3),  
9 if the Secretary, in consultation with the Secretary  
10 of Energy and the Administrator of the Environ-  
11 mental Protection Agency, determines that the an-  
12 nual greenhouse gas emissions from electrical pro-  
13 duction in the United States are equal to or less  
14 than 72 percent of the annual greenhouse gas emis-  
15 sions from electrical production in the United States  
16 for calendar year 2005, the amount of the clean en-  
17 ergy investment credit under subsection (a) for any  
18 qualified facility, qualified carbon capture and se-  
19 questration equipment, or energy storage property  
20 placed in service during a calendar year described in  
21 paragraph (2) shall be equal to the product of—

22           “(A) the amount of the credit determined  
23 under subsection (a) without regard to this sub-  
24 section, multiplied by



1                   “(B) the phase-out percentage under para-  
2                   graph (2).

3                   “(2) PHASE-OUT PERCENTAGE.—The phase-out  
4                   percentage under this paragraph is equal to—

5                   “(A) for a facility or property placed in  
6                   service during the first calendar year following  
7                   the calendar year in which the determination  
8                   described in paragraph (1) is made, 75 percent,

9                   “(B) for a facility or property placed in  
10                  service during the second calendar year fol-  
11                  lowing such determination year, 50 percent,

12                  “(C) for a facility or property placed in  
13                  service during the third calendar year following  
14                  such determination year, 25 percent, and

15                  “(D) for a facility or property placed in  
16                  service during any calendar year subsequent to  
17                  the year described in subparagraph (C), 0 per-  
18                  cent.

19                  “(3) DEADLINE TO BEGIN PHASE-OUT.—If the  
20                  Secretary, in consultation with the Secretary of En-  
21                  ergy and the Administrator of the Environmental  
22                  Protection Agency, determines that the annual  
23                  greenhouse gas emissions from electrical production  
24                  in the United States for each year before calendar  
25                  year 2026 are greater than the percentage specified

1 in paragraph (1), then the determination described  
2 in such paragraph shall be deemed to have been  
3 made for calendar year 2025.

4 “(h) DEFINITIONS.—In this section:

5 “(1) CO<sub>2</sub>e PER KWh.—The term ‘CO<sub>2</sub>e per  
6 KWh’ has the same meaning given such term under  
7 section 45S(e)(1).

8 “(2) GREENHOUSE GAS.—The term ‘greenhouse  
9 gas’ has the same meaning given such term under  
10 section 45S(e)(2).

11 “(i) RECAPTURE OF CREDIT.—For purposes of sec-  
12 tion 50, if the Administrator of the Environmental Protec-  
13 tion Agency determines that—

14 “(1) the greenhouse gas emissions rate for a  
15 qualified facility is significantly higher than the an-  
16 ticipated greenhouse gas emissions rate claimed by  
17 the taxpayer for purposes of the clean energy invest-  
18 ment credit under this section, or

19 “(2) with respect to any qualified carbon cap-  
20 ture and sequestration equipment installed in a facil-  
21 ity, the carbon dioxide emissions from such facility  
22 cease to be captured or disposed of in a manner con-  
23 sistent with the requirements of subsection (c),

1 the facility or equipment shall cease to be investment cred-  
2 it property in the taxable year in which the determination  
3 is made.

4 “(j) FINAL GUIDANCE.—Not later than January 1,  
5 2017, the Secretary, in consultation with the Adminis-  
6 trator of the Environmental Protection Agency, shall issue  
7 final guidance regarding implementation of this section,  
8 including calculation of greenhouse gas emission rates for  
9 qualified facilities and determination of clean energy in-  
10 vestment credits under this section.”.

11 (2) CONFORMING AMENDMENTS.—

12 (A) Section 46 is amended by inserting a  
13 comma at the end of paragraph (4), by striking  
14 “and” at the end of paragraph (5), by striking  
15 the period at the end of paragraph (6) and in-  
16 serting “, and”, and by adding at the end the  
17 following new paragraph:

18 “(7) the clean energy investment credit.”.

19 (B) Section 49(a)(1)(C) is amended by  
20 striking “and” at the end of clause (v), by  
21 striking the period at the end of clause (vi) and  
22 inserting a comma, and by adding at the end  
23 the following new clauses:

1                   “(vii) the basis of any qualified prop-  
2                   erty which is part of a qualified facility  
3                   under section 48E,

4                   “(viii) the basis of any qualified car-  
5                   bon capture and sequestration equipment  
6                   under section 48E, and

7                   “(ix) the basis of any energy storage  
8                   property under section 48E.”.

9                   (C) Section 50(a)(2)(E) is amended by in-  
10                  serting “or 48E(e)” after “section 48(b)”.

11                  (D) The table of sections for subpart E of  
12                  part IV of subchapter A of chapter 1 is amend-  
13                  ed by inserting after the item relating to section  
14                  48D the following new item:

“48E. Clean energy investment credit.”.

15                  (3) EFFECTIVE DATE.—The amendments made  
16                  by this subsection shall apply to property placed in  
17                  service after December 31, 2017, under rules similar  
18                  to the rules of section 48(m) of the Internal Revenue  
19                  Code of 1986 (as in effect on the day before the  
20                  date of the enactment of the Revenue Reconciliation  
21                  Act of 1990).

22                  (b) INDIVIDUAL CREDIT.—

23                  (1) IN GENERAL.—Section 25D is amended to  
24                  read as follows:

1 **“SEC. 25D. CLEAN RESIDENTIAL ENERGY CREDIT.**

2 “(a) ALLOWANCE OF CREDIT.—

3 “(1) IN GENERAL.—In the case of an indi-  
4 vidual, there shall be allowed as a credit against the  
5 tax imposed by this chapter for the taxable year an  
6 amount equal to the sum of—

7 “(A) the clean energy percentage of the ex-  
8 penditures made by the taxpayer for qualified  
9 property which is—

10 “(i) installed in a dwelling unit which  
11 is located in the United States and used as  
12 a residence by the taxpayer, and

13 “(ii) placed in service during such tax-  
14 able year, plus

15 “(B) 30 percent of the expenditures made  
16 by the taxpayer for energy storage property  
17 which is—

18 “(i) installed in a dwelling unit which  
19 is located in the United States and used as  
20 a residence by the taxpayer, and

21 “(ii) placed in service during such tax-  
22 able year.

23 “(2) CLEAN ENERGY PERCENTAGE.—

24 “(A) IN GENERAL.—

1                   “(i) MAXIMUM PERCENTAGE.—Except  
2                   as provided in clause (ii), the clean energy  
3                   percentage is 30 percent.

4                   “(ii) REDUCTION OF PERCENTAGE  
5                   BASED ON GREENHOUSE GAS EMISSIONS  
6                   RATE.—The clean energy percentage shall  
7                   be reduced (but not below zero) by an  
8                   amount which bears the same ratio to 30  
9                   percent as the anticipated greenhouse gas  
10                  emissions rate for the qualified property  
11                  bears to 372 grams of CO<sub>2</sub>e per KWh.

12                  “(B) ROUNDING.—If any amount deter-  
13                  mined under subparagraph (A)(ii) is not a mul-  
14                  tiple of 1 percent, such amount shall be round-  
15                  ed to the nearest multiple of 1 percent.

16                  “(C) DEFINITIONS.—For purposes of this  
17                  section, the terms ‘greenhouse gas emissions  
18                  rate’ and ‘CO<sub>2</sub>e per KWh’ have the same mean-  
19                  ings given such terms under subsections (b) and  
20                  (e)(1) of section 45S, respectively.

21                  “(3) ESTABLISHMENT OF SAFE HARBOR FOR  
22                  QUALIFIED PROPERTY.—

23                  “(A) IN GENERAL.—The Secretary, in con-  
24                  sultation with the Administrator of the Envi-  
25                  ronmental Protection Agency, shall, by regula-

1           tion, establish safe-harbor greenhouse gas emis-  
2           sions rates for types or categories of qualified  
3           property which are installed in a dwelling unit,  
4           which a taxpayer may elect to use for purposes  
5           of this section.

6           “(B) ROUNDING.—In establishing the safe-  
7           harbor greenhouse gas emissions rates for  
8           qualified property, the Secretary may round  
9           such rates to the nearest multiple of 37.2  
10          grams of CO<sub>2</sub>e per KWh (or, in the case of a  
11          greenhouse gas emissions rate which is less  
12          than 18.6 grams of CO<sub>2</sub>e per KWh, by round-  
13          ing such rate to zero).

14          “(b) QUALIFIED PROPERTY.—The term ‘qualified  
15          property’ means property—

16               “(1) which is tangible personal property,

17               “(2) which is used for the generation of elec-  
18          tricity,

19               “(3) which is constructed, reconstructed, erect-  
20          ed, or acquired by the taxpayer,

21               “(4) the original use of which commences with  
22          the taxpayer, and

23               “(5) which is originally placed in service after  
24          December 31, 2017.

1           “(c) ENERGY STORAGE PROPERTY.—The term ‘en-  
2   ergy storage property’ means property which receives,  
3   stores, and delivers electricity or energy for conversion to  
4   electricity which is consumed by the taxpayer, which may  
5   include—

6           “(1) batteries,

7           “(2) thermal energy storage systems,

8           “(3) fuel cells,

9           “(4) any other relevant technology identified by  
10   the Secretary (in consultation with the Secretary of  
11   Energy), and

12           “(5) any combination of the properties de-  
13   scribed in paragraphs (1) through (4).

14           “(d) CARRYFORWARD OF UNUSED CREDIT.—If the  
15   credit allowable under subsection (a) exceeds the limita-  
16   tion imposed by section 26(a) for such taxable year re-  
17   duced by the sum of the credits allowable under this sub-  
18   part (other than this section), such excess shall be carried  
19   to the succeeding taxable year and added to the credit al-  
20   lowable under subsection (a) for such succeeding taxable  
21   year.

22           “(e) CREDIT PHASE-OUT.—

23           “(1) IN GENERAL.—Subject to paragraph (3),  
24   if the Secretary determines that the annual green-  
25   house gas emissions from electrical production in the



1 United States are equal to or less than the percent-  
2 age specified in section 48E(g), the amount of the  
3 credit allowable under subsection (a) for any quali-  
4 fied property or energy storage property placed in  
5 service during a calendar year described in para-  
6 graph (2) shall be equal to the product of—

7 “(A) the amount of the credit determined  
8 under subsection (a) without regard to this sub-  
9 section, multiplied by

10 “(B) the phase-out percentage under para-  
11 graph (2).

12 “(2) PHASE-OUT PERCENTAGE.—The phase-out  
13 percentage under this paragraph is equal to—

14 “(A) for property placed in service during  
15 the first calendar year following the calendar  
16 year in which the determination described in  
17 paragraph (1) is made, 75 percent,

18 “(B) for property placed in service during  
19 the second calendar year following such deter-  
20 mination year, 50 percent,

21 “(C) for property placed in service during  
22 the third calendar year following such deter-  
23 mination year, 25 percent, and

1           “(D) for property placed in service during  
2           any calendar year subsequent to the year de-  
3           scribed in subparagraph (C), 0 percent.

4           “(3) DEADLINE TO BEGIN PHASE-OUT.—If the  
5           Secretary, in consultation with the Secretary of En-  
6           ergy and the Administrator of the Environmental  
7           Protection Agency, determines that the annual  
8           greenhouse gas emissions from electrical production  
9           in the United States for each year before calendar  
10          year 2026 are greater than the percentage specified  
11          in section 48E(g), then the determination described  
12          in paragraph (1) shall be deemed to have been made  
13          for calendar year 2025.

14          “(f) SPECIAL RULES.—For purposes of this section:

15               “(1) LABOR COSTS.—Expenditures for labor  
16               costs properly allocable to the onsite preparation, as-  
17               sembly, or original installation of the qualified prop-  
18               erty or energy storage property and for piping or  
19               wiring to interconnect such property to the dwelling  
20               unit shall be taken into account for purposes of this  
21               section.

22               “(2) TENANT-STOCKHOLDER IN COOPERATIVE  
23               HOUSING CORPORATION.—In the case of an indi-  
24               vidual who is a tenant-stockholder (as defined in sec-  
25               tion 216) in a cooperative housing corporation (as

1 defined in such section), such individual shall be  
2 treated as having made his tenant-stockholder's pro-  
3 portionate share (as defined in section 216(b)(3)) of  
4 any expenditures of such corporation.

5 “(3) CONDOMINIUMS.—

6 “(A) IN GENERAL.—In the case of an indi-  
7 vidual who is a member of a condominium man-  
8 agement association with respect to a condo-  
9 minium which the individual owns, such indi-  
10 vidual shall be treated as having made the indi-  
11 vidual's proportionate share of any expenditures  
12 of such association.

13 “(B) CONDOMINIUM MANAGEMENT ASSO-  
14 CIATION.—For purposes of this paragraph, the  
15 term ‘condominium management association’  
16 means an organization which meets the require-  
17 ments of paragraph (1) of section 528(c) (other  
18 than subparagraph (E) thereof) with respect to  
19 a condominium project substantially all of the  
20 units of which are used as residences.

21 “(4) ALLOCATION IN CERTAIN CASES.—If less  
22 than 80 percent of the use of a property is for non-  
23 business purposes, only that portion of the expendi-  
24 tures for such property which is properly allocable to

1 use for nonbusiness purposes shall be taken into ac-  
2 count.

3 “(g) BASIS ADJUSTMENT.—For purposes of this sub-  
4 title, if a credit is allowed under this section for any ex-  
5 penditures with respect to any property, the increase in  
6 the basis of such property which would (but for this sub-  
7 section) result from such expenditures shall be reduced by  
8 the amount of the credit so allowed.

9 “(h) FINAL GUIDANCE.—Not later than January 1,  
10 2017, the Secretary, in consultation with the Adminis-  
11 trator of the Environmental Protection Agency, shall issue  
12 final guidance regarding implementation of this section,  
13 including calculation of greenhouse gas emission rates for  
14 qualified property and determination of residential clean  
15 energy property credits under this section.”.

16 (2) CONFORMING AMENDMENTS.—

17 (A) Paragraph (1) of section 45(d) is  
18 amended by striking “Such term” and all that  
19 follows through the period and inserting the fol-  
20 lowing: “Such term shall not include any facil-  
21 ity with respect to which any expenditures for  
22 qualified property (as defined in subsection (b)  
23 of section 25D) which uses wind to produce  
24 electricity is taken into account in determining  
25 the credit under such section.”.

1 (B) Paragraph (34) of section 1016(a) is  
2 amended by striking “section 25D(f)” and in-  
3 serting “section 25D(h)”.

4 (C) The item relating to section 25D in  
5 the table of contents for subpart A of part IV  
6 of subchapter A of chapter 1 is amended to  
7 read as follows:

“Sec. 25D. Clean residential energy credit.”.

8 (3) EFFECTIVE DATE.—The amendments made  
9 by this section shall apply to property placed in serv-  
10 ice after December 31, 2017.

11 **SEC. 5013. EXTENSIONS AND MODIFICATIONS OF VARIOUS**  
12 **ENERGY PROVISIONS.**

13 (a) NONBUSINESS ENERGY PROPERTY.—

14 (1) IN GENERAL.—Paragraph (2) of section  
15 25C(g) is amended by striking “December 31,  
16 2014” and inserting “December 31, 2017”.

17 (2) EFFECTIVE DATE.—The amendments made  
18 by this subsection shall apply to property placed in  
19 service after December 31, 2014.

20 (b) RESIDENTIAL ENERGY EFFICIENT PROPERTY.—  
21 Subsection (g) of section 25D is amended by striking “De-  
22 cember 31, 2016” and inserting “December 31, 2017”.

23 (c) ALTERNATIVE FUEL VEHICLE REFUELING PROP-  
24 erty Credit.—

1           (1) IN GENERAL.—Paragraph (1) of section  
2           30C(g) is amended by striking “December 31,  
3           2014” and inserting “December 31, 2017”.

4           (2) EFFECTIVE DATE.—The amendments made  
5           by this subsection shall apply to property placed in  
6           service after December 31, 2014.

7           (d) 2- AND 3-WHEELED PLUG-IN ELECTRIC VEHI-  
8           CLES.—

9           (1) IN GENERAL.—Subparagraph (E) of section  
10          30D(g) is amended to read as follows:

11                   “(E) is acquired—

12                           “(i) after December 31, 2011, and be-  
13                           fore January 1, 2014, or

14                           “(ii) after December 31, 2014, and  
15                           before January 1, 2018.”.

16          (2) EFFECTIVE DATE.—The amendments made  
17          by this subsection shall apply to vehicles acquired  
18          after December 31, 2014.

19          (e) ELECTRICITY PRODUCED FROM CERTAIN RE-  
20          NEWABLE RESOURCES.—

21           (1) IN GENERAL.—The following provisions of  
22          section 45(d) are each amended by striking “Janu-  
23          ary 1, 2015” each place it appears and inserting  
24          “January 1, 2018”:

25                   (A) Paragraph (1).

1 (B) Paragraph (2)(A).

2 (C) Paragraph (3)(A).

3 (D) Paragraph (4)(B).

4 (E) Paragraph (6).

5 (F) Paragraph (7).

6 (G) Paragraph (9).

7 (H) Paragraph (11)(B).

8 (2) EFFECTIVE DATE.—The amendments made  
9 by this subsection shall take effect on January 1,  
10 2015.

11 (f) CREDIT FOR PRODUCTION FROM ADVANCED NU-  
12 CLEAR POWER FACILITIES.—Section 45J(d)(1)(B) is  
13 amended by striking “2021” and inserting “2018”.

14 (g) NEW ENERGY EFFICIENT HOME CREDIT.—

15 (1) IN GENERAL.—Subsection (g) of section  
16 45L is amended by striking “December 31, 2014”  
17 and inserting “December 31, 2017”.

18 (2) EFFECTIVE DATE.—The amendments made  
19 by this subsection shall apply to any qualified new  
20 energy efficient home acquired after December 31,  
21 2014.

22 (h) REPEAL OF ENERGY EFFICIENT APPLIANCE  
23 CREDIT.—

1           (1) IN GENERAL.—Subpart D of part IV of  
2           subchapter A of chapter 1 of subtitle A is amended  
3           by striking section 45M.

4           (2) CONFORMING AMENDMENTS.—

5                 (A) Section 38(b) is amended by striking  
6                 paragraph (24).

7                 (B) The table of sections for subpart D of  
8                 part IV of subchapter A of chapter 1 of subtitle  
9                 A is amended by striking the item relating to  
10                section 45M.

11           (3) EFFECTIVE DATE.—The amendments made  
12           by this subsection shall take effect on the date of the  
13           enactment of this Act.

14           (i) CREDIT FOR CARBON DIOXIDE SEQUESTRA-  
15           TION.—Section 45Q(c) is amended—

16                 (1) in paragraph (2), by striking “and” at the  
17                 end,

18                 (2) in paragraph (3), by striking the period at  
19                 the end and inserting “, and”, and

20                 (3) by adding at the end the following new  
21                 paragraph:

22                         “(4) which is placed in service before January  
23                         1, 2018.”.

24           (j) ENERGY CREDIT.—



1           (1) QUALIFIED INVESTMENT CREDIT FACIL-  
2           ITY.—

3           (A) IN GENERAL.—Section 48(a)(5)(C)(ii)  
4           is amended by striking “January 1, 2015” and  
5           inserting “January 1, 2018”.

6           (B) EFFECTIVE DATE.—The amendments  
7           made by this paragraph shall take effect on  
8           January 1, 2015.

9           (2) SOLAR ENERGY PROPERTY.—Section 48(a)  
10          is amended—

11           (A) in paragraphs (2)(A)(i)(II) and  
12           (3)(A)(ii), by striking “January 1, 2017” each  
13           place it appears and inserting “January 1,  
14           2018”, and

15           (B) in paragraph (3)(A)(i), by inserting  
16           “but only with respect to periods ending before  
17           January 1, 2018” after “swimming pool,”.

18           (3) GEOTHERMAL ENERGY PROPERTY.—Section  
19           48(a)(3)(A)(iii) is amended by inserting “with re-  
20           spect to periods ending before January 1, 2018,  
21           and” after “but only”.

22           (4) THERMAL ENERGY PROPERTY.—Section  
23           48(a)(3)(A)(vii) is amended by striking “January 1,  
24           2017” and inserting “January 1, 2018”.

1           (5) QUALIFIED FUEL CELL PROPERTY.—Sec-  
2           tion 48(c)(1)(D) is amended by striking “December  
3           31, 2016” and inserting “December 31, 2017”.

4           (6) QUALIFIED MICROTURBINE PROPERTY.—  
5           Section 48(c)(2)(D) is amended by striking “Decem-  
6           ber 31, 2016” and inserting “December 31, 2017”.

7           (7) COMBINED HEAT AND POWER SYSTEM  
8           PROPERTY.—Section 48(c)(3)(A)(iv) is amended by  
9           striking “January 1, 2017” and inserting “January  
10          1, 2018”.

11          (8) QUALIFIED SMALL WIND ENERGY PROP-  
12          ERTY.—Section 48(c)(4)(C) is amended by striking  
13          “December 31, 2016” and inserting “December 31,  
14          2017”.

15          (k) QUALIFYING ADVANCED ENERGY PROJECT  
16          CREDIT.—

17           (1) IN GENERAL.—Section 48C is amended—

18           (A) by redesignating subsection (e) as sub-  
19           section (f), and

20           (B) by inserting after subsection (d) the  
21           following new subsection:

22           “(e) ADDITIONAL QUALIFYING ADVANCED ENERGY  
23          PROGRAM.—

24           “(1) ESTABLISHMENT.—

1           “(A) IN GENERAL.—Not later than 180  
2 days after the date of enactment of this sub-  
3 section, the Secretary, in consultation with the  
4 Secretary of Energy, shall establish an addi-  
5 tional qualifying advanced energy project pro-  
6 gram to consider and award certifications for  
7 qualified investments eligible for credits under  
8 this section to qualifying advanced energy  
9 project sponsors.

10           “(B) LIMITATION.—The total amount of  
11 credits that may be allocated under the pro-  
12 gram described in subparagraph (A) shall not  
13 exceed \$5,000,000,000.

14           “(2) CERTIFICATION.—

15           “(A) APPLICATION PERIOD.—Each appli-  
16 cant for certification under this paragraph shall  
17 submit an application containing such informa-  
18 tion as the Secretary may require during the 2-  
19 year period beginning on the date the Secretary  
20 establishes the program under paragraph (1).

21           “(B) TIME TO MEET CRITERIA FOR CER-  
22 TIFICATION.—Each applicant for certification  
23 shall have 1 year from the date of acceptance  
24 by the Secretary of the application during  
25 which to provide to the Secretary evidence that

1 the requirements of the certification have been  
2 met.

3 “(C) PERIOD OF ISSUANCE.—An applicant  
4 which receives a certification shall have 3 years  
5 from the date of issuance of the certification in  
6 order to place the project in service and if such  
7 project is not placed in service by that time pe-  
8 riod, then the certification shall no longer be  
9 valid.

10 “(3) SELECTION CRITERIA.—In determining  
11 which qualifying advanced energy projects to certify  
12 under this section, the Secretary shall consider the  
13 same criteria described in subsection (d)(3).

14 “(4) REVIEW AND REDISTRIBUTION.—

15 “(A) REVIEW.—Not later than 4 years  
16 after the date of enactment of this subsection,  
17 the Secretary shall review the credits allocated  
18 pursuant to this subsection as of such date.

19 “(B) REDISTRIBUTION.—The Secretary  
20 may reallocate credits awarded under this sec-  
21 tion if the Secretary determines that—

22 “(i) there is an insufficient quantity  
23 of qualifying applications for certification  
24 pending at the time of the review, or

1                   “(ii) any certification made pursuant  
2                   to paragraph (2) has been revoked pursu-  
3                   ant to paragraph (2)(B) because the  
4                   project subject to the certification has been  
5                   delayed as a result of third party opposi-  
6                   tion or litigation to the proposed project.

7                   “(C) REALLOCATION.—If the Secretary de-  
8                   termines that credits under this section are  
9                   available for reallocation pursuant to the re-  
10                  quirements set forth in paragraph (2), the Sec-  
11                  retary is authorized to conduct an additional  
12                  program for applications for certification.

13                  “(5) DISCLOSURE OF ALLOCATIONS.—The Sec-  
14                  retary shall, upon making a certification under this  
15                  subsection, publicly disclose the identity of the appli-  
16                  cant and the amount of the credit with respect to  
17                  such applicant.”.

18                  “(2) EFFECTIVE DATE.—The amendments made  
19                  by this subsection shall apply to periods after the  
20                  date of the enactment of this Act, under rules simi-  
21                  lar to the rules of section 48(m) of the Internal Rev-  
22                  enue Code of 1986 (as in effect on the day before  
23                  the date of the enactment of the Revenue Reconcili-  
24                  ation Act of 1990).

1 (l) ENERGY EFFICIENT COMMERCIAL BUILDINGS  
2 DEDUCTION.—

3 (1) IN GENERAL.—Subsection (h) of section  
4 179D is amended by striking “December 31, 2014”  
5 and inserting “December 31, 2017”.

6 (2) EFFECTIVE DATE.—The amendments made  
7 by this section shall apply to property placed in serv-  
8 ice after December 31, 2014.

## 9 **Subtitle B—Clean Fuel Tax Credits**

### 10 **SEC. 5021. CLEAN FUEL PRODUCTION CREDIT.**

11 (a) IN GENERAL.—Subpart D of part IV of sub-  
12 chapter A of chapter 1, as amended by section \_\_01, is  
13 amended by adding at the end the following new section:

#### 14 **“SEC. 45T. CLEAN FUEL PRODUCTION CREDIT.**

15 “(a) AMOUNT OF CREDIT.—

16 “(1) IN GENERAL.—For purposes of section 38,  
17 the clean fuel production credit for any taxable year  
18 is an amount equal to the product of—

19 “(A) \$1.00 per energy equivalent of a gal-  
20 lon of gasoline with respect to any transpor-  
21 tation fuel which is—

22 “(i) produced by the taxpayer at a  
23 qualified facility, and

24 “(ii) sold or used by the taxpayer in  
25 a manner described in paragraph (2), and

1           “(B) the emissions factor for such fuel (as  
2           determined under subsection (b)(2)).

3           “(2) SALE OR USE.—For purposes of para-  
4           graph (1)(A)(ii), the transportation fuel is sold or  
5           used in a manner described in this paragraph if such  
6           fuel is—

7           “(A) sold by the taxpayer to an unrelated  
8           person—

9           “(i) for use by such person in the pro-  
10          duction of a fuel mixture that will be used  
11          as a transportation fuel,

12          “(ii) for use by such person as a  
13          transportation fuel in a trade or business,  
14          or

15          “(iii) who sells such fuel at retail to  
16          another person and places such fuel in the  
17          fuel tank of such other person, or

18          “(B) used or sold by the taxpayer for any  
19          purpose described in subparagraph (A).

20          “(3) ROUNDING.—If any amount determined  
21          under paragraph (1) is not a multiple of 0.1 cent,  
22          such amount shall be rounded to the nearest mul-  
23          tiple of 0.1 cent.

24          “(b) EMISSIONS FACTORS.—

25          “(1) EMISSIONS FACTOR.—

1           “(A) IN GENERAL.—The emissions factor  
2 of a transportation fuel shall be an amount  
3 equal to the quotient of—

4                   “(i) an amount (not less than zero)  
5 equal to —

6                           “(I) 77.23, minus

7                           “(II) the emissions rate for such  
8 fuel, divided by

9                           “(ii) 77.23.

10           “(B) ESTABLISHMENT OF SAFE HARBOR  
11 EMISSIONS RATE.—The Secretary, in consulta-  
12 tion with the Administrator of the Environ-  
13 mental Protection Agency, shall establish the  
14 safe harbor emissions rate for similar types and  
15 categories of transportation fuels based on the  
16 amount of lifecycle greenhouse gas emissions  
17 (as described in section 211(o)(1)(H) of the  
18 Clean Air Act (42 U.S.C. 7545(o)(1)(H)), as in  
19 effect on the date of the enactment of this sec-  
20 tion) for such fuels, expressed as kilograms of  
21 CO<sub>2</sub>e per mmBTU, which a taxpayer may elect  
22 to use for purposes of this section.

23           “(C) ROUNDING OF SAFE HARBOR EMIS-  
24 SIONS RATE.—The Secretary may round the  
25 safe harbor emissions rates under subparagraph



1 (B) to the nearest multiple of 7.723 kilograms  
2 of CO<sub>2</sub>e per mmBTU, except that, in the case  
3 of an emissions rate that is less than 3.862  
4 kilograms of CO<sub>2</sub>e per mmBTU, the Secretary  
5 may round such rate to zero.

6 “(D) PROVISIONAL SAFE HARBOR EMIS-  
7 SIONS RATE.—

8 “(i) IN GENERAL.—In the case of any  
9 transportation fuel for which a safe harbor  
10 emissions rate has not been established by  
11 the Secretary, a taxpayer producing such  
12 fuel may file a petition with the Secretary  
13 for determination of the safe harbor emis-  
14 sions rate with respect to such fuel.

15 “(ii) ESTABLISHMENT OF PROVI-  
16 SIONAL AND FINAL SAFE HARBOR EMIS-  
17 SIONS RATE.—In the case of a transpor-  
18 tation fuel for which a petition described in  
19 clause (i) has been filed, the Secretary, in  
20 consultation with the Administrator of the  
21 Environmental Protection Agency, shall—

22 “(I) not later than 12 months  
23 after the date on which the petition  
24 was filed, provide a provisional safe  
25 harbor emissions rate for such fuel

1                   which a taxpayer may use for pur-  
2                   poses of this section, and

3                   “(II) not later than 24 months  
4                   after the date on which the petition  
5                   was filed, establish the safe harbor  
6                   emissions rate for such fuel.

7                   “(E) ROUNDING.—If any amount deter-  
8                   mined under subparagraph (A) is not a multiple  
9                   of 0.1, such amount shall be rounded to the  
10                  nearest multiple of 0.1.

11                  “(2) PUBLISHING SAFE HARBOR EMISSIONS  
12                  RATE.—The Secretary, in consultation with the Ad-  
13                  ministrators of the Environmental Protection Agency,  
14                  shall publish a table that sets forth the safe harbor  
15                  emissions rate (as established pursuant to paragraph  
16                  (1)) for similar types and categories of transpor-  
17                  tation fuels.

18                  “(c) INFLATION ADJUSTMENT.—

19                  “(1) IN GENERAL.—In the case of calendar  
20                  years beginning after 2018, the \$1.00 amount in  
21                  subsection (a)(1)(A) shall be adjusted by multiplying  
22                  such amount by the inflation adjustment factor for  
23                  the calendar year in which the sale or use of the  
24                  transportation fuel occurs. If any amount as in-  
25                  creased under the preceding sentence is not a mul-

1        tiple of 1 cent, such amount shall be rounded to the  
2        nearest multiple of 1 cent.

3            “(2) INFLATION ADJUSTMENT FACTOR.—For  
4        purposes of paragraph (1), the inflation adjustment  
5        factor shall be the inflation adjustment factor deter-  
6        mined and published by the Secretary pursuant to  
7        section 45S(c), determined by substituting ‘calendar  
8        year 2017’ for ‘calendar year 1992’ in paragraph (3)  
9        thereof.

10        “(d) CREDIT PHASE-OUT.—

11            “(1) IN GENERAL.—Subject to paragraph (3),  
12        if the Secretary, in consultation with the Secretary  
13        of Energy and the Administrator of the Environ-  
14        mental Protection Agency, determines that the  
15        greenhouse gas emissions from transportation fuel  
16        produced and sold at retail annually in the United  
17        States are equal to or less than 72 percent of the  
18        greenhouse gas emissions from transportation fuel  
19        produced and sold at retail in the United States dur-  
20        ing calendar year 2005, the amount of the clean fuel  
21        production credit under this section for any qualified  
22        facility placed in service during a calendar year de-  
23        scribed in paragraph (2) shall be equal to the prod-  
24        uct of—

1           “(A) the amount of the credit determined  
2           under subsection (a) without regard to this sub-  
3           section, multiplied by

4           “(B) the phase-out percentage under para-  
5           graph (2).

6           “(2) PHASE-OUT PERCENTAGE.—The phase-out  
7           percentage under this paragraph is equal to—

8           “(A) for a facility placed in service during  
9           the first calendar year following the calendar  
10          year in which the determination described in  
11          paragraph (1) is made, 75 percent,

12          “(B) for a facility placed in service during  
13          the second calendar year following such deter-  
14          mination year, 50 percent,

15          “(C) for a facility placed in service during  
16          the third calendar year following such deter-  
17          mination year, 25 percent, and

18          “(D) for a facility placed in service during  
19          any calendar year subsequent to the year de-  
20          scribed in subparagraph (C), 0 percent.

21          “(3) DEADLINE TO BEGIN PHASE-OUT.—If the  
22          Secretary, in consultation with the Secretary of En-  
23          ergy and the Administrator of the Environmental  
24          Protection Agency, determines that the greenhouse  
25          gas emissions from transportation fuel produced and

1 sold at retail annually in the United States are, for  
2 each year before calendar year 2026, greater than  
3 the percentage specified in paragraph (1), then the  
4 determination described in such paragraph shall be  
5 deemed to have been made for calendar year 2025.

6 “(e) DEFINITIONS.—In this section:

7 “(1) mmBTU.—The term ‘mmBTU’ means  
8 1,000,000 British thermal units.

9 “(2) CO<sub>2</sub>e.—The term ‘CO<sub>2</sub>e’ means, with re-  
10 spect to any greenhouse gas, the equivalent carbon  
11 dioxide.

12 “(3) GREENHOUSE GAS.—The term ‘greenhouse  
13 gas’ has the same meaning given that term under  
14 section 211(o)(1)(G) of the Clean Air Act (42  
15 U.S.C. 7545(o)(1)(G)), as in effect on the date of  
16 the enactment of this section.

17 “(4) QUALIFIED FACILITY.—

18 “(A) IN GENERAL.—Subject to subpara-  
19 graphs (B) and (C), the term ‘qualified facility’  
20 means a facility used for the production of  
21 transportation fuels.

22 “(B) 10-YEAR PRODUCTION CREDIT.—For  
23 purposes of this section, a facility shall only  
24 qualify as a qualified facility—

1                   “(i) in the case of a facility that is  
2                   originally placed in service after December  
3                   31, 2017, for the 10-year period beginning  
4                   on the date such facility is placed in serv-  
5                   ice, or

6                   “(ii) in the case of a facility that is  
7                   originally placed in service before January  
8                   1, 2018, for the 10-year period beginning  
9                   on January 1, 2018.

10                  “(5) TRANSPORTATION FUEL.—The term  
11                  ‘transportation fuel’ means a fuel which is suitable  
12                  for use as a fuel in a highway vehicle or aircraft.

13                  “(f) FINAL GUIDANCE.—Not later than January 1,  
14 2017, the Secretary, in consultation with the Adminis-  
15 trator of the Environmental Protection Agency, shall issue  
16 final guidance regarding implementation of this section,  
17 including calculation of emissions factors for transpor-  
18 tation fuel, the table described in subsection (b)(2), and  
19 the determination of clean fuel production credits under  
20 this section.

21                  “(g) SPECIAL RULES.—

22                         “(1) ONLY REGISTERED PRODUCTION IN THE  
23 UNITED STATES TAKEN INTO ACCOUNT.—

24                                 “(A) IN GENERAL.—No clean fuel produc-  
25 tion credit shall be determined under subsection

1 (a) with respect to any transportation fuel un-  
2 less—

3 “(i) the taxpayer is registered as a  
4 producer of clean fuel under section 4101  
5 at the time of production, and

6 “(ii) such fuel is produced in the  
7 United States.

8 “(B) UNITED STATES.—For purposes of  
9 this paragraph, the term ‘United States’ in-  
10 cludes any possession of the United States.

11 “(2) PRODUCTION ATTRIBUTABLE TO THE TAX-  
12 PAYER.—In the case of a facility in which more than  
13 1 person has an ownership interest, except to the ex-  
14 tent provided in regulations prescribed by the Sec-  
15 retary, production from the facility shall be allocated  
16 among such persons in proportion to their respective  
17 ownership interests in the gross sales from such fa-  
18 cility.

19 “(3) RELATED PERSONS.—Persons shall be  
20 treated as related to each other if such persons  
21 would be treated as a single employer under the reg-  
22 ulations prescribed under section 52(b). In the case  
23 of a corporation which is a member of an affiliated  
24 group of corporations filing a consolidated return,  
25 such corporation shall be treated as selling fuel to

1 an unrelated person if such fuel is sold to such a  
2 person by another member of such group.

3 “(4) PASS-THRU IN THE CASE OF ESTATES AND  
4 TRUSTS.—Under regulations prescribed by the Sec-  
5 retary, rules similar to the rules of subsection (d) of  
6 section 52 shall apply.

7 “(5) ALLOCATION OF CREDIT TO PATRONS OF  
8 AGRICULTURAL COOPERATIVE.—

9 “(A) ELECTION TO ALLOCATE.—

10 “(i) IN GENERAL.—In the case of an  
11 eligible cooperative organization, any por-  
12 tion of the credit determined under sub-  
13 section (a) for the taxable year may, at the  
14 election of the organization, be apportioned  
15 among patrons of the organization on the  
16 basis of the amount of business done by  
17 the patrons during the taxable year.

18 “(ii) FORM AND EFFECT OF ELEC-  
19 TION.—An election under clause (i) for any  
20 taxable year shall be made on a timely  
21 filed return for such year. Such election,  
22 once made, shall be irrevocable for such  
23 taxable year. Such election shall not take  
24 effect unless the organization designates  
25 the apportionment as such in a written no-



1                   tice mailed to its patrons during the pay-  
2                   ment period described in section 1382(d).

3                   “(B) TREATMENT OF ORGANIZATIONS AND  
4 PATRONS.—The amount of the credit appor-  
5 tioned to any patrons under subparagraph  
6 (A)—

7                   “(i) shall not be included in the  
8 amount determined under subsection (a)  
9 with respect to the organization for the  
10 taxable year, and

11                   “(ii) shall be included in the amount  
12 determined under subsection (a) for the  
13 first taxable year of each patron ending on  
14 or after the last day of the payment period  
15 (as defined in section 1382(d)) for the tax-  
16 able year of the organization or, if earlier,  
17 for the taxable year of each patron ending  
18 on or after the date on which the patron  
19 receives notice from the cooperative of the  
20 apportionment.

21                   “(C) SPECIAL RULES FOR DECREASE IN  
22 CREDITS FOR TAXABLE YEAR.—If the amount  
23 of the credit of a cooperative organization de-  
24 termined under subsection (a) for a taxable  
25 year is less than the amount of such credit

1 shown on the return of the cooperative organi-  
2 zation for such year, an amount equal to the  
3 excess of—

4 “(i) such reduction, over

5 “(ii) the amount not apportioned to  
6 such patrons under subparagraph (A) for  
7 the taxable year,

8 shall be treated as an increase in tax imposed  
9 by this chapter on the organization. Such in-  
10 crease shall not be treated as tax imposed by  
11 this chapter for purposes of determining the  
12 amount of any credit under this chapter.

13 “(D) ELIGIBLE COOPERATIVE DEFINED.—  
14 For purposes of this section the term ‘eligible  
15 cooperative’ means a cooperative organization  
16 described in section 1381(a) which is owned  
17 more than 50 percent by agricultural producers  
18 or by entities owned by agricultural producers.  
19 For this purpose an entity owned by an agricul-  
20 tural producer is one that is more than 50 per-  
21 cent owned by agricultural producers.”.

22 (b) CONFORMING AMENDMENTS.—

23 (1) Section 38(b), as amended by section \_\_01,  
24 is amended—

1 (A) in paragraph (36), by striking “plus”  
2 at the end,

3 (B) in paragraph (37), by striking the pe-  
4 riod at the end and inserting “, plus”, and

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

7 “(38) the clean fuel production credit deter-  
8 mined under section 45T(a).”.

9 (2) The table of sections for subpart D of part  
10 IV of subchapter A of chapter 1, as amended by sec-  
11 tion \_\_01, is amended by adding at the end the fol-  
12 lowing new item:

“Sec. 45T. Clean fuel production credit.”.

13 (3) Section 4101(a)(1) is amended by inserting  
14 “every person producing a fuel eligible for the clean  
15 fuel production credit (pursuant to section 45T),”  
16 after “section 6426(b)(4)(A)),”.

17 (c) EFFECTIVE DATE.—The amendments made by  
18 this section shall apply to transportation fuel produced  
19 after December 31, 2017.

20 **SEC. 5022. TEMPORARY EXTENSION OF EXISTING FUEL IN-**  
21 **CENTIVES.**

22 (a) SECOND GENERATION BIOFUEL PRODUCER  
23 CREDIT.—

24 (1) IN GENERAL.—Section 40(b)(6) is amend-  
25 ed—

- 1 (A) in subparagraph (E)(i)—  
2 (i) in subclause (I), by striking “and”  
3 at the end,  
4 (ii) in subclause (II), by striking the  
5 period at the end and inserting “, and”,  
6 and  
7 (iii) by inserting at the end the fol-  
8 lowing new subclause:  
9 “(III) qualifies as a transpor-  
10 tation fuel (as defined in section  
11 45T(e)(5)).”, and  
12 (B) in subparagraph (J)(i), by striking  
13 “2015” and inserting “2018”.

14 (2) EFFECTIVE DATE.—The amendments made  
15 by this subsection shall apply to qualified second  
16 generation biofuel production after December 31,  
17 2014.

18 (b) BIODIESEL AND RENEWABLE DIESEL USED AS  
19 FUEL.—

- 20 (1) IN GENERAL.—Section 40A is amended—  
21 (A) in subsection (f)(3)(B), by striking “or  
22 D396”, and  
23 (B) in subsection (g), by striking “2014”  
24 and inserting “2017”.

1           (2) EFFECTIVE DATE.—The amendments made  
2           by this subsection shall apply to fuel sold or used  
3           after December 31, 2014.

4           (c) CREDIT FOR BIODIESEL AND ALTERNATIVE  
5 FUEL MIXTURES.—

6           (1) IN GENERAL.—Section 6426 is amended—

7                   (A) in subsection (c)(6), by striking  
8                   “2014” and inserting “2017”,

9                   (B) in subsection (d)—

10                         (i) in paragraph (1), by striking  
11                         “motor vehicle” and inserting “highway ve-  
12                         hicle”,

13                         (ii) in paragraph (2)(D), by striking  
14                         “liquefied”, and

15                         (iii) in paragraph (5), by striking  
16                         “2014” and inserting “2017”, and

17                   (C) in subsection (e), by amending para-  
18                   graph (3) to read as follows:

19                   “(3) TERMINATION.—This subsection shall not  
20                   apply to any sale or use for any period after—

21                                 “(A) in the case of any alternative fuel  
22                                 mixture sold or used by the taxpayer for the  
23                                 purposes described in subsection (d)(1), Decem-  
24                                 ber 31, 2017,

1           “(B) in the case of any sale or use involv-  
2           ing hydrogen that is not for the purposes de-  
3           scribed in subsection (d)(1), December 31,  
4           2017, and

5           “(C) in the case of any sale or use not de-  
6           scribed in subparagraph (A) or (B), December  
7           31, 2014.”.

8           (2) EFFECTIVE DATE.—The amendments made  
9           by this subsection shall apply to fuel sold or used  
10          after December 31, 2014.

11          (d) BIODIESEL, BIODIESEL MIXTURES, AND ALTER-  
12          NATIVE FUELS.—

13           (1) IN GENERAL.—Section 6427(e)(6) is  
14          amended—

15           (A) in subparagraph (B), by striking  
16           “2014” and inserting “2017”, and

17           (B) in subparagraph (C), by striking  
18           “2014” and inserting “2017”.

19           (2) EFFECTIVE DATE.—The amendments made  
20          by this subsection shall apply to fuel sold or used  
21          after December 31, 2014.

22          (e) SPECIAL RULE FOR CERTAIN PERIODS DURING  
23          2015.—Notwithstanding any other provision of law, in the  
24          case of—

1           (1) any biodiesel mixture credit properly deter-  
2           mined under section 6426(c) of the Internal Revenue  
3           Code of 1986 for periods after December 31, 2014,  
4           and on or before the last day of the first calendar  
5           quarter ending after the date of the enactment of  
6           this Act, and

7           (2) any alternative fuel credit properly deter-  
8           mined under section 6426(d) of such Code for such  
9           periods,

10 such credit shall be allowed, and any refund or payment  
11 attributable to such credit (including any payment under  
12 section 6427(e) of such Code) shall be made, only in such  
13 manner as the Secretary of the Treasury (or the Sec-  
14 retary's delegate) shall provide. Such Secretary shall issue  
15 guidance within 30 days after the date of the enactment  
16 of this Act providing for a one-time submission of claims  
17 covering periods described in the preceding sentence. Such  
18 guidance shall provide for a 180-day period for the sub-  
19 mission of such claims (in such manner as prescribed by  
20 such Secretary) to begin not later than 30 days after such  
21 guidance is issued. Such claims shall be paid by such Sec-  
22 retary not later than 60 days after receipt. If such Sec-  
23 retary has not paid pursuant to a claim filed under this  
24 subsection within 60 days after the date of the filing of  
25 such claim, the claim shall be paid with interest from such

1 date determined by using the overpayment rate and meth-  
2 od under section 6621 of such Code.

3 **Subtitle C—Energy Efficiency**  
4 **Incentives**

5 **SEC. 5031. CREDIT FOR NEW ENERGY EFFICIENT RESIDEN-**  
6 **TIAL BUILDINGS.**

7 (a) IN GENERAL.—Section 45L is amended to read  
8 as follows:

9 **“SEC. 45L. NEW ENERGY EFFICIENT HOME CREDIT.**

10 “(a) ALLOWANCE OF CREDIT.—For purposes of sec-  
11 tion 38, in the case of an eligible contractor, the new en-  
12 ergy efficient home credit for the taxable year is the appli-  
13 cable amount for each qualified residence which is—

14 “(1) constructed by the eligible contractor, and

15 “(2) acquired by a person from such eligible  
16 contractor for use as a residence during the taxable  
17 year.

18 “(b) APPLICABLE AMOUNT.—

19 “(1) IN GENERAL.—For purposes of subsection  
20 (a), the applicable amount shall be an amount equal  
21 to \$1,500 increased (but not above \$3,000) by \$100  
22 for every 5 percentage points by which the efficiency  
23 ratio for the qualified residence is certified to be  
24 greater than 25 percent.



1           “(2) EFFICIENCY RATIO.—For purposes of this  
2 section, the efficiency ratio of a qualified residence  
3 shall be equal to the quotient, expressed as a per-  
4 centage, obtained by dividing—

5                   “(A) an amount equal to the difference be-  
6 tween—

7                           “(i) the annual level of energy con-  
8 sumption of the qualified residence, and

9                           “(ii) the annual level of energy con-  
10 sumption of the baseline residence, by

11                   “(B) the annual level of energy consump-  
12 tion of the baseline residence.

13           “(3) BASELINE RESIDENCE.—For purposes of  
14 this section, the baseline residence shall be a resi-  
15 dence which is—

16                   “(A) comparable to the qualified residence,  
17 and

18                   “(B) constructed in accordance with the  
19 standards of the 2015 International Energy  
20 Conservation Code, as such Code (including  
21 supplements) is in effect on the date of the en-  
22 actment of the American Energy Innovation  
23 Act.

24           “(c) DEFINITIONS.—For purposes of this section:

1           “(1) ELIGIBLE CONTRACTOR.—The term ‘eligi-  
2           ble contractor’ means—

3                   “(A) the person who constructed the quali-  
4                   fied residence, or

5                   “(B) in the case of a qualified residence  
6                   which is a manufactured home, the manufac-  
7                   tured home producer of such residence.

8           “(2) QUALIFIED RESIDENCE.—The term ‘quali-  
9           fied residence’ means a dwelling unit—

10                   “(A) located in the United States,

11                   “(B) the construction of which is substan-  
12                   tially completed after the date of the enactment  
13                   of this section, and

14                   “(C) which is certified to have an annual  
15                   level of energy consumption that is less than  
16                   the baseline residence and an efficiency ratio of  
17                   not less than 25 percent.

18           “(3) CONSTRUCTION.—The term ‘construction’  
19           does not include substantial reconstruction or reha-  
20           bilitation.

21           “(d) CERTIFICATION.—

22                   “(1) IN GENERAL.—A certification described in  
23                   this section shall be made—

24                   “(A) in accordance with guidance pre-  
25                   scribed by, and

1                   “(B) by a third-party that is accredited by  
2                   a certification program approved by,  
3                   the Secretary, in consultation with the Secretary of  
4                   Energy. Such guidance shall specify procedures and  
5                   methods for calculating annual energy consumption  
6                   levels, and shall include requirements to ensure the  
7                   safe operation of energy efficiency improvements and  
8                   that all improvements are installed according to the  
9                   applicable standards of such certification program.

10                   “(2) COMPUTER SOFTWARE.—

11                   “(A) IN GENERAL.—Any calculation under  
12                   paragraph (1) shall be prepared by qualified  
13                   computer software.

14                   “(B) QUALIFIED COMPUTER SOFTWARE.—  
15                   For purposes of this paragraph, the term  
16                   ‘qualified computer software’ means software—

17                   “(i) for which the software designer  
18                   has certified that the software meets all  
19                   procedures and detailed methods for calcu-  
20                   lating energy consumption levels as re-  
21                   quired by the Secretary, and

22                   “(ii) which provides such forms as re-  
23                   quired to be filed by the Secretary in con-  
24                   nection with energy consumption levels and  
25                   the credit allowed under this section.

1           “(e) BASIS ADJUSTMENT.—For purposes of this sub-  
2 title, if a credit is allowed under this section in connection  
3 with any expenditure for any property (other than a quali-  
4 fied low-income building, as described in section 42(c)(2)),  
5 the increase in the basis of such property which would (but  
6 for this subsection) result from such expenditure shall be  
7 reduced by the amount of the credit so determined.

8           “(f) COORDINATION WITH INVESTMENT CREDITS.—  
9 For purposes of this section, expenditures taken into ac-  
10 count under section 25D or 47 shall not be taken into  
11 account under this section.”.

12           (b) EFFECTIVE DATE.—The amendment made by  
13 this section shall apply to any qualified residence acquired  
14 after December 31, 2017.

15 **SEC. 5032. ENERGY EFFICIENCY CREDIT FOR EXISTING**  
16 **RESIDENTIAL BUILDINGS.**

17           (a) IN GENERAL.—Section 25C is amended to read  
18 as follows:

19 **“SEC. 25C. CREDIT FOR ENERGY EFFICIENCY IMPROVE-**  
20 **MENTS TO RESIDENTIAL BUILDINGS.**

21           “(a) ALLOWANCE OF CREDIT.—In the case of an in-  
22 dividual, there shall be allowed as a credit against the tax  
23 imposed by this chapter for the taxable year an amount  
24 equal to the lesser of—

1           “(1) the applicable amount for the qualified res-  
2           idence based on energy efficiency improvements  
3           made by the taxpayer and placed in service during  
4           such taxable year, or

5           “(2) 30 percent of the amount paid or incurred  
6           by the taxpayer for energy efficiency improvements  
7           made to the qualified residence that were placed in  
8           service during such taxable year.

9           “(b) APPLICABLE AMOUNT.—

10           “(1) IN GENERAL.—For purposes of subsection  
11           (a)(1), the applicable amount shall be an amount  
12           equal to \$1,750 increased (but not above \$6,500) by  
13           \$300 for every 5 percentage points by which the effi-  
14           ciency ratio for the qualified residence is certified to  
15           be greater than 20 percent.

16           “(2) EFFICIENCY RATIO.—For purposes of this  
17           section, the efficiency ratio of a qualified residence  
18           shall be equal to the quotient, expressed as a per-  
19           centage, obtained by dividing—

20           “(A) an amount equal to the difference be-  
21           tween—

22           “(i) the projected annual level of en-  
23           ergy consumption of the qualified residence  
24           after the energy efficiency improvements  
25           have been placed in service, and



1           that is less than the annual level of energy  
2           consumption prior to the energy efficiency  
3           improvements being placed in service, and

4           “(ii) an efficiency ratio of not less  
5           than 20 percent.

6           “(2) ENERGY EFFICIENCY IMPROVEMENTS.—

7           “(A) IN GENERAL.—The term ‘energy effi-  
8           ciency improvements’ means any property in-  
9           stalled on or in a dwelling unit which has been  
10          certified to reduce the level of energy consump-  
11          tion for such unit or to provide for onsite gen-  
12          eration of electricity or useful thermal energy,  
13          provided that—

14                 “(i) the original use of such property  
15                 commences with the taxpayer, and

16                 “(ii) such property reasonably can be  
17                 expected to remain in use for at least 5  
18                 years.

19           “(B) AMOUNTS PAID OR INCURRED FOR  
20          ENERGY EFFICIENCY IMPROVEMENTS.—For  
21          purposes of subsection (a)(2), the amount paid  
22          or incurred by the taxpayer—

23                 “(i) shall include expenditures for de-  
24                 sign and for labor costs properly allocable

1 to the onsite preparation, assembly, or  
2 original installation of the property, and

3 “(ii) shall not include any expendi-  
4 tures related to expansion of the building  
5 envelope.

6 “(d) SPECIAL RULES.—For purposes of this section:

7 “(1) TENANT-STOCKHOLDER IN COOPERATIVE  
8 HOUSING CORPORATION.—In the case of an indi-  
9 vidual who is a tenant-stockholder (as defined in sec-  
10 tion 216) in a cooperative housing corporation (as  
11 defined in such section), such individual shall be  
12 treated as having made his tenant-stockholder’s pro-  
13 portionate share (as defined in section 216(b)(3)) of  
14 any expenditures for energy efficiency improvements  
15 of such corporation.

16 “(2) CONDOMINIUMS.—

17 “(A) IN GENERAL.—In the case of an indi-  
18 vidual who is a member of a condominium man-  
19 agement association with respect to a condo-  
20 minium which the individual owns, such indi-  
21 vidual shall be treated as having made the indi-  
22 vidual’s proportionate share of any expenditures  
23 for energy efficiency improvements of such as-  
24 sociation.



1           “(B) CONDOMINIUM MANAGEMENT ASSO-  
2           CIATION.—For purposes of this paragraph, the  
3           term ‘condominium management association’  
4           means an organization which meets the require-  
5           ments of paragraph (1) of section 528(c) (other  
6           than subparagraph (E) thereof) with respect to  
7           a condominium project substantially all of the  
8           units of which are used as residences.

9           “(3) ALLOCATION IN CERTAIN CASES.—If less  
10          than 80 percent of the use of a property is for non-  
11          business purposes, only that portion of the expendi-  
12          tures for energy efficiency improvements for such  
13          property which is properly allocable to use for non-  
14          business purposes shall be taken into account.

15          “(e) CERTIFICATION.—

16                 “(1) IN GENERAL.—A certification described in  
17          this section shall be made—

18                         “(A) in accordance with guidance pre-  
19                         scribed by, and

20                         “(B) by a third-party that is accredited by  
21                         a certification program approved by,

22          the Secretary, in consultation with the Secretary of  
23          Energy. Such guidance shall specify procedures and  
24          methods for calculating annual energy consumption  
25          levels, with such calculations to take into account

1 onsite generation of electricity or useful thermal en-  
2 ergy, and shall include requirements to ensure the  
3 safe operation of energy efficiency improvements and  
4 that all improvements are installed according to the  
5 applicable standards of such certification program.

6 “(2) COMPUTER SOFTWARE.—

7 “(A) IN GENERAL.—Any calculation under  
8 paragraph (1) shall be prepared by qualified  
9 computer software.

10 “(B) QUALIFIED COMPUTER SOFTWARE.—

11 For purposes of this paragraph, the term  
12 ‘qualified computer software’ has the same  
13 meaning given such term under section  
14 45L(d)(2).

15 “(f) BASIS ADJUSTMENT.—For purposes of this sub-  
16 title, if a credit is allowed under this section for any ex-  
17 penditures with respect to any energy efficiency improve-  
18 ments, the increase in the basis of such property which  
19 would (but for this subsection) result from such expendi-  
20 tures shall be reduced by the amount of the credit so al-  
21 lowed.

22 “(g) COORDINATION WITH INVESTMENT CREDITS.—

23 For purposes of this section, expenditures taken into ac-  
24 count under section 25D or 47 shall not be taken into  
25 account under this section.”.

1 (b) CONFORMING AMENDMENT.—The table of sec-  
2 tions for subpart A of part IV of subchapter A of chapter  
3 1 is amended by striking the item relating to section 25C  
4 and inserting after the item relating to section 25B the  
5 following item:

“Sec. 25C. Credit for energy efficiency improvements to residential buildings.”.

6 (c) EFFECTIVE DATE.—The amendments made by  
7 this section shall apply to any energy efficiency improve-  
8 ments placed in service after December 31, 2017.

9 **SEC. 5033. DEDUCTION FOR NEW ENERGY EFFICIENT COM-**  
10 **MERCIAL BUILDINGS.**

11 (a) IN GENERAL.—Section 179D is amended to read  
12 as follows:

13 **“SEC. 179D. ENERGY EFFICIENT COMMERCIAL BUILDING**  
14 **DEDUCTION.**

15 “(a) IN GENERAL.—There shall be allowed as a de-  
16 duction an amount equal to the applicable amount for each  
17 qualified building placed in service by the taxpayer during  
18 the taxable year.

19 “(b) APPLICABLE AMOUNT.—

20 “(1) IN GENERAL.—For purposes of subsection  
21 (a), the applicable amount shall be an amount equal  
22 to the product of—

23 “(A) the applicable dollar value, and

24 “(B) the square footage of the qualified  
25 building.

1           “(2) APPLICABLE DOLLAR VALUE.—For pur-  
2           poses of paragraph (1)(A), the applicable dollar  
3           value shall be an amount equal to \$1.00 increased  
4           (but not above \$4.75) by \$0.25 for every 5 percent-  
5           age points by which the efficiency ratio for the quali-  
6           fied building is certified to be greater than 25 per-  
7           cent.

8           “(3) EFFICIENCY RATIO.—For purposes of this  
9           section, the efficiency ratio of a qualified building  
10          shall be equal to the quotient, expressed as a per-  
11          centage, obtained by dividing—

12                   “(A) an amount equal to the difference be-  
13                   tween—

14                           “(i) the annual level of energy con-  
15                           sumption of the qualified building, and

16                           “(ii) the annual level of energy con-  
17                           sumption of the baseline building, by

18                   “(B) the annual level of energy consump-  
19                   tion of the baseline building.

20          “(4) BASELINE BUILDING.—For purposes of  
21          this section, the baseline building shall be a building  
22          which—

23                   “(A) is comparable to the qualified build-  
24                   ing, and

1           “(B) meets the minimum requirements of  
2           Standard 90.1-2013 of the American Society of  
3           Heating, Refrigerating, and Air Conditioning  
4           Engineers and the Illuminating Engineering So-  
5           ciety of North America (as in effect on Decem-  
6           ber 31, 2014).

7           “(c) QUALIFIED BUILDING.—The term ‘qualified  
8 building’ means a building—

9           “(1) located in the United States,

10           “(2) which is owned by the taxpayer, and

11           “(3) which is certified to have an annual level  
12 of energy consumption that is less than the baseline  
13 building and an efficiency ratio of not less than 25  
14 percent.

15           “(d) ALLOCATION OF DEDUCTION.—

16           “(1) IN GENERAL.—In the case of a qualified  
17 building owned by an eligible entity, the Secretary  
18 shall promulgate regulations to allow the allocation  
19 of the deduction to the person primarily responsible  
20 for designing the property in lieu of the owner of  
21 such property, with such person to be treated as the  
22 taxpayer for purposes of this section.

23           “(2) ELIGIBLE ENTITY.—For purposes of this  
24 subsection, the term ‘eligible entity’ means—

1           “(A) a Federal, State, or local government  
2           or a political subdivision thereof,

3           “(B) an Indian tribe (as defined in section  
4           45A(c)(6)), or

5           “(C) an organization described in section  
6           501(c) and exempt from tax under section  
7           501(a).

8           “(e) BASIS ADJUSTMENT.—For purposes of this sub-  
9           title, if a deduction is allowed under this section with re-  
10          spect to any qualified building, the basis of such property  
11          shall be reduced by the amount of the deduction so al-  
12          lowed.

13          “(f) CERTIFICATION.—

14                 “(1) IN GENERAL.—A certification described in  
15                 this section shall be made—

16                         “(A) in accordance with guidance pre-  
17                         scribed by, and

18                         “(B) by a third-party that is accredited by  
19                         a certification program approved by,

20           the Secretary, in consultation with the Secretary of  
21           Energy. Such guidance shall specify procedures and  
22           methods for calculating annual energy consumption  
23           levels, and shall include requirements to ensure the  
24           safe operation of energy efficiency improvements and

1 that all improvements are installed according to the  
2 applicable standards of such certification program.

3 “(2) COMPUTER SOFTWARE.—

4 “(A) IN GENERAL.—Any calculation under  
5 paragraph (1) shall be prepared by qualified  
6 computer software.

7 “(B) QUALIFIED COMPUTER SOFTWARE.—  
8 For purposes of this paragraph, the term  
9 ‘qualified computer software’ means software—

10 “(i) for which the software designer  
11 has certified that the software meets all  
12 procedures and detailed methods for calcu-  
13 lating energy consumption levels as re-  
14 quired by the Secretary, and

15 “(ii) which provides such forms as re-  
16 quired to be filed by the Secretary in con-  
17 nection with energy consumption levels and  
18 the deduction allowed under this section.”.

19 (b) CONFORMING AMENDMENT.—The table of sec-  
20 tions for part VI of subchapter B of chapter 1 is amended  
21 by striking the item relating to section 179D and inserting  
22 after the item relating to section 179C the following item:

“Sec. 179D. Energy efficient commercial building deduction.”.

23 (c) EFFECTIVE DATE.—The amendments made by  
24 this section shall apply to any qualified building placed  
25 in service after December 31, 2017.

1 **SEC. 5034. ENERGY EFFICIENCY DEDUCTION FOR EXISTING**  
2 **COMMERCIAL BUILDINGS.**

3 (a) IN GENERAL.—Part VI of subchapter B of chap-  
4 ter 1 is amended by inserting after section 179E the fol-  
5 lowing new section:

6 **“SEC. 179F. DEDUCTION FOR ENERGY EFFICIENCY IM-**  
7 **PROVEMENTS TO COMMERCIAL BUILDINGS.**

8 “(a) IN GENERAL.—There shall be allowed as a de-  
9 duction an amount equal to the lesser of—

10 “(1) the applicable amount for the qualified  
11 building based on energy efficiency improvements  
12 made by the taxpayer and placed in service during  
13 the taxable year, or

14 “(2) 30 percent of the amount paid or incurred  
15 by the taxpayer for energy efficiency improvements  
16 made to the qualified building which were placed in  
17 service during the taxable year.

18 “(b) APPLICABLE AMOUNT.—

19 “(1) IN GENERAL.—For purposes of subsection  
20 (a), the applicable amount shall be an amount equal  
21 to the product of—

22 “(A) the applicable dollar value, and

23 “(B) the square footage of the qualified  
24 building.

25 “(2) APPLICABLE DOLLAR VALUE.—For pur-  
26 poses of paragraph (1), the applicable dollar value



1 shall be an amount equal to \$1.25 increased (but  
2 not above \$9.25) by \$0.50 for every 5 percentage  
3 points by which the efficiency ratio for the qualified  
4 building is certified to be greater than 20 percent.

5 “(3) EFFICIENCY RATIO.—For purposes of this  
6 section, the efficiency ratio of a qualified building  
7 shall be equal to the quotient, expressed as a per-  
8 centage, obtained by dividing—

9 “(A) an amount equal to the difference be-  
10 tween—

11 “(i) the projected annual level of en-  
12 ergy consumption of the qualified building  
13 after the energy efficiency improvements  
14 have been placed in service, and

15 “(ii) the annual level of energy con-  
16 sumption of such qualified building prior  
17 to the energy efficiency improvements  
18 being placed in service, by

19 “(B) the annual level of energy consump-  
20 tion described in subparagraph (A)(ii).

21 “(4) COORDINATION WITH CLEAN ENERGY IN-  
22 VESTMENT CREDIT.—For purposes of paragraph  
23 (3)(A), the determination of the difference in annual  
24 levels of energy consumption of the qualified build-  
25 ing shall not include any reduction in net energy

1 consumption related to qualified property or energy  
2 storage property for which a credit was allowed  
3 under section 48E.

4 “(c) DEFINITIONS.—

5 “(1) QUALIFIED BUILDING.—The term ‘quali-  
6 fied building’ means a building—

7 “(A) located in the United States,

8 “(B) which is owned by the taxpayer, and

9 “(C) which is certified to have—

10 “(i) a projected annual level of energy  
11 consumption after the energy efficiency im-  
12 provements have been placed in service  
13 that is less than the annual level of energy  
14 consumption prior to the energy efficiency  
15 improvements being placed in service, and

16 “(ii) an efficiency ratio of not less  
17 than 20 percent.

18 “(2) ENERGY EFFICIENCY IMPROVEMENTS.—

19 “(A) IN GENERAL.—The term ‘energy effi-  
20 ciency improvements’ means any property in-  
21 stalled on or in a qualified building which has  
22 been certified to reduce the level of energy con-  
23 sumption for such building or to increase onsite  
24 generation of electricity, provided that deprecia-

1           tion (or amortization in lieu of depreciation) is  
2           allowable with respect to such property.

3           “(B) AMOUNTS PAID OR INCURRED FOR  
4           ENERGY EFFICIENCY IMPROVEMENTS.—For  
5           purposes of subsection (a)(2), the amount paid  
6           or incurred by the taxpayer—

7                   “(i) shall include expenditures for de-  
8                   sign and for labor costs properly allocable  
9                   to the onsite preparation, assembly, or  
10                  original installation of the property, and

11                   “(ii) shall not include any expendi-  
12                  tures related to expansion of the building  
13                  envelope.

14          “(d) CERTIFICATION.—

15           “(1) IN GENERAL.—A certification described in  
16          this section shall be made—

17                   “(A) in accordance with guidance pre-  
18                  scribed by, and

19                   “(B) by a third-party that is accredited by  
20                  a certification program approved by,

21          the Secretary, in consultation with the Secretary of  
22          Energy. Such guidance shall specify procedures and  
23          methods for calculating annual energy consumption  
24          levels, with such calculations to take into account  
25          onsite generation of electricity or useful thermal en-

1       ergy, and shall include requirements to ensure the  
2       safe operation of energy efficiency improvements and  
3       that all improvements are installed according to the  
4       applicable standards of such certification program.

5               “(2) COMPUTER SOFTWARE.—

6                       “(A) IN GENERAL.—Any calculation under  
7                       paragraph (1) shall be prepared by qualified  
8                       computer software.

9                       “(B) QUALIFIED COMPUTER SOFTWARE.—

10                      For purposes of this paragraph, the term  
11                      ‘qualified computer software’ has the same  
12                      meaning given such term under section  
13                      179D(f)(2).

14               “(e) ALLOCATION OF DEDUCTION.—

15                       “(1) IN GENERAL.—In the case of a qualified  
16                       building owned by an eligible entity, the Secretary  
17                       shall promulgate regulations to allow the allocation  
18                       of the deduction to the person primarily responsible  
19                       for designing the energy efficiency improvements in  
20                       lieu of the owner of such property, with such person  
21                       to be treated as the taxpayer for purposes of this  
22                       section.

23                       “(2) ELIGIBLE ENTITY.—For purposes of this  
24                       subsection, the term ‘eligible entity’ has the same  
25                       meaning given such term under section 179D(d)(2).

1           “(f) BASIS REDUCTION.—For purposes of this sub-  
2 title, if a deduction is allowed under this section with re-  
3 spect to any energy efficiency improvements, the basis of  
4 such property shall be reduced by the amount of the de-  
5 duction so allowed.

6           “(g) COORDINATION WITH OTHER CREDITS.—For  
7 purposes of this section, expenditures taken into account  
8 under section 47 or 48E shall not be taken into account  
9 under this section.”.

10          (b) CONFORMING AMENDMENT.—

11           (1) Section 263(a) is amended—

12               (A) in subparagraph (K), by striking “or”  
13 at the end,

14               (B) in subparagraph (L), by striking the  
15 period and inserting “, or”, and

16               (C) by inserting at the end the following  
17 new subparagraph:

18                   “(M) expenditures for which a deduction is  
19 allowed under section 179F.”.

20           (2) Section 312(k)(3)(B) is amended—

21               (A) in the heading, by striking “OR 179E”  
22 and inserting “179E, OR 179F”, and

23               (B) by striking “or 179E” and inserting  
24 “179E, or 179F”.

25           (3) Section 1016(a) is amended—

1 (A) in paragraph (36), by striking “and”  
2 at the end,

3 (B) in paragraph (37), by striking the pe-  
4 riod at the end and inserting “, and”, and

5 (C) by inserting at the end the following  
6 new paragraph:

7 “(38) to the extent provided in section  
8 179D(f).”.

9 (4) Section 1245(a) is amended—

10 (A) in paragraph (2)(C), by inserting  
11 “179F,” after “179E,” and

12 (B) in paragraph (3)(C), by inserting  
13 “179F,” after “179E,”.

14 (5) The table of sections for part VI of sub-  
15 chapter B of chapter 1 is amended by inserting after  
16 the item relating to section 179E the following new  
17 item:

“Sec. 179F. Deduction for energy efficiency improvements to commercial build-  
ings.”.

18 (c) EFFECTIVE DATE.—The amendments made by  
19 this section shall apply to any energy efficiency improve-  
20 ments placed in service after December 31, 2017.

1     **Subtitle D—Clean Electricity and**  
2                                   **Fuel Bonds**

3     **SEC. 5041. CLEAN ENERGY BONDS.**

4           (a) IN GENERAL.—Subpart J of part IV of sub-  
5 chapter A of chapter 1 is amended by adding at the end  
6 the following new section:

7     **“SEC. 54BB. CLEAN ENERGY BONDS.**

8           “(a) IN GENERAL.—If a taxpayer holds a clean en-  
9 ergy bond on one or more interest payment dates of the  
10 bond during any taxable year, there shall be allowed as  
11 a credit against the tax imposed by this chapter for the  
12 taxable year an amount equal to the sum of the credits  
13 determined under subsection (b) with respect to such  
14 dates.

15           “(b) AMOUNT OF CREDIT.—The amount of the credit  
16 determined under this subsection with respect to any in-  
17 terest payment date for a clean energy bond is 28 percent  
18 of the amount of interest payable by the issuer with re-  
19 spect to such date.

20           “(c) LIMITATION BASED ON AMOUNT OF TAX.—

21                   “(1) IN GENERAL.—The credit allowed under  
22 subsection (a) for any taxable year shall not exceed  
23 the excess of—

1           “(A) the sum of the regular tax liability  
2           (as defined in section 26(b)) plus the tax im-  
3           posed by section 55, over

4           “(B) the sum of the credits allowable  
5           under this part (other than subpart C and this  
6           subpart).

7           “(2) CARRYOVER OF UNUSED CREDIT.—If the  
8           credit allowable under subsection (a) exceeds the  
9           limitation imposed by paragraph (1) for such taxable  
10          year, such excess shall be carried to the succeeding  
11          taxable year and added to the credit allowable under  
12          subsection (a) for such taxable year (determined be-  
13          fore the application of paragraph (1) for such suc-  
14          ceeding taxable year).

15          “(d) CLEAN ENERGY BOND.—

16                 “(1) IN GENERAL.—For purposes of this sec-  
17                 tion, the term ‘clean energy bond’ means any bond  
18                 issued as part of an issue if—

19                         “(A) 100 percent of the excess of the avail-  
20                         able project proceeds (as defined in section  
21                         54A(e)(4)) of such issue over the amounts in a  
22                         reasonably required reserve (within the meaning  
23                         of section 150(a)(3)) with respect to such issue  
24                         are to be used for capital expenditures incurred



1 by an entity described in subparagraph (B) for  
2 1 or more qualified facilities,

3 “(B) the bond is issued by—

4 “(i) a governmental body (as defined  
5 in paragraph (3) of section 54C(d)),

6 “(ii) a public power provider (as de-  
7 fined in paragraph (2) of such section), or

8 “(iii) a cooperative electric company  
9 (as defined in paragraph (4) of such sec-  
10 tion), and

11 “(C) the issuer makes an irrevocable elec-  
12 tion to have this section apply.

13 “(2) APPLICABLE RULES.—For purposes of ap-  
14 plying paragraph (1)—

15 “(A) for purposes of section 149(b), a  
16 clean energy bond shall not be treated as feder-  
17 ally guaranteed by reason of the credit allowed  
18 under subsection (a) or section 6433,

19 “(B) for purposes of section 148, the yield  
20 on a clean energy bond shall be determined  
21 without regard to the credit allowed under sub-  
22 section (a), and

23 “(C) a bond shall not be treated as a clean  
24 energy bond if the issue price has more than a  
25 de minimis amount (determined under rules

1 similar to the rules of section 1273(a)(3)) of  
2 premium over the stated principal amount of  
3 the bond.

4 “(3) QUALIFIED FACILITY.—The term ‘quali-  
5 fied facility’ means a facility—

6 “(A) which is described in subsection  
7 (e)(3) of section 45S and has a greenhouse gas  
8 emissions rate of less than 186 grams of CO<sub>2</sub>e  
9 per KWh (as such terms are defined in sub-  
10 sections (b)(1) and (e)(1) of such section), or

11 “(B) which is described in subsection  
12 (e)(4) of section 45T and only produces trans-  
13 portation fuel which has an emissions rate of  
14 less than 38.62 kilograms of CO<sub>2</sub>e per mmBTU  
15 (as such terms are defined in subsections (b)  
16 and (e) of such section).

17 “(e) INTEREST PAYMENT DATE.—For purposes of  
18 this section, the term ‘interest payment date’ means any  
19 date on which the holder of record of the clean energy  
20 bond is entitled to a payment of interest under such bond.

21 “(f) CREDIT PHASE OUT.—

22 “(1) ELECTRICAL PRODUCTION.—

23 “(A) IN GENERAL.—Subject to subpara-  
24 graph (B), in the case of a clean energy bond  
25 for which the proceeds are used for capital ex-

1           penditures incurred by an entity for a qualified  
2           facility described in subsection (d)(3)(A), if the  
3           Secretary, in consultation with the Secretary of  
4           Energy and the Administrator of the Environ-  
5           mental Protection Agency, determines that the  
6           annual greenhouse gas emissions from electrical  
7           production in the United States are equal to or  
8           less than the percentage specified in section  
9           45S(d)(1), the amount of the credit determined  
10          under subsection (b) with respect to any clean  
11          energy bond issued during a calendar year de-  
12          scribed in paragraph (3) shall be equal to the  
13          product of—

14                   “(i) the amount determined under  
15                   subsection (b) without regard to this sub-  
16                   section, multiplied by

17                   “(ii) the phase-out percentage under  
18                   paragraph (3).

19                   “(B) DEADLINE TO BEGIN PHASE-OUT.—  
20           If the Secretary, in consultation with the Sec-  
21           retary of Energy and the Administrator of the  
22           Environmental Protection Agency, determines  
23           that the annual greenhouse gas emissions from  
24           electrical production in the United States for  
25           each year before calendar year 2026 are greater

1 than the percentage specified in section  
2 45S(d)(1), then the determination described in  
3 subparagraph (A) shall be deemed to have been  
4 made for calendar year 2025.

5 “(2) FUEL PRODUCTION.—

6 “(A) IN GENERAL.—Subject to subpara-  
7 graph (B), in the case of a clean energy bond  
8 for which the proceeds are used for capital ex-  
9 penditures incurred by an entity for a qualified  
10 facility described in subsection (d)(3)(B), if the  
11 Secretary, in consultation with the Secretary of  
12 Energy and the Administrator of the Environ-  
13 mental Protection Agency, determines that the  
14 annual greenhouse gas emissions from transpor-  
15 tation fuel produced and sold at retail annually  
16 in the United States are equal to or less than  
17 the percentage specified in section 45T(d)(1),  
18 the amount of the credit determined under sub-  
19 section (b) with respect to any clean energy  
20 bond issued during a calendar year described in  
21 paragraph (3) shall be equal to the product  
22 of—

23 “(i) the amount determined under  
24 subsection (b) without regard to this sub-  
25 section, multiplied by

1                   “(ii) the phase-out percentage under  
2                   paragraph (3).

3                   “(B) DEADLINE TO BEGIN PHASE-OUT.—  
4                   If the Secretary, in consultation with the Sec-  
5                   retary of Energy and the Administrator of the  
6                   Environmental Protection Agency, determines  
7                   that the annual greenhouse gas emissions from  
8                   transportation fuel produced and sold at retail  
9                   annually in the United States for each year be-  
10                  fore calendar year 2026 are greater than the  
11                  percentage specified in section 45T(d)(1), then  
12                  the determination described in subparagraph  
13                  (A) shall be deemed to have been made for cal-  
14                  endar year 2025.

15                  “(3) PHASE-OUT PERCENTAGE.—The phase-out  
16                  percentage under this paragraph is equal to—

17                         “(A) for any bond issued during the first  
18                         calendar year following the calendar year in  
19                         which the determination described in paragraph  
20                         (1)(A) or (2)(A) is made, 75 percent,

21                         “(B) for any bond issued during the sec-  
22                         ond calendar year following such determination  
23                         year, 50 percent,

1           “(C) for any bond issued during the third  
2           calendar year following such determination  
3           year, 25 percent, and

4           “(D) for any bond issued during any cal-  
5           endar year subsequent to the year described in  
6           subparagraph (C), 0 percent.

7           “(g) SPECIAL RULES.—

8           “(1) INTEREST ON CLEAN ENERGY BONDS IN-  
9           CLUDIBLE IN GROSS INCOME FOR FEDERAL INCOME  
10          TAX PURPOSES.—For purposes of this title, interest  
11          on any clean energy bond shall be includible in gross  
12          income.

13          “(2) APPLICATION OF CERTAIN RULES.—Rules  
14          similar to the rules of subsections (f), (g), (h), and  
15          (i) of section 54A shall apply for purposes of the  
16          credit allowed under subsection (a).

17          “(h) REGULATIONS.—The Secretary may prescribe  
18          such regulations and other guidance as may be necessary  
19          or appropriate to carry out this section and section  
20          6433.”.

21          (b) CREDIT FOR QUALIFIED CLEAN ENERGY BONDS  
22          ALLOWED TO ISSUER.—Subchapter B of chapter 65 of  
23          subtitle F is amended by adding at the end the following  
24          new section:

1 **“SEC. 6433. CREDIT FOR QUALIFIED CLEAN ENERGY BONDS**  
2 **ALLOWED TO ISSUER.**

3 “(a) IN GENERAL.—The issuer of a qualified clean  
4 energy bond shall be allowed a credit with respect to each  
5 interest payment under such bond which shall be payable  
6 by the Secretary as provided in subsection (b).

7 “(b) PAYMENT OF CREDIT.—

8 “(1) IN GENERAL.—The Secretary shall pay  
9 (contemporaneously with each interest payment date  
10 under such bond) to the issuer of such bond (or to  
11 any person who makes such interest payments on  
12 behalf of the issuer) 28 percent of the interest pay-  
13 able under such bond on such date.

14 “(2) INTEREST PAYMENT DATE.—For purposes  
15 of this subsection, the term ‘interest payment date’  
16 means each date on which interest is payable by the  
17 issuer under the terms of the bond.

18 “(c) APPLICATION OF ARBITRAGE RULES.—For pur-  
19 poses of section 148, the yield on a qualified clean energy  
20 bond shall be reduced by the credit allowed under this sec-  
21 tion.

22 “(d) QUALIFIED CLEAN ENERGY BOND.—For pur-  
23 poses of this section, the term ‘qualified clean energy  
24 bond’ means a clean energy bond (as defined in section  
25 54BB(d)) issued as part of an issue if the issuer, in lieu  
26 of any credit allowed under section 54BB(a) with respect

1 to such bond, makes an irrevocable election to have this  
2 section apply.”.

3 (c) CONFORMING AMENDMENTS.—

4 (1) The table of sections for subpart J of part  
5 IV of subchapter A of chapter 1 is amended by add-  
6 ing at the end the following new item:

“Sec. 54BB. Clean energy bonds.”.

7 (2) The heading of such subpart (and the item  
8 relating to such subpart in the table of subparts for  
9 part IV of subchapter A of chapter 1) are each  
10 amended by striking “**Build America**  
11 **Bonds**” and inserting “**Build America Bonds**  
12 **and Clean Energy Bonds**”.

13 (3) The table of sections for subchapter B of  
14 chapter 65 of subtitle F is amended by adding at  
15 the end the following new item:

“Sec. 6433. Credit for qualified clean energy bonds allowed to issuer.”.

16 (4) Subparagraph (A) of section 6211(b)(4) is  
17 amended by striking “and 6431” and inserting  
18 “6431, and 6433”.

19 (d) EFFECTIVE DATE.—The amendments made by  
20 this section shall apply to obligations issued after the date  
21 of the enactment of this Act.



1           **Subtitle E—Treatment of Tar**  
2           **Sands Under Excise Taxes**

3   **SEC. 5051. CLARIFICATION OF TAR SANDS AS CRUDE OIL**  
4           **FOR EXCISE TAX PURPOSES.**

5           (a) **IN GENERAL.**—Paragraph (1) of section 4612(a)  
6 is amended to read as follows:

7                   “(1) **CRUDE OIL.**—The term ‘crude oil’ includes  
8           crude oil condensates, natural gasoline, synthetic pe-  
9           troleum, any bitumen or bituminous mixture, any oil  
10          derived from a bitumen or bituminous mixture, and  
11          any oil derived from kerogen-bearing sources.”.

12          (b) **TECHNICAL AMENDMENT.**—Paragraph (2) of  
13 section 4612(a) is amended by striking “from a well lo-  
14 cated”.

15          (c) **EFFECTIVE DATE.**—The amendments made by  
16 this section shall apply to oil and petroleum products re-  
17 ceived, entered, used, or exported during calendar quarters  
18 beginning more than 60 days after the date of the enact-  
19 ment of this Act.

1       **Subtitle F—Closing Big Oil Tax**  
2                                   **Loopholes**

3       **SEC. 5061. MODIFICATIONS OF FOREIGN TAX CREDIT**  
4                                   **RULES APPLICABLE TO MAJOR INTEGRATED**  
5                                   **OIL COMPANIES WHICH ARE DUAL CAPACITY**  
6                                   **TAXPAYERS.**

7           (a) IN GENERAL.—Section 901 is amended by redess-  
8 ignating subsection (n) as subsection (o) and by inserting  
9 after subsection (m) the following new subsection:

10           “(n) SPECIAL RULES RELATING TO MAJOR INTE-  
11 GRATED OIL COMPANIES WHICH ARE DUAL CAPACITY  
12 TAXPAYERS.—

13                   “(1) GENERAL RULE.—Notwithstanding any  
14 other provision of this chapter, any amount paid or  
15 accrued by a dual capacity taxpayer which is a  
16 major integrated oil company (within the meaning of  
17 section 167(h)(5)) to a foreign country or possession  
18 of the United States for any period shall not be con-  
19 sidered a tax—

20                                   “(A) if, for such period, the foreign coun-  
21 try or possession does not impose a generally  
22 applicable income tax, or

23                                   “(B) to the extent such amount exceeds  
24 the amount (determined in accordance with reg-  
25 ulations) which—

1                   “(i) is paid by such dual capacity tax-  
2                   payer pursuant to the generally applicable  
3                   income tax imposed by the country or pos-  
4                   session, or

5                   “(ii) would be paid if the generally ap-  
6                   plicable income tax imposed by the country  
7                   or possession were applicable to such dual  
8                   capacity taxpayer.

9                   Nothing in this paragraph shall be construed to  
10                  imply the proper treatment of any such amount not  
11                  in excess of the amount determined under subpara-  
12                  graph (B).

13                  “(2) DUAL CAPACITY TAXPAYER.—For pur-  
14                  poses of this subsection, the term ‘dual capacity tax-  
15                  payer’ means, with respect to any foreign country or  
16                  possession of the United States, a person who—

17                         “(A) is subject to a levy of such country or  
18                         possession, and

19                         “(B) receives (or will receive) directly or  
20                         indirectly a specific economic benefit (as deter-  
21                         mined in accordance with regulations) from  
22                         such country or possession.

23                  “(3) GENERALLY APPLICABLE INCOME TAX.—  
24                  For purposes of this subsection—

1           “(A) IN GENERAL.—The term ‘generally  
2           applicable income tax’ means an income tax (or  
3           a series of income taxes) which is generally im-  
4           posed under the laws of a foreign country or  
5           possession on income derived from the conduct  
6           of a trade or business within such country or  
7           possession.

8           “(B) EXCEPTIONS.—Such term shall not  
9           include a tax unless it has substantial applica-  
10          tion, by its terms and in practice, to—

11                   “(i) persons who are not dual capacity  
12                   taxpayers, and

13                   “(ii) persons who are citizens or resi-  
14                   dents of the foreign country or posses-  
15                   sion.”.

16          (b) EFFECTIVE DATE.—

17           (1) IN GENERAL.—The amendments made by  
18           this section shall apply to taxes paid or accrued in  
19           taxable years beginning after the date of the enact-  
20           ment of this Act.

21           (2) CONTRARY TREATY OBLIGATIONS  
22           UPHELD.—The amendments made by this section  
23           shall not apply to the extent contrary to any treaty  
24           obligation of the United States.

1 **SEC. 5062. LIMITATION ON SECTION 199 DEDUCTION AT-**  
2 **TRIBUTABLE TO OIL, NATURAL GAS, OR PRI-**  
3 **MARY PRODUCTS THEREOF.**

4 (a) DENIAL OF DEDUCTION.—Paragraph (4) of sec-  
5 tion 199(c) is amended by adding at the end the following  
6 new subparagraph:

7 “(E) SPECIAL RULE FOR CERTAIN OIL  
8 AND GAS INCOME.—In the case of any taxpayer  
9 who is a major integrated oil company (within  
10 the meaning of section 167(h)(5)) for the tax-  
11 able year, the term ‘domestic production gross  
12 receipts’ shall not include gross receipts from  
13 the production, refining, processing, transpor-  
14 tation, or distribution of oil, gas, or any pri-  
15 mary product (within the meaning of subsection  
16 (d)(9)) thereof.”.

17 (b) EFFECTIVE DATE.—The amendment made by  
18 this section shall apply to taxable years beginning after  
19 December 31, 2015.

20 **SEC. 5063. LIMITATION ON DEDUCTION FOR INTANGIBLE**  
21 **DRILLING AND DEVELOPMENT COSTS; AMOR-**  
22 **TIZATION OF DISALLOWED AMOUNTS.**

23 (a) IN GENERAL.—Section 263(c) is amended to read  
24 as follows:

1           “(c) INTANGIBLE DRILLING AND DEVELOPMENT  
2 COSTS IN THE CASE OF OIL AND GAS WELLS AND GEO-  
3 THERMAL WELLS.—

4           “(1) IN GENERAL.—Notwithstanding subsection  
5 (a), and except as provided in subsection (i), regula-  
6 tions shall be prescribed by the Secretary under this  
7 subtitle corresponding to the regulations which  
8 granted the option to deduct as expenses intangible  
9 drilling and development costs in the case of oil and  
10 gas wells and which were recognized and approved  
11 by the Congress in House Concurrent Resolution 50,  
12 Seventy-ninth Congress. Such regulations shall also  
13 grant the option to deduct as expenses intangible  
14 drilling and development costs in the case of wells  
15 drilled for any geothermal deposit (as defined in sec-  
16 tion 613(e)(2)) to the same extent and in the same  
17 manner as such expenses are deductible in the case  
18 of oil and gas wells. This subsection shall not apply  
19 with respect to any costs to which any deduction is  
20 allowed under section 59(e) or 291.

21           “(2) EXCLUSION.—

22           “(A) IN GENERAL.—This subsection shall  
23 not apply to amounts paid or incurred by a tax-  
24 payer in any taxable year in which such tax-

1 payer is a major integrated oil company (within  
2 the meaning of section 167(h)(5)).

3 “(B) AMORTIZATION OF AMOUNTS NOT AL-  
4 LOWABLE AS DEDUCTIONS UNDER SUBPARA-  
5 GRAPH (A).—The amount not allowable as a de-  
6 duction for any taxable year by reason of sub-  
7 paragraph (A) shall be allowable as a deduction  
8 ratably over the 60-month period beginning  
9 with the month in which the costs are paid or  
10 incurred. For purposes of section 1254, any de-  
11 duction under this subparagraph shall be treat-  
12 ed as a deduction under this subsection.”.

13 (b) EFFECTIVE DATE.—The amendment made by  
14 this section shall apply to amounts paid or incurred in tax-  
15 able years beginning after December 31, 2015.

16 **SEC. 5064. LIMITATION ON PERCENTAGE DEPLETION AL-**  
17 **LOWANCE FOR OIL AND GAS WELLS.**

18 (a) IN GENERAL.—Section 613A is amended by add-  
19 ing at the end the following new subsection:

20 “(f) APPLICATION WITH RESPECT TO MAJOR INTE-  
21 GRATED OIL COMPANIES.—In the case of any taxable year  
22 in which the taxpayer is a major integrated oil company  
23 (within the meaning of section 167(h)(5)), the allowance  
24 for percentage depletion shall be zero.”.

1 (b) EFFECTIVE DATE.—The amendment made by  
2 this section shall apply to taxable years beginning after  
3 December 31, 2015.

4 **SEC. 5065. LIMITATION ON DEDUCTION FOR TERTIARY**  
5 **INJECTANTS.**

6 (a) IN GENERAL.—Section 193 is amended by adding  
7 at the end the following new subsection:

8 “(d) APPLICATION WITH RESPECT TO MAJOR INTE-  
9 GRATED OIL COMPANIES.—

10 “(1) IN GENERAL.—This section shall not apply  
11 to amounts paid or incurred by a taxpayer in any  
12 taxable year in which such taxpayer is a major inte-  
13 grated oil company (within the meaning of section  
14 167(h)(5)).

15 “(2) AMORTIZATION OF AMOUNTS NOT ALLOW-  
16 ABLE AS DEDUCTIONS UNDER PARAGRAPH (1).—The  
17 amount not allowable as a deduction for any taxable  
18 year by reason of paragraph (1) shall be allowable  
19 as a deduction ratably over the 60-month period be-  
20 ginning with the month in which the costs are paid  
21 or incurred.”.

22 (b) EFFECTIVE DATE.—The amendment made by  
23 this section shall apply to amounts paid or incurred in tax-  
24 able years beginning after December 31, 2015.



1           **TITLE VI—CONSERVATION**  
2                           **REAUTHORIZATION**

3   **SEC. 6001. NATIONAL PARK SERVICE CENTENNIAL FUND.**

4           (a) IN GENERAL.—Chapter 1049 of title 54, United  
5 States Code, is amended by adding at the end the fol-  
6 lowing:

7   **“§ 104908. National Park Service Centennial Fund**

8           “(a) IN GENERAL.—There is established in the  
9 Treasury a fund, to be known as the ‘National Park Serv-  
10 ice Centennial Fund’ (referred to in this section as the  
11 ‘Fund’).

12           “(b) DEPOSITS TO FUND.—Notwithstanding any  
13 provision of law providing that the proceeds shall be cred-  
14 ited to miscellaneous receipts of the Treasury, for each  
15 fiscal year, there shall be deposited in the Fund, from rev-  
16 enues due and payable to the United States under section  
17 9 of the Outer Continental Shelf Lands Act (43 U.S.C.  
18 1338), \$150,000,000.

19           “(c) AVAILABILITY.—Amounts deposited in the Fund  
20 shall be made available for expenditure, without further  
21 appropriation or fiscal year limitation, in accordance with  
22 this section.

23           “(d) USE OF FUND.—The Secretary shall use  
24 amounts in the Fund for critical National Park System  
25 maintenance and infrastructure needs and other projects

1 and programs that will better enable the National Park  
2 Service to protect park resources and provide improved  
3 visitor services.

4 “(e) LAND ACQUISITION PROHIBITION.—Amounts in  
5 the Fund shall not be used for land acquisition.”.

6 (b) CLERICAL AMENDMENT.—The table of sections  
7 for chapter 1049 of title 54, United States Code, is  
8 amended by inserting after the item relating to section  
9 104907 the following:

“Sec. 104908. National Park Service Centennial Fund.”.

10 **SEC. 6002. LAND AND WATER CONSERVATION FUND.**

11 (a) PERMANENT AUTHORIZATION.—Section 200302  
12 of title 54, United States Code, is amended—

13 (1) in subsection (b), in the matter preceding  
14 paragraph (1), by striking “During the period end-  
15 ing September 30, 2015, there” and inserting  
16 “There”; and

17 (2) in subsection (c)—

18 (A) in paragraph (1), by striking “through  
19 September 30, 2015”; and

20 (3) by striking paragraph (3).

21 (b) FULL FUNDING.—Section 200303 of title 54,  
22 United States Code, is amended to read as follows:

23 **“§ 200303. Availability of funds**

24 “(a) IN GENERAL.—Amounts deposited in the Fund  
25 under section 200302 on or after the date of enactment

1 of the American Energy Innovation Act shall be made  
2 available for expenditure, without further appropriation or  
3 fiscal year limitation, to carry out the purposes of the  
4 Fund (including accounts and programs made available  
5 from the Fund under the Consolidated and Further Con-  
6 tinuing Appropriations Act, 2015 (Public Law 113–235)).

7 “(b) ADDITIONAL AMOUNTS.—Amounts made avail-  
8 able under subsection (a) shall be in addition to amounts  
9 made available to the Fund under section 105 of the Gulf  
10 of Mexico Energy Security Act of 2006 (43 U.S.C. 1331  
11 note; Public Law 109–432) or otherwise appropriated  
12 from the Fund.

13 “(c) ALLOCATION AUTHORITY.—

14 “(1) SUBMISSION OF COST ESTIMATES.—The  
15 President shall submit to Congress detailed account,  
16 program, and project allocations to be funded under  
17 subsection (a) as part of the annual budget submis-  
18 sion of the President.

19 “(2) ALTERNATE ALLOCATION.—

20 “(A) IN GENERAL.—Appropriations Acts  
21 may provide for alternate allocation of amounts  
22 made available under subsection (a), including  
23 allocations by account and program.

24 “(B) ALLOCATION BY PRESIDENT.—

1                   “(i) NO ALTERNATE ALLOCATIONS.—  
2                   If Congress has not enacted legislation es-  
3                   tablishing alternate allocations by the date  
4                   that is 120 days after the date on which  
5                   the applicable fiscal year begins, amounts  
6                   made available under subsection (a) shall  
7                   be allocated by the President.

8                   “(ii) INSUFFICIENT ALTERNATE AL-  
9                   LOCATION.—If Congress enacts legislation  
10                  establishing alternate allocations for  
11                  amounts made available under subsection  
12                  (a) that are less than the full amount ap-  
13                  propriated under that subsection, the dif-  
14                  ference between the amount appropriated  
15                  and the alternate allocation shall be allo-  
16                  cated by the President.

17                  “(3) ANNUAL REPORT.—The President shall  
18                  submit to Congress an annual report that describes  
19                  the final allocation by account, program, and project  
20                  of amounts made available under subsection (a), in-  
21                  cluding a description of the status of obligations and  
22                  expenditures.”.

23                  (c) CLERICAL AMENDMENT.—The table of sections  
24                  for title 54 is amended by striking the item relating to  
25                  section 200303 and inserting the following:

“Sec. 200303. Availability of funds.”.

1 (d) PUBLIC ACCESS.—Section 200306 of title 54,  
2 United States Code, is amended by adding at the end the  
3 following:

4 “(c) PUBLIC ACCESS.—Not less than 1.5 percent of  
5 the annual authorized funding amount shall be made  
6 available each year for projects that secure recreational  
7 public access to existing Federal public land for hunting,  
8 fishing, or other recreational purposes.”.

9 **SEC. 6003. HISTORIC PRESERVATION FUND.**

10 (a) AUTHORIZATION.—Section 303102 of title 54,  
11 United States Code, is amended by striking “of fiscal  
12 years 2012 to 2015” and inserting “fiscal year”.

13 (b) USE AND AVAILABILITY.—Section 303103 of title  
14 54, United States Code, is amended by striking the first  
15 sentence and inserting the following: “Amounts deposited  
16 in the Historic Preservation Fund on or after the date  
17 of enactment of the American Energy Innovation Act shall  
18 only be used to carry out this division and shall be avail-  
19 able for expenditure without further appropriation.”.