

AMENDMENT NO. _____ Calendar No. _____

Purpose: In the nature of a substitute.

IN THE SENATE OF THE UNITED STATES—116th Cong., 2d Sess.

S. 2657

To support innovation in advanced geothermal research and development, and for other purposes.

Referred to the Committee on _____ and
ordered to be printed

Ordered to lie on the table and to be printed

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

Viz:

1 Strike all after the enacting clause and insert the fol-
2 lowing:

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

4 (a) SHORT TITLE.—This Act may be cited as the
5 “American Energy Innovation Act of 2020”.

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.

TITLE I—INNOVATION

Subtitle A—Efficiency

PART I—ENERGY SAVINGS AND INDUSTRIAL COMPETITIVENESS

SUBPART A—BUILDINGS

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CHAPTER 1—BUILDING EFFICIENCY

- Sec. 1001. Commercial building energy consumption information sharing.
- Sec. 1002. Energy efficiency materials pilot program.
- Sec. 1003. Coordination of energy retrofitting assistance for schools.
- Sec. 1004. Grants for energy efficiency improvements and renewable energy improvements at public school facilities.
- Sec. 1005. Smart Building Acceleration.

CHAPTER 2—WORKER TRAINING AND CAPACITY BUILDING

- Sec. 1011. Building training and assessment centers.
- Sec. 1012. Career skills training.

SUBPART B—INDUSTRIAL EFFICIENCY AND COMPETITIVENESS

- Sec. 1021. Purposes.
- Sec. 1022. Future of Industry program and industrial research and assessment centers.
- Sec. 1023. CHP Technical Assistance Partnership Program.
- Sec. 1024. Sustainable manufacturing initiative.
- Sec. 1025. Conforming amendments.

SUBPART C—FEDERAL AGENCY ENERGY EFFICIENCY

- Sec. 1031. Energy and water performance requirements for Federal buildings.
- Sec. 1032. Federal Energy Management Program.
- Sec. 1033. Use of energy and water efficiency measures in Federal buildings.
- Sec. 1034. Federal building energy efficiency performance standards; certification system and level for green buildings.
- Sec. 1035. Energy-efficient and energy-saving information technologies.
- Sec. 1036. High-performance green Federal buildings.
- Sec. 1037. Energy efficient data centers.

SUBPART D—REBATES AND CERTIFICATIONS

- Sec. 1041. Third-Party Certification Under Energy Star Program.
- Sec. 1042. Extended Product System Rebate Program.
- Sec. 1043. Energy Efficient Transformer Rebate Program.

SUBPART E—MISCELLANEOUS

- Sec. 1051. Advance appropriations required.

PART II—WEATHERIZATION

- Sec. 1101. Weatherization Assistance Program.

Subtitle B—Renewable Energy

- Sec. 1201. Hydroelectric production incentives and efficiency improvements.
- Sec. 1202. Marine energy research and development.
- Sec. 1203. Advanced geothermal innovation leadership.
- Sec. 1204. Wind energy research and development.
- Sec. 1205. Solar energy research and development.

Subtitle C—Energy Storage

- Sec. 1301. Better energy storage technology.

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Sec. 1302. Bureau of Reclamation pumped storage hydropower development.

Subtitle D—Carbon Capture, Utilization, and Storage

Sec. 1401. Fossil energy.

Sec. 1402. Establishment of coal and natural gas technology program.

Sec. 1403. Carbon storage validation and testing.

Sec. 1404. Carbon utilization program.

Sec. 1405. Carbon removal.

Subtitle E—Nuclear

Sec. 1501. Light water reactor sustainability program.

Sec. 1502. Nuclear energy research, development, and demonstration.

Sec. 1503. Advanced fuels development.

Sec. 1504. Nuclear science and engineering support.

Sec. 1505. University Nuclear Leadership Program.

Sec. 1506. Versatile, reactor-based fast neutron source.

Sec. 1507. Advanced nuclear reactor research and development goals.

Sec. 1508. Nuclear energy strategic plan.

Sec. 1509. Advanced nuclear fuel security program.

Sec. 1510. International nuclear energy cooperation.

Sec. 1511. Integrated Energy Systems Program.

Subtitle F—Industrial Technologies

PART I—INNOVATION

Sec. 1601. Purpose.

Sec. 1602. Coordination of research and development of energy efficient technologies for industry.

Sec. 1603. Industrial emissions reduction technology development program.

Sec. 1604. Industrial Technology Innovation Advisory Committee.

Sec. 1605. Technical assistance program to implement industrial emissions reduction.

PART II—SMART MANUFACTURING

Sec. 1611. Definitions.

Sec. 1612. Development of national smart manufacturing plan.

Sec. 1613. Leveraging existing agency programs to assist small and medium manufacturers.

Sec. 1614. Leveraging smart manufacturing infrastructure at National Laboratories.

Sec. 1615. State manufacturing leadership.

Sec. 1616. Report.

Subtitle G—Vehicles

Sec. 1701. Objectives.

Sec. 1702. Coordination and nonduplication.

Sec. 1703. Authorization of appropriations.

Sec. 1704. Reporting.

Sec. 1705. Vehicle research and development.

Sec. 1706. Medium- and heavy-duty commercial and transit vehicles program.

Sec. 1707. Class 8 truck and trailer systems demonstration.

Sec. 1708. Technology testing and metrics.

Sec. 1709. Nonroad systems pilot program.

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Sec. 1710. Repeal of existing authorities.

Subtitle H—Department of Energy

- Sec. 1801. Veterans' health initiative.
- Sec. 1802. Small scale LNG access.
- Sec. 1803. Appalachian energy for national security.
- Sec. 1804. Energy and water for sustainability.
- Sec. 1805. Technology transitions.
- Sec. 1806. Energy Technology Commercialization Fund cost-sharing.
- Sec. 1807. State loan eligibility.
- Sec. 1808. ARPA-E reauthorization.
- Sec. 1809. Adjusting strategic petroleum reserve mandated drawdowns.

TITLE II—SUPPLY CHAIN SECURITY

Subtitle A—Mineral Security

- Sec. 2101. Mineral security.
- Sec. 2102. Rare earth element advanced coal technologies.

Subtitle B—Cybersecurity and Grid Security and Modernization

PART I—CYBERSECURITY AND GRID SECURITY

- Sec. 2201. Incentives for advanced cybersecurity technology investment.
- Sec. 2202. Rural and municipal utility advanced cybersecurity grant and technical assistance program.
- Sec. 2203. State energy security plans.
- Sec. 2204. Enhancing grid security through public-private partnerships.
- Sec. 2205. Enhanced grid security.

PART II—GRID MODERNIZATION

- Sec. 2210. Grid storage program.
- Sec. 2211. Technology demonstration on the distribution system.
- Sec. 2212. Micro-grid and hybrid micro-grid systems program.
- Sec. 2213. Electric grid architecture, scenario development, and modeling.
- Sec. 2214. Voluntary model pathways.
- Sec. 2215. Performance metrics for electricity infrastructure providers.
- Sec. 2216. Voluntary State, regional, and local electricity distribution planning.
- Sec. 2217. Authorization of appropriations.

Subtitle C—Workforce Development

- Sec. 2301. Definitions.
- Sec. 2302. Addressing insufficient compensation of employees and other personnel of the Federal Energy Regulatory Commission.
- Sec. 2303. Report on the authority of the Secretary to implement flexible compensation models.
- Sec. 2304. 21st Century Energy Workforce Advisory Board.
- Sec. 2305. National Laboratory jobs access pilot program.
- Sec. 2306. Clean energy workforce pilot program.

TITLE III—CODE MAINTENANCE

- Sec. 3001. Repeal of off-highway motor vehicles study.
- Sec. 3002. Repeal of methanol study.

- Sec. 3003. Repeal of state utility regulatory assistance.
- Sec. 3004. Repeal of authorization of appropriations provision.
- Sec. 3005. Repeal of residential energy efficiency standards study.
- Sec. 3006. Repeal of weatherization study.
- Sec. 3007. Repeal of report to Congress.
- Sec. 3008. Repeal of survey of energy saving potential.
- Sec. 3009. Repeal of report by General Services Administration.
- Sec. 3010. Repeal of intergovernmental energy management planning and coordination workshops.
- Sec. 3011. Repeal of Inspector General audit survey and President's Council on Integrity and Efficiency report to Congress.
- Sec. 3012. Repeal of procurement and identification of energy efficient products program.
- Sec. 3013. Repeal of photovoltaic energy program.
- Sec. 3014. Repeal of national action plan for demand response.
- Sec. 3015. Repeal of energy auditor training and certification.
- Sec. 3016. Repeal of national coal policy study.
- Sec. 3017. Repeal of study on compliance problem of small electric utility systems.
- Sec. 3018. Repeal of study of socioeconomic impacts of increased coal production and other energy development.
- Sec. 3019. Repeal of study of the use of petroleum and natural gas in combustors.
- Sec. 3020. Repeal of authorization of appropriations.
- Sec. 3021. Repeal of submission of reports.
- Sec. 3022. Repeal of electric utility conservation plan.
- Sec. 3023. Emergency Energy Conservation repeals.
- Sec. 3024. Energy Security Act repeals.
- Sec. 3025. Nuclear Safety Research, Development, and Demonstration Act of 1980 repeals.
- Sec. 3026. Repeal of Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989.
- Sec. 3027. Repeal of hydrogen research, development, and demonstration program.
- Sec. 3028. Repeal of study on alternative fuel use in nonroad vehicles and engines.
- Sec. 3029. Repeal of low interest loan program for small business fleet purchases.
- Sec. 3030. Repeal of technical and policy analysis for replacement fuel demand and supply information.
- Sec. 3031. Repeal of 1992 Report on Climate Change.
- Sec. 3032. Repeal of Director of Climate Protector establishment.
- Sec. 3033. Repeal of 1994 report on global climate change emissions.
- Sec. 3034. Repeal of telecommuting study.
- Sec. 3035. Repeal of advanced buildings for 2005 program.
- Sec. 3036. Repeal of Energy Research, Development, Demonstration, and Commercial Application Advisory Board.
- Sec. 3037. Repeal of study on use of energy futures for fuel purchase.
- Sec. 3038. Repeal of energy subsidy study.
- Sec. 3039. Elimination and consolidation of certain America COMPETES programs.
- Sec. 3040. Repeal of prior limitation on compensation of the Secretary of the Interior.

1 **SEC. 2. DEFINITIONS.**

2 In this Act:

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

5 (2) NATIONAL LABORATORY.—The term “Na-
6 tional Laboratory” has the meaning given the term
7 in section 2 of the Energy Policy Act of 2005 (42
8 U.S.C. 15801).

9 (3) SECRETARY.—Unless otherwise specified,
10 the term “Secretary” means the Secretary of En-
11 ergy.

12 **TITLE I—INNOVATION**

13 **Subtitle A—Efficiency**

14 **PART I—ENERGY SAVINGS AND INDUSTRIAL**

15 **COMPETITIVENESS**

16 **Subpart A—Buildings**

17 **CHAPTER 1—BUILDING EFFICIENCY**

18 **SEC. 1001. COMMERCIAL BUILDING ENERGY CONSUMPTION**
19 **INFORMATION SHARING.**

20 (a) IN GENERAL.—Not later than 120 days after the
21 date of enactment of this Act, the Administrator of the
22 Energy Information Administration (referred to in this
23 section as the “Administrator”) and the Administrator of
24 the Environmental Protection Agency shall sign, and sub-
25 mit to Congress, an information sharing agreement (re-

1 ferred to in this section as the “agreement”) relating to
2 commercial building energy consumption data.

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

5 (1) provide that the Administrator shall have
6 access to building-specific data in the Portfolio Man-
7 ager database of the Environmental Protection
8 Agency;

9 (2) describe the manner in which the Adminis-
10 trator shall incorporate appropriate data (including
11 the data described in subsection (c)) into any Com-
12 mercial Buildings Energy Consumption Survey (re-
13 ferred to in this section as “CBECS”) published
14 after the date of enactment of this Act for the pur-
15 pose of analyzing and estimating building popu-
16 lation, size, location, activity, energy usage, and any
17 other relevant building characteristic; and

18 (3) describe and compare—

19 (A) the methodologies that the Energy In-
20 formation Administration, the Environmental
21 Protection Agency, and State and local govern-
22 ment managers use to maximize the quality, re-
23 liability, and integrity of data collected through
24 CBECS, the Portfolio Manager database of the
25 Environmental Protection Agency, and State

1 and local building energy disclosure laws (in-
2 cluding regulations), respectively, and the man-
3 ner in which those methodologies can be im-
4 proved; and

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

10 (c) DATA.—The data referred in subsection (b)(2) in-
11 cludes data that—

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

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

17 (3) includes information on private sector build-
18 ings that are not less than 250,000 square feet.

19 (d) PROTECTION OF INFORMATION.—In carrying out
20 the agreement, the Administrator and the Administrator
21 of the Environmental Protection Agency shall protect in-
22 formation in accordance with—

23 (1) section 552(b)(4) of title 5, United States
24 Code (commonly known as the ‘Freedom of Informa-
25 tion Act’);

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

3 (3) any other applicable law (including regula-
4 tions).

5 **SEC. 1002. ENERGY EFFICIENCY MATERIALS PILOT PRO-**
6 **GRAM.**

7 (a) DEFINITIONS.—In this section:

8 (1) APPLICANT.—The term “applicant” means
9 a nonprofit organization that applies for a grant
10 under this section.

11 (2) ENERGY-EFFICIENCY MATERIAL.—

12 (A) IN GENERAL.—The term “energy-effi-
13 ciency material” means a material (including a
14 product, equipment, or system) the installation
15 of which results in a reduction in use by a non-
16 profit organization of energy or fuel.

17 (B) INCLUSIONS.—The term “energy-effi-
18 ciency material” includes—

19 (i) a roof or lighting system or compo-
20 nent of the system;

21 (ii) a window;

22 (iii) a door, including a security door;

23 (iv) a heating, ventilation, or air con-
24 ditioning system or component of the sys-
25 tem (including insulation and wiring and

1 plumbing improvements needed to serve a
2 more efficient system); and

3 (v) a renewable energy generation or
4 heating system, including a solar, photo-
5 voltaic, wind, geothermal, or biomass (in-
6 cluding wood pellet) system or component
7 of the system.

8 (3) NONPROFIT BUILDING.—

9 (A) IN GENERAL.—The term “nonprofit
10 building” means a building operated and owned
11 by an organization that is described in section
12 501(c)(3) of the Internal Revenue Code of 1986
13 and exempt from tax under section 501(a) of
14 such Code.

15 (B) INCLUSIONS.—The term “nonprofit
16 building” includes a building described in sub-
17 paragraph (A) that is—

- 18 (i) a hospital;
19 (ii) a youth center;
20 (iii) a school;
21 (iv) a social-welfare program facility;
22 (v) a faith-based organization; or
23 (vi) any other nonresidential and non-
24 commercial structure.

1 (4) LIMITATION ON INDIVIDUAL GRANT
2 AMOUNT.—Each grant awarded under this section
3 shall not exceed \$200,000.

4 (d) REPORT.—Not later than January 1, 2023, the
5 Secretary shall submit to Congress a report on the pilot
6 program established under subsection (b) that describes—

7 (1) the net reduction in energy use and energy
8 costs under the pilot program; and

9 (2) for each recipient of a grant under the pilot
10 program—

11 (A) the geographic location of the recipi-
12 ent; and

13 (B) the size of the organization of the re-
14 cipient.

15 (e) AUTHORIZATION OF APPROPRIATIONS.—There is
16 authorized to be appropriated to carry out this section
17 \$10,000,000 for each of fiscal years 2021 through 2025,
18 to remain available until expended.

19 **SEC. 1003. COORDINATION OF ENERGY RETROFITTING AS-**
20 **SISTANCE FOR SCHOOLS.**

21 (a) DEFINITION OF SCHOOL.—In this section, the
22 term “school” means—

23 (1) an elementary school or secondary school
24 (as defined in section 8101 of the Elementary and

1 Secondary Education Act of 1965 (20 U.S.C.
2 7801));

3 (2) an institution of higher education (as de-
4 fined in section 102(a) of the Higher Education Act
5 of 1965 (20 U.S.C. 1002(a)));

6 (3) a school of the defense dependents' edu-
7 cation system under the Defense Dependents' Edu-
8 cation Act of 1978 (20 U.S.C. 921 et seq.) or estab-
9 lished under section 2164 of title 10, United States
10 Code;

11 (4) a school operated by the Bureau of Indian
12 Education;

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

16 (6) a Tribal College or University (as defined in
17 section 316(b) of the Higher Education Act of 1965
18 (20 U.S.C. 1059c(b))).

19 (b) DESIGNATION OF LEAD AGENCY.—The Sec-
20 retary, acting through the Office of Energy Efficiency and
21 Renewable Energy, shall act as the lead Federal agency
22 for coordinating and disseminating information on exist-
23 ing Federal programs and assistance that may be used
24 to help initiate, develop, and finance energy efficiency, re-

1 newable energy, and energy retrofitting projects for
2 schools.

3 (c) REQUIREMENTS.—In carrying out coordination
4 and outreach under subsection (b), the Secretary shall—

5 (1) in consultation and coordination with the
6 appropriate Federal agencies, carry out a review of
7 existing programs and financing mechanisms (in-
8 cluding revolving loan funds and loan guarantees)
9 available in or from the Department of Agriculture,
10 the Department, the Department of Education, the
11 Department of the Treasury, the Internal Revenue
12 Service, the Environmental Protection Agency, and
13 other appropriate Federal agencies with jurisdiction
14 over energy financing and facilitation that are cur-
15 rently used or may be used to help initiate, develop,
16 and finance energy efficiency, renewable energy, and
17 energy retrofitting projects for schools;

18 (2) establish a Federal cross-departmental col-
19 laborative coordination, education, and outreach ef-
20 fort to streamline communication and promote avail-
21 able Federal opportunities and assistance described
22 in paragraph (1), for energy efficiency, renewable
23 energy, and energy retrofitting projects that enables
24 States, local educational agencies, and schools—

1 (A) to use existing Federal opportunities
2 more effectively; and

3 (B) to form partnerships with Governors,
4 State energy programs, local educational, finan-
5 cial, and energy officials, State and local gov-
6 ernment officials, nonprofit organizations, and
7 other appropriate entities, to support the initi-
8 ation of the projects;

9 (3) provide technical assistance for States, local
10 educational agencies, and schools to help develop
11 and finance energy efficiency, renewable energy, and
12 energy retrofitting projects—

13 (A) to increase the energy efficiency of
14 buildings or facilities;

15 (B) to install systems that individually
16 generate energy from renewable energy re-
17 sources;

18 (C) to establish partnerships to leverage
19 economies of scale and additional financing
20 mechanisms available to larger clean energy ini-
21 tiatives; or

22 (D) to promote—

23 (i) the maintenance of health, environ-
24 mental quality, and safety in schools, in-
25 cluding the ambient air quality, through

1 energy efficiency, renewable energy, and
2 energy retrofit projects; and

3 (ii) the achievement of expected en-
4 ergy savings and renewable energy produc-
5 tion through proper operations and main-
6 tenance practices;

7 (4) develop and maintain a single online re-
8 source website with contact information for relevant
9 technical assistance and support staff in the Office
10 of Energy Efficiency and Renewable Energy for
11 States, local educational agencies, and schools to ef-
12 fectively access and use Federal opportunities and
13 assistance described in paragraph (1) to develop en-
14 ergy efficiency, renewable energy, and energy retro-
15 fitting projects; and

16 (5) establish a process for recognition of schools
17 that—

18 (A) have successfully implemented energy
19 efficiency, renewable energy, and energy retro-
20 fitting projects; and

21 (B) are willing to serve as resources for
22 other local educational agencies and schools to
23 assist initiation of similar efforts.

24 (d) REPORT.—Not later than 180 days after the date
25 of enactment of this Act, the Secretary shall submit to

1 Congress a report describing the implementation of this
2 section.

3 **SEC. 1004. GRANTS FOR ENERGY EFFICIENCY IMPROVE-**
4 **MENTS AND RENEWABLE ENERGY IMPROVE-**
5 **MENTS AT PUBLIC SCHOOL FACILITIES.**

6 (a) DEFINITIONS.—In this section:

7 (1) ELIGIBLE ENTITY.—The term “eligible enti-
8 ty” means a consortium of—

9 (A) 1 local educational agency; and

10 (B) 1 or more—

11 (i) schools;

12 (ii) nonprofit organizations;

13 (iii) for-profit organizations; or

14 (iv) community partners that have the
15 knowledge and capacity to partner and as-
16 sist with energy improvements.

17 (2) ENERGY IMPROVEMENT.—The term “en-
18 ergy improvement” means—

19 (A) any improvement, repair, renovation,
20 or installation to a school, including school
21 grounds, that will result in a direct reduction in
22 school energy costs, including improvements to
23 building envelope, air conditioning, ventilation,
24 heating system, domestic hot water heating,

1 compressed air systems, distribution systems,
2 lighting, power systems, and controls;

3 (B) any improvement, repair, renovation,
4 or installation that—

5 (i) leads to an improvement in teacher
6 and student health, including indoor air
7 quality, daylighting, ventilation, electrical
8 lighting, green roofs, outdoor gardens, and
9 acoustics; and

10 (ii) results in a reduction in school en-
11 ergy costs as described in subparagraph
12 (A);

13 (C) the installation of renewable energy
14 technologies (such as wind power, photovoltaics,
15 solar thermal systems, geothermal energy, hy-
16 drogen-fueled systems, biomass-based systems,
17 biofuels, anaerobic digesters, and hydropower)
18 that provide power to a school;

19 (D) the installation of zero-emissions vehi-
20 cle infrastructure on school grounds for exclu-
21 sive use of school buses, school fleets, or stu-
22 dents, or for the general public; and

23 (E) the purchase or lease of zero-emissions
24 vehicles, including school buses, fleet vehicles,
25 and other operational vehicles.

1 (3) LOCAL EDUCATIONAL AGENCY.—The term
2 “local educational agency” has the meaning given
3 the term in section 8101 of the Elementary and Sec-
4 ondary Education Act of 1965 (20 U.S.C. 7801).

5 (4) PARTNERING LOCAL EDUCATIONAL AGEN-
6 CY.—The term “partnering local educational agen-
7 cy”, when used with respect to an eligible entity,
8 means the local educational agency participating in
9 the eligible entity.

10 (5) ZERO-EMISSIONS VEHICLE INFRASTRUC-
11 TURE.—The term “zero-emissions vehicle infrastruc-
12 ture” means infrastructure used to charge or fuel—

13 (A) a zero-emission vehicle (as defined in
14 section 88.102–94 of title 40, Code of Federal
15 Regulations (or successor regulation)); or

16 (B) a vehicle that does not produce ex-
17 haust emissions of any criteria pollutant (or
18 precursor pollutant) or greenhouse gas under
19 any possible operational modes or conditions.

20 (b) AUTHORITY.—From amounts made available for
21 grants under this section, the Secretary shall award com-
22 petitive grants to eligible entities to make energy improve-
23 ments authorized by this section.

24 (c) APPLICATIONS.—

1 (1) IN GENERAL.—An eligible entity desiring a
2 grant under this section shall submit to the Sec-
3 retary an application at such time, in such manner,
4 and containing such information as the Secretary
5 may require.

6 (2) CONTENTS.—The application submitted
7 under paragraph (1) shall include each of the fol-
8 lowing:

9 (A) A needs assessment of the current con-
10 dition of the school and facilities that are to re-
11 ceive the energy improvements.

12 (B) A draft work plan of what the eligible
13 entity proposes to achieve at the school and a
14 description of the energy improvements to be
15 carried out.

16 (C) A description of the capacity of the eli-
17 gible entity to provide services and comprehen-
18 sive support to make the energy improvements.

19 (D) An assessment of the applicant's ex-
20 pected needs of the eligible entity for operation
21 and maintenance training funds, and a plan for
22 use of those funds, if any.

23 (E) An assessment of the expected energy,
24 safety, and health benefits of the energy im-
25 provements.

1 (F) A lifecycle cost estimate of the pro-
2 posed energy improvements.

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

8 (d) PRIORITY.—In awarding grants under this sec-
9 tion, the Secretary shall give a priority to eligible enti-
10 ties—

11 (1) that have renovation, repair, and improve-
12 ment funding needs; and

13 (2)(A) that serve a high percentage, as deter-
14 mined by the Secretary, of students who are eligible
15 for a free or reduced price lunch under the Richard
16 B. Russell National School Lunch Act (42 U.S.C.
17 1751 et seq.) (which may be calculated for students
18 in a high school (as defined by section 8101 of the
19 Elementary and Secondary Education Act of 1965
20 (20 U.S.C. 7801)) using data from the schools that
21 feed into the high school); or

22 (B) with a participating local educational agen-
23 cy designated with a school district locale code of 41,
24 42, or 43, as determined by the National Center for

1 Education Statistics in consultation with the Bureau
2 of the Census.

3 (e) COMPETITIVE CRITERIA.—The competitive cri-
4 teria used by the Secretary to award grants under this
5 section shall include the following:

6 (1) The difference between the fiscal capacity of
7 the eligible entity to carry out, and the needs of the
8 partnering local educational agency for, energy im-
9 provements at school facilities, including—

10 (A) the current and historic ability of the
11 partnering local educational agency to raise
12 funds for construction, renovation, moderniza-
13 tion, and major repair projects for schools;

14 (B) whether the partnering local edu-
15 cational agency has been able to issue bonds or
16 receive other funds to support current infra-
17 structure needs of the partnering local edu-
18 cational agency; and

19 (C) the bond rating of the partnering local
20 educational agency.

21 (2) The likelihood that the partnering local edu-
22 cational agency or eligible entity will maintain in
23 good condition, and operate, the energy improve-
24 ments at any facility the improvement of which is
25 assisted.

1 (3) The potential energy, health, and safety
2 benefits from the proposed energy improvements,
3 considering factors including the degree of efficiency,
4 energy savings, and renewable energy generation in
5 proportion to school facility size and usage.

6 (f) USE OF GRANT AMOUNTS.—

7 (1) IN GENERAL.—An eligible entity receiving a
8 grant under this section shall use the grant amounts
9 only to make the energy improvements described in
10 the application, subject to the other provisions of
11 this subsection.

12 (2) OPERATION AND MAINTENANCE TRAIN-
13 ING.—An eligible entity receiving a grant under this
14 section may use not more than 5 percent of the
15 grant amounts for operation and maintenance train-
16 ing for energy efficiency and renewable energy im-
17 provements (such as maintenance staff and teacher
18 training, education, and preventative maintenance
19 training).

20 (3) AUDIT.—An eligible entity receiving a grant
21 under this section may use funds under the grant
22 for a third-party investigation and analysis for en-
23 ergy improvements (such as energy audits and exist-
24 ing building commissioning).

1 (4) CONTINUING EDUCATION.—An eligible enti-
2 ty receiving a grant under this section may use not
3 more than 3 percent of the grant amounts to develop
4 a continuing education curriculum relating to energy
5 improvements.

6 (g) CONTRACTING REQUIREMENTS.—

7 (1) DAVIS-BACON.—Any laborer or mechanic
8 employed by any contractor or subcontractor in the
9 performance of work on any energy improvements
10 funded by a grant under this section shall be paid
11 wages at rates not less than those prevailing on
12 similar construction in the locality as determined by
13 the Secretary of Labor under subchapter IV of chap-
14 ter 31 of title 40, United States Code (commonly re-
15 ferred to as the “Davis-Bacon Act”).

16 (2) COMPETITION.—Each eligible entity receiv-
17 ing a grant under this section shall ensure that, if
18 the eligible entity uses grant funds to carry out re-
19 pair or renovation through a contract, any such con-
20 tract process—

21 (A) ensures the maximum number of quali-
22 fied bidders, including small, minority, and
23 women-owned businesses, through full and open
24 competition; and

1 (3) TECHNICAL ASSISTANCE.—The Secretary
2 may provide technical assistance to eligible entities
3 to implement the guidelines and best practices devel-
4 oped under paragraph (1).

5 (j) AUTHORIZATION OF APPROPRIATIONS.—There
6 are authorized to be appropriated to carry out this section
7 \$100,000,000 for each of fiscal years 2021 through 2025.

8 **SEC. 1005. SMART BUILDING ACCELERATION.**

9 (a) DEFINITIONS.—In this section:

10 (1) PROGRAM.—The term “program” means
11 the Federal Smart Building Program established
12 under subsection (b)(1).

13 (2) SMART BUILDING.—The term “smart build-
14 ing” means a building, or collection of buildings,
15 with an energy system that—

16 (A) is flexible and automated;

17 (B) has extensive operational monitoring
18 and communication connectivity, allowing re-
19 mote monitoring and analysis of all building
20 functions;

21 (C) takes a systems-based approach in in-
22 tegrating the overall building operations for
23 control of energy generation, consumption, and
24 storage;

1 (D) communicates with utilities and other
2 third-party commercial entities, if appropriate;

3 (E) protects the health and safety of occu-
4 pants and workers; and

5 (F) is cybersecure.

6 (3) SMART BUILDING ACCELERATOR.—The
7 term “smart building accelerator” means an initia-
8 tive that is designed to demonstrate specific innova-
9 tive policies and approaches—

10 (A) with clear goals and a clear timeline;
11 and

12 (B) that, on successful demonstration,
13 would accelerate investment in energy effi-
14 ciency.

15 (b) FEDERAL SMART BUILDING PROGRAM.—

16 (1) ESTABLISHMENT.—Not later than 1 year
17 after the date of enactment of this Act, the Sec-
18 retary shall, in consultation with the Administrator
19 of General Services, establish a program to be
20 known as the “Federal Smart Building Program”—

21 (A) to implement smart building tech-
22 nology; and

23 (B) to demonstrate the costs and benefits
24 of smart buildings.

25 (2) SELECTION.—

1 (A) IN GENERAL.—The Secretary shall co-
2 ordinate the selection of not fewer than 1 build-
3 ing from among each of several key Federal
4 agencies, as described in paragraph (4), to com-
5 pose an appropriately diverse set of smart
6 buildings based on size, type, and geographic lo-
7 cation.

8 (B) INCLUSION OF COMMERCIALY OPER-
9 ATED BUILDINGS.—In making selections under
10 subparagraph (A), the Secretary may include
11 buildings that are owned by the Federal Gov-
12 ernment but are commercially operated.

13 (3) TARGETS.—Not later than 18 months after
14 the date of enactment of this Act, the Secretary
15 shall establish targets for the number of smart
16 buildings to be commissioned and evaluated by key
17 Federal agencies by 3 years and 6 years after the
18 date of enactment of this Act.

19 (4) FEDERAL AGENCY DESCRIBED.—The key
20 Federal agencies referred to in paragraph (2)(A)
21 shall include buildings operated by—

22 (A) the Department of the Army;

23 (B) the Department of the Navy;

24 (C) the Department of the Air Force;

25 (D) the Department;

- 1 (E) the Department of the Interior;
2 (F) the Department of Veterans Affairs;
3 and
4 (G) the General Services Administration.

5 (5) REQUIREMENT.—In implementing the pro-
6 gram, the Secretary shall leverage existing financing
7 mechanisms including energy savings performance
8 contracts, utility energy service contracts, and an-
9 nual appropriations.

10 (6) EVALUATION.—Using the guidelines of the
11 Federal Energy Management Program relating to
12 whole-building evaluation, measurement, and
13 verification, the Secretary shall evaluate the costs
14 and benefits of the buildings selected under para-
15 graph (2), including an identification of—

16 (A) which advanced building tech-
17 nologies—

18 (i) are most cost-effective; and

19 (ii) show the most promise for—

20 (I) increasing building energy
21 savings;

22 (II) increasing service perform-
23 ance to building occupants;

24 (III) reducing environmental im-
25 pacts; and

1 (IV) establishing cybersecurity;

2 and

3 (B) any other information the Secretary
4 determines to be appropriate.

5 (7) AWARDS.—The Secretary may expand
6 awards made under the Federal Energy Manage-
7 ment Program and the Better Building Challenge to
8 recognize specific agency achievements in accel-
9 erating the adoption of smart building technologies.

10 (c) SURVEY OF PRIVATE SECTOR SMART BUILD-
11 INGS.—

12 (1) SURVEY.—The Secretary shall conduct a
13 survey of privately owned smart buildings through-
14 out the United States, including commercial build-
15 ings, laboratory facilities, hospitals, multifamily resi-
16 dential buildings, and buildings owned by nonprofit
17 organizations and institutions of higher education.

18 (2) SELECTION.—From among the smart build-
19 ings surveyed under paragraph (1), the Secretary
20 shall select not fewer than 1 building each from an
21 appropriate range of building sizes, types, and geo-
22 graphic locations.

23 (3) 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 (1), including an identification of—

4 (A) which advanced building technologies
5 and systems—

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 (d) LEVERAGING EXISTING PROGRAMS.—

19 (1) BETTER BUILDING CHALLENGE.—As part
20 of the Better Building Challenge of the Department,
21 the Secretary, in consultation with major private
22 sector property owners, shall develop smart building
23 accelerators to demonstrate innovative policies and
24 approaches that will accelerate the transition to

1 smart buildings in the public, institutional, and com-
2 mercial buildings sectors.

3 (2) RESEARCH AND DEVELOPMENT.—

4 (A) IN GENERAL.—The Secretary shall
5 conduct research and development to address
6 key barriers to the integration of advanced
7 building technologies and to accelerate the tran-
8 sition to smart buildings.

9 (B) INCLUSION.—The research and devel-
10 opment conducted under subparagraph (A)
11 shall include research and development on—

12 (i) achieving whole-building, systems-
13 level efficiency through smart system and
14 component integration;

15 (ii) improving physical components,
16 such as sensors and controls, to be adapt-
17 ive, anticipatory, and networked;

18 (iii) reducing the cost of key compo-
19 nents to accelerate the adoption of smart
20 building technologies;

21 (iv) data management, including the
22 capture and analysis of data and the inter-
23 operability of the energy systems;

24 (v) protecting against cybersecurity
25 threats and addressing security

1 vulnerabilities of building systems or
2 equipment;

3 (vi) business models, including how
4 business models may limit the adoption of
5 smart building technologies and how to
6 support transactive energy;

7 (vii) integration and application of
8 combined heat and power systems and en-
9 ergy storage for resiliency;

10 (viii) characterization of buildings and
11 components;

12 (ix) consumer and utility protections;

13 (x) continuous management, including
14 the challenges of managing multiple energy
15 systems and optimizing systems for dis-
16 parate stakeholders; and

17 (xi) other areas of research and devel-
18 opment, as determined appropriate by the
19 Secretary.

20 (e) REPORT.—Not later than 2 years after the date
21 of enactment of this Act, and every 2 years thereafter until
22 a total of 3 reports have been made, the Secretary shall
23 submit to the Committee on Energy and Natural Re-
24 sources of the Senate and the Committee on Energy and

1 Commerce and the Committee on Science, Space, and
2 Technology of the House of Representatives a report on—

3 (1) the establishment of the Federal Smart
4 Building Program and the evaluation of Federal
5 smart buildings under subsection (b);

6 (2) the survey and evaluation of private sector
7 smart buildings under subsection (c); and

8 (3) any recommendations of the Secretary to
9 further accelerate the transition to smart buildings.

10 **CHAPTER 2—WORKER TRAINING AND**
11 **CAPACITY BUILDING**

12 **SEC. 1011. BUILDING TRAINING AND ASSESSMENT CEN-**
13 **TERS.**

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

20 (1) to identify opportunities for optimizing en-
21 ergy efficiency and environmental performance in
22 buildings;

23 (2) to promote the application of emerging con-
24 cepts and technologies in commercial and institu-
25 tional buildings;

1 (3) to train engineers, architects, building sci-
2 entists, building energy permitting and enforcement
3 officials, and building technicians in energy-efficient
4 design and operation;

5 (4) to assist institutions of higher education
6 and Tribal Colleges or Universities in training build-
7 ing technicians;

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

12 (6) to coordinate with and assist State-accred-
13 ited technical training centers, community colleges,
14 Tribal Colleges or Universities, and local offices of
15 the National Institute of Food and Agriculture and
16 ensure appropriate services are provided under this
17 section to each region of the United States.

18 (b) COORDINATION AND NONDUPLICATION.—

19 (1) IN GENERAL.—The Secretary shall coordi-
20 nate the program with the industrial research and
21 assessment centers program and with other Federal
22 programs to avoid duplication of effort.

23 (2) COLLOCATION.—To the maximum extent
24 practicable, building, training, and assessment cen-

1 ters established under this section shall be collocated
2 with Industrial Assessment Centers.

3 (c) AUTHORIZATION OF APPROPRIATIONS.—There is
4 authorized to be appropriated to carry out this section
5 \$10,000,000, to remain available until expended.

6 **SEC. 1012. CAREER SKILLS TRAINING.**

7 (a) DEFINITION OF ELIGIBLE ENTITY.—In this sec-
8 tion, the term “eligible entity” means a nonprofit partner-
9 ship that—

10 (1) includes the equal participation of industry,
11 including public or private employers, and labor or-
12 ganizations, including joint labor-management train-
13 ing programs;

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

19 (3) demonstrates—

20 (A) experience in implementing and oper-
21 ating worker skills training and education pro-
22 grams;

23 (B) the ability to identify and involve in
24 training programs carried out under this sec-
25 tion, target populations of individuals who

1 would benefit from training and be actively in-
2 volved in activities relating to energy efficiency
3 and renewable energy industries; and

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

6 (b) ESTABLISHMENT.—The Secretary shall award
7 grants to eligible entities to pay the Federal share of asso-
8 ciated career skills training programs under which stu-
9 dents concurrently receive classroom instruction and on-
10 the-job training for the purpose of obtaining an industry-
11 related certification to install energy efficient buildings
12 technologies.

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

16 (d) AUTHORIZATION OF APPROPRIATIONS.—There is
17 authorized to be appropriated to carry out this section
18 \$10,000,000, to remain available until expended.

19 **Subpart B—Industrial Efficiency and**
20 **Competitiveness**

21 **SEC. 1021. PURPOSES.**

22 The purposes of this subpart are—

23 (1) to establish a clear and consistent authority
24 for industrial efficiency programs of the Depart-
25 ment;

1 (2) to accelerate the deployment of technologies
2 and practices that will increase industrial energy ef-
3 ficiency and improve productivity;

4 (3) to accelerate the development and dem-
5 onstration of technologies that will assist the deploy-
6 ment goals of the industrial efficiency programs of
7 the Department and increase manufacturing effi-
8 ciency;

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

11 (5) to meet the future workforce needs of in-
12 dustry; and

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

16 **SEC. 1022. FUTURE OF INDUSTRY PROGRAM AND INDUS-**
17 **TRIAL RESEARCH AND ASSESSMENT CEN-**
18 **TERS.**

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

22 (1) by striking the section heading and insert-
23 ing the following: “**FUTURE OF INDUSTRY PRO-**
24 **GRAM**”;

25 (2) in subsection (a)(2)—

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

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

5 “(E) water and wastewater treatment fa-
6 cilities, including systems that treat municipal,
7 industrial, and agricultural waste; and”;

8 (3) by striking subsection (e); and

9 (4) by redesignating subsection (f) as sub-
10 section (e).

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

15 **“SEC. 454. INDUSTRIAL RESEARCH AND ASSESSMENT CEN-**
16 **TERS.**

17 “(a) DEFINITIONS.—In this section:

18 “(1) ENERGY SERVICE PROVIDER.—The term
19 ‘energy service provider’ means—

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

1 “(B) any utility operating under a utility
2 energy service project.

3 “(2) INDUSTRIAL RESEARCH AND ASSESSMENT
4 CENTER.—The term ‘industrial research and assess-
5 ment center’ means—

6 “(A) an institution of higher education-
7 based industrial research and assessment center
8 that is funded by the Secretary under sub-
9 section (b); and

10 “(B) an industrial research and assess-
11 ment center at a trade school, community col-
12 lege, or union training program that is funded
13 by the Secretary under subsection (f).

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

16 “(1) IN GENERAL.—The Secretary shall provide
17 funding to institution of higher education-based in-
18 dustrial research and assessment centers.

19 “(2) PURPOSE.—The purpose of each institu-
20 tion of higher education-based industrial research
21 and assessment center shall be—

22 “(A) to identify opportunities for opti-
23 mizing energy efficiency and environmental per-
24 formance, including implementation of—

25 “(i) smart manufacturing;

1 “(ii) energy management systems;

2 “(iii) sustainable manufacturing; and

3 “(iv) information technology advance-
4 ments for supply chain analysis, logistics,
5 system monitoring, industrial and manu-
6 facturing processes, and other purposes;

7 “(B) to promote applications of emerging
8 concepts and technologies in small- and me-
9 dium-sized manufacturers (including water and
10 wastewater treatment facilities and federally
11 owned manufacturing facilities);

12 “(C) to promote research and development
13 for the use of alternative energy sources to sup-
14 ply heat, power, and new feedstocks for energy-
15 intensive industries;

16 “(D) to coordinate with appropriate Fed-
17 eral and State research offices;

18 “(E) to provide a clearinghouse for indus-
19 trial process and energy efficiency technical as-
20 sistance resources; and

21 “(F) to coordinate with State-accredited
22 technical training centers and community col-
23 leges, while ensuring appropriate services to all
24 regions of the United States.

1 “(c) COORDINATION.—To increase the value and ca-
2 pabilities of the industrial research and assessment cen-
3 ters, the centers shall—

4 “(1) coordinate with Manufacturing Extension
5 Partnership Centers of the National Institute of
6 Standards and Technology;

7 “(2) coordinate with the Federal Energy Man-
8 agement Program and the Building Technologies
9 Program of the Department of Energy to provide
10 building assessment services to manufacturers;

11 “(3) increase partnerships with the National
12 Laboratories of the Department of Energy to lever-
13 age the expertise, technologies, and research and de-
14 velopment capabilities of the National Laboratories
15 for national industrial and manufacturing needs;

16 “(4) increase partnerships with energy service
17 providers and technology providers to leverage pri-
18 vate sector expertise and accelerate deployment of
19 new and existing technologies and processes for en-
20 ergy efficiency, power factor, and load management;

21 “(5) identify opportunities for reducing green-
22 house gas emissions and other air emissions; and

23 “(6) promote sustainable manufacturing prac-
24 tices for small- and medium-sized manufacturers.

1 “(d) OUTREACH.—The Secretary shall provide fund-
2 ing for—

3 “(1) outreach activities by the industrial re-
4 search and assessment centers to inform small- and
5 medium-sized manufacturers of the information,
6 technologies, and services available; and

7 “(2) coordination activities by each industrial
8 research and assessment center to leverage efforts
9 with—

10 “(A) Federal and State efforts;

11 “(B) the efforts of utilities and energy
12 service providers;

13 “(C) the efforts of regional energy effi-
14 ciency organizations; and

15 “(D) the efforts of other industrial re-
16 search and assessment centers.

17 “(e) CENTERS OF EXCELLENCE.—

18 “(1) ESTABLISHMENT.—The Secretary shall es-
19 tablish a Center of Excellence at not more than 5
20 of the highest-performing industrial research and as-
21 sessment centers, as determined by the Secretary.

22 “(2) DUTIES.—A Center of Excellence shall co-
23 ordinate with and advise the industrial research and
24 assessment centers located in the region of the Cen-
25 ter of Excellence, including—

1 “(A) by mentoring new directors and staff
2 of the industrial research and assessment cen-
3 ters with respect to—

4 “(i) the availability of resources; and

5 “(ii) best practices for carrying out
6 assessments, including through the partici-
7 pation of the staff of the Center of Excel-
8 lence in assessments carried out by new in-
9 dustrial research and assessment centers;

10 “(B) by providing training to staff and
11 students at the industrial research and assess-
12 ment centers on new technologies, practices,
13 and tools to expand the scope and impact of the
14 assessments carried out by the centers;

15 “(C) by assisting the industrial research
16 and assessment centers with specialized tech-
17 nical opportunities, including by providing a
18 clearinghouse of available expertise and tools to
19 assist the centers and clients of the centers in
20 assessing and implementing those opportunities;

21 “(D) by identifying and coordinating with
22 regional, State, local, and utility energy effi-
23 ciency programs for the purpose of facilitating
24 efforts by industrial research and assessment
25 centers to connect industrial facilities receiving

1 assessments from those centers with regional,
2 State, local, and utility energy efficiency pro-
3 grams that could aid the industrial facilities in
4 implementing any recommendations resulting
5 from the assessments;

6 “(E) by facilitating coordination between
7 the industrial research and assessment centers
8 and other Federal programs described in para-
9 graphs (1) through (3) of subsection (c); and

10 “(F) by coordinating the outreach activi-
11 ties of the industrial research and assessment
12 centers under subsection (d)(1).

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

18 “(f) EXPANSION OF INDUSTRIAL RESEARCH AND AS-
19 SESSMENT CENTERS.—

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

24 “(2) PURPOSE.—

1 “(A) IN GENERAL.—Subject to subpara-
2 graph (B), to the maximum extent practicable,
3 an industrial research and assessment center
4 established under paragraph (1) shall have the
5 same purpose as an institution of higher edu-
6 cation-based industrial research center that is
7 funded by the Secretary under subsection
8 (b)(1).

9 “(B) CONSIDERATION OF CAPABILITIES.—
10 In evaluating or establishing the purpose of an
11 industrial research and assessment center es-
12 tablished under paragraph (1), the Secretary
13 shall take into consideration the varying capa-
14 bilities of trade schools, community colleges,
15 and union training programs.

16 “(g) WORKFORCE TRAINING.—

17 “(1) INTERNSHIPS.—The Secretary shall pay
18 the Federal share of associated internship programs
19 under which students work with or for industries,
20 manufacturers, and energy service providers to im-
21 plement the recommendations of industrial research
22 and assessment centers.

23 “(2) APPRENTICESHIPS.—The Secretary shall
24 pay the Federal share of associated apprenticeship
25 programs under which—

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

5 “(B) employees of facilities that have re-
6 ceived an assessment from an industrial re-
7 search and assessment center work with or for
8 an industrial research and assessment center to
9 gain knowledge on engineering practices and
10 processes to improve productivity and energy
11 savings.

12 “(3) FEDERAL SHARE.—The Federal share of
13 the cost of carrying out internship programs de-
14 scribed in paragraph (1) and apprenticeship pro-
15 grams described in paragraph (2) shall be 50 per-
16 cent.

17 “(h) SMALL BUSINESS LOANS.—The Administrator
18 of the Small Business Administration shall, to the max-
19 imum extent practicable, expedite consideration of applica-
20 tions from eligible small business concerns for loans under
21 the Small Business Act (15 U.S.C. 631 et seq.) to imple-
22 ment recommendations developed by the industrial re-
23 search and assessment centers.

24 “(i) FUNDING.—There is authorized to be appro-
25 priated to the Secretary to carry out this section

1 \$30,000,000 for each fiscal year, to remain available until
2 expended.”.

3 (c) CLERICAL AMENDMENT.—The table of contents
4 of the Energy Independence and Security Act of 2007 (42
5 U.S.C. prec. 17001) is amended by adding at the end of
6 the items relating to subtitle D of title IV the following:

“Sec. 454. Industrial research and assessment centers.”.

7 **SEC. 1023. CHP TECHNICAL ASSISTANCE PARTNERSHIP**
8 **PROGRAM.**

9 (a) IN GENERAL.—Section 375 of the Energy Policy
10 and Conservation Act (42 U.S.C. 6345) is amended to
11 read as follows:

12 **“SEC. 375. CHP TECHNICAL ASSISTANCE PARTNERSHIP**
13 **PROGRAM.**

14 “(a) RENAMING.—

15 “(1) IN GENERAL.—The Clean Energy Applica-
16 tion Centers of the Department of Energy are reded-
17 icated as the CHP Technical Assistance Partner-
18 ship Program (referred to in this section as the
19 ‘Program’).

20 “(2) PROGRAM DESCRIPTION.—The Program
21 shall consist of—

22 “(A) the 10 regional CHP Technical As-
23 sistance Partnerships in existence on the date
24 of enactment of the American Energy Innova-
25 tion Act of 2020;

1 “(B) any other regional CHP Technical
2 Assistance Partnerships as the Secretary may
3 establish; and

4 “(C) any supporting technical activities
5 under the Technical Partnership Program of
6 the Advanced Manufacturing Office of the De-
7 partment of Energy.

8 “(3) REFERENCES.—Any reference in any law,
9 rule, regulation, or publication to a Combined Heat
10 and Power Application Center or a Clean Energy
11 Application Center shall be deemed to be a reference
12 to the Program.

13 “(b) CHP TECHNICAL ASSISTANCE PARTNERSHIP
14 PROGRAM.—

15 “(1) IN GENERAL.—The Program shall—

16 “(A) operate programs to encourage de-
17 ployment of combined heat and power, waste
18 heat to power, and efficient district energy (col-
19 lectively referred to in this subsection as ‘CHP’)
20 technologies by providing education and out-
21 reach—

22 “(i) to building, industrial, and elec-
23 tric and natural gas utility professionals;

24 “(ii) to State and local policymakers;
25 and

1 “(iii) to other individuals and organi-
2 zations with an interest in efficient energy
3 use, local or opportunity fuel use, resil-
4 iency, energy security, microgrids, and dis-
5 trict energy; and

6 “(B) provide project-specific support to
7 building and industrial professionals through
8 economic and engineering assessments and ad-
9 visory activities.

10 “(2) FUNDING FOR CERTAIN ACTIVITIES.—

11 “(A) IN GENERAL.—The Program shall
12 make funds available to institutions of higher
13 education, research centers, and other appro-
14 priate institutions to ensure the continued oper-
15 ation and effectiveness of regional CHP Tech-
16 nical Assistance Partnerships.

17 “(B) USE OF FUNDS.—Funds made avail-
18 able under subparagraph (A) may be used—

19 “(i) to research, develop, and dis-
20 tribute informational materials relevant to
21 manufacturers, commercial buildings, insti-
22 tutional facilities, and Federal sites;

23 “(ii) to support the mission goals of
24 the Department of Defense relating to
25 CHP and microgrid technologies;

1 “(iii) to continuously maintain and
2 update—

3 “(I) the CHP installation data-
4 base;

5 “(II) CHP technology potential
6 analyses;

7 “(III) State CHP resource
8 websites; and

9 “(IV) CHP Technical Assistance
10 Partnerships websites;

11 “(iv) to research, develop, and con-
12 duct workshops, reports, seminars, internet
13 programs, CHP resiliency resources, and
14 other activities to provide education to end
15 users, regulators, and stakeholders in a
16 manner that leads to the deployment of
17 CHP technologies;

18 “(v) to provide or coordinate onsite
19 assessments for sites and enterprises that
20 may consider deployment of CHP tech-
21 nology;

22 “(vi) to identify candidates for deploy-
23 ment of CHP technologies, hybrid renew-
24 able-CHP technologies, microgrids, and
25 clean energy;

1 “(vii) to provide nonbiased engineer-
2 ing support to sites considering deployment
3 of CHP technologies;

4 “(viii) to assist organizations devel-
5 oping clean energy technologies and poli-
6 cies in overcoming barriers to deployment;
7 and

8 “(ix) to assist with field validation
9 and performance evaluations of CHP and
10 other clean energy technologies imple-
11 mented.

12 “(C) DURATION.—The Program shall
13 make funds available under subparagraph (A)
14 for a period of 5 years.

15 “(c) AUTHORIZATION OF APPROPRIATIONS.—There
16 is authorized to be appropriated to carry out this section
17 \$12,000,000 for each of fiscal years 2021 through 2025.”.

18 (b) CONFORMING AMENDMENT.—Section 372(g) of
19 the Energy Policy and Conservation Act (42 U.S.C.
20 6342(g)) is amended by striking “Clean Energy Applica-
21 tions Center operated by the Secretary of Energy” and
22 inserting “regional CHP Technical Assistance Partner-
23 ships”.

24 (c) CLERICAL AMENDMENT.—The table of contents
25 of the Energy Policy and Conservation Act (Public Law

1 94–163; 89 Stat. 872; 92 Stat. 3272) is amended by strik-
2 ing the item relating to section 375 and inserting the fol-
3 lowing:

“Sec. 375. CHP Technical Assistance Partnership Program.”.

4 **SEC. 1024. SUSTAINABLE MANUFACTURING INITIATIVE.**

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

8 **“SEC. 376. SUSTAINABLE MANUFACTURING INITIATIVE.**

9 “(a) IN GENERAL.—As part of the Office of Energy
10 Efficiency and Renewable Energy of the Department of
11 Energy, the Secretary, on the request of a manufacturer,
12 shall carry out onsite technical assessments to identify op-
13 portunities for—

14 “(1) maximizing the energy efficiency of indus-
15 trial processes and cross-cutting systems;

16 “(2) preventing pollution and minimizing waste;

17 “(3) improving efficient use of water in manu-
18 facturing processes;

19 “(4) conserving natural resources; and

20 “(5) achieving such other goals as the Secretary
21 determines to be appropriate.

22 “(b) COORDINATION.—To implement any rec-
23 ommendations resulting from an onsite technical assess-
24 ment carried out under subsection (a) and to accelerate
25 the adoption of new and existing technologies and proc-

1 esses that improve energy efficiency, the Secretary shall
2 coordinate with—

3 “(1) the Advanced Manufacturing Office of the
4 Department of Energy;

5 “(2) the Building Technologies Office of the
6 Department of Energy;

7 “(3) the Federal Energy Management Program
8 of the Department of Energy; and

9 “(4) the private sector and other appropriate
10 agencies, including the National Institute of Stand-
11 ards and Technology.

12 “(c) RESEARCH AND DEVELOPMENT PROGRAM FOR
13 SUSTAINABLE MANUFACTURING AND INDUSTRIAL TECH-
14 NOLOGIES AND PROCESSES.—As part of the industrial ef-
15 ficiency programs of the Department of Energy, the Sec-
16 retary shall carry out a joint industry-government partner-
17 ship program to research, develop, and demonstrate new
18 sustainable manufacturing and industrial technologies and
19 processes that maximize the energy efficiency of industrial
20 plants, reduce pollution, and conserve natural resources.”.

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

“Sec. 376. Sustainable manufacturing initiative.”.

1 **SEC. 1025. CONFORMING AMENDMENTS.**

2 (a) Section 106 of the Energy Policy Act of 2005 (42
3 U.S.C. 15811) is repealed.

4 (b) Sections 131, 132, 133, 2103, and 2107 of the
5 Energy Policy Act of 1992 (42 U.S.C. 6348, 6349, 6350,
6 13453, 13456) are repealed.

7 (c) Section 2101(a) of the Energy Policy Act of 1992
8 (42 U.S.C. 13451(a)) is amended in the third sentence
9 by striking “sections 2102, 2103, 2104, 2105, 2106,
10 2107, and 2108” and inserting “sections 2102, 2104,
11 2105, 2106, and 2108 of this Act and section 376 of the
12 Energy Policy and Conservation Act,”.

13 **Subpart C—Federal Agency Energy Efficiency**

14 **SEC. 1031. ENERGY AND WATER PERFORMANCE REQUIRE-**
15 **MENTS FOR FEDERAL BUILDINGS.**

16 (a) IN GENERAL.—Section 543 of the National En-
17 ergy Conservation Policy Act (42 U.S.C. 8253) is amend-
18 ed—

19 (1) in the section heading, by inserting “**AND**
20 **WATER**” after “**ENERGY**”;

21 (2) by striking subsection (a) and inserting the
22 following:

23 “(a) ENERGY AND WATER PERFORMANCE REQUIRE-
24 MENTS FOR FEDERAL BUILDINGS.—

25 “(1) ENERGY REQUIREMENTS.—Subject to
26 paragraph (3), to the maximum extent life cycle

1 cost-effective (as defined in subsection (f)(1)), each
 2 agency shall apply energy conservation measures to,
 3 and shall improve the design for the construction of,
 4 the Federal buildings of the agency (including each
 5 industrial or laboratory facility) so that the energy
 6 consumption per gross square foot of the Federal
 7 buildings of the agency in fiscal years 2021 through
 8 2028 is reduced, as compared with the energy con-
 9 sumption per gross square foot of the Federal build-
 10 ings of the agency in fiscal year 2018, by the per-
 11 centage specified in the following table:

“Fiscal Year	Percentage Reduction
2021	2.5
2022	5
2023	7.5
2024	10
2025	12.5
2026	15
2027	17.5
2028	20.

12 “(2) WATER REQUIREMENTS.—Subject to para-
 13 graph (3), the head of each Federal agency shall, for
 14 each of fiscal years 2021 through 2030, improve
 15 water use efficiency and management, including
 16 stormwater management, at facilities of the agency
 17 by reducing agency potable water consumption in-
 18 tensity—

19 “(A) by reducing potable water consump-
 20 tion by 54 percent by fiscal year 2030, relative

1 to the potable water consumption of the agency
2 in fiscal year 2007, through reductions of 2
3 percent each fiscal year (as measured in gallons
4 per gross square foot);

5 “(B) by reducing the industrial, land-
6 scaping, and agricultural water consumption of
7 the agency, as compared to a baseline of that
8 consumption by the agency in fiscal year 2010,
9 through reductions of 2 percent each fiscal year
10 (as measured in gallons); and

11 “(C) by installing appropriate infrastruc-
12 ture features on federally owned property to im-
13 prove stormwater and wastewater management.

14 “(3) ENERGY AND WATER INTENSIVE BUILDING
15 EXCLUSION.—

16 “(A) IN GENERAL.—An agency may ex-
17 clude from the requirements of paragraphs (1)
18 and (2) any building (including the associated
19 energy consumption and gross square footage of
20 the building) in which energy and water inten-
21 sive activities are carried out.

22 “(B) REPORTS.—Each agency shall iden-
23 tify and include in each report under section
24 548(a) each building designated by the agency

1 for exclusion under subparagraph (A) during
2 the period covered by the report.

3 “(4) RECOMMENDATIONS.—Not later than De-
4 cember 31, 2026, the Secretary shall—

5 “(A) review the results of the implementa-
6 tion of the energy and water performance re-
7 quirements established under paragraph (1);

8 “(B) submit to Congress recommendations
9 concerning energy performance requirements
10 for fiscal years 2029 through 2038; and

11 “(C) submit to Congress recommendations
12 concerning water performance requirements for
13 fiscal years 2031 through 2040.”;

14 (3) in subsection (b)—

15 (A) in the subsection heading, by inserting
16 “AND WATER” after “ENERGY”; and

17 (B) by striking paragraphs (1) and (2) and
18 inserting the following:

19 “(1) IN GENERAL.—Each agency shall—

20 “(A) not later than October 1, 2022, to
21 the maximum extent practicable, begin install-
22 ing in Federal buildings owned by the United
23 States all energy and water conservation meas-
24 ures determined by the Secretary to be life cycle

1 cost-effective (as defined in subsection (f)(1));
2 and

3 “(B) complete the installation described in
4 subparagraph (A) as soon as practicable after
5 the date referred to in that subparagraph.

6 “(2) EXPLANATION OF NONCOMPLIANCE.—

7 “(A) IN GENERAL.—If an agency fails to
8 comply with paragraph (1), the agency shall
9 submit to the Secretary, using guidelines devel-
10 oped by the Secretary, an explanation of the
11 reasons for the failure.

12 “(B) REPORT TO CONGRESS.—Not later
13 than October 1, 2021, and every 2 years there-
14 after, the Secretary shall submit to Congress a
15 report that describes any noncompliance by an
16 agency with the requirements of paragraph
17 (1).”;

18 (4) in subsection (c)(1)—

19 (A) in subparagraph (A)—

20 (i) in the matter preceding clause (i),
21 by striking “An agency” and inserting
22 “The head of each agency”; and

23 (ii) by inserting “or water” after “en-
24 ergy” each place it appears; and

1 (B) in subparagraph (B)(i), by inserting

2 “or water” after “energy”;

3 (5) in subsection (d)(2), by inserting “and

4 water” after “energy”;

5 (6) in subsection (e)—

6 (A) in the subsection heading, by inserting

7 “and Water” after “Energy”;

8 (B) in paragraph (1)—

9 (i) in the first sentence—

10 (I) by striking “October 1, 2012”

11 and inserting “October 1, 2022”;

12 (II) by inserting “and water”

13 after “energy”; and

14 (III) by inserting “and water”

15 after “electricity”;

16 (ii) in the second sentence, by insert-

17 ing “and water” after “electricity”; and

18 (iii) in the fourth sentence, by insert-

19 ing “and water” after “energy”;

20 (C) in paragraph (2)—

21 (i) in subparagraph (A)—

22 (I) by striking “and” before

23 “Federal”; and

1 (II) by inserting “and any other
2 person the Secretary deems nec-
3 essary,” before “shall”;

4 (ii) in subparagraph (B)—

5 (I) in clause (i)(II), by inserting
6 “and water” after “energy” each
7 place it appears;

8 (II) in clause (ii), by inserting
9 “and water” after “energy”; and

10 (III) in clause (iv), by inserting
11 “and water” after “energy”; and

12 (iii) by adding at the end the fol-
13 lowing:

14 “(C) UPDATE.—Not later than 180 days
15 after the date of enactment of this subpara-
16 graph, the Secretary shall update the guidelines
17 established under subparagraph (A) to take into
18 account water efficiency requirements under
19 this section.”;

20 (D) in paragraph (3), in the matter pre-
21 ceding subparagraph (A), by striking “estab-
22 lished under paragraph (2)” and inserting “up-
23 dated under paragraph (2)(C)”; and

24 (E) in paragraph (4)—

25 (i) in subparagraph (A)—

1 (I) by striking “this paragraph”
2 and inserting “the American Energy
3 Innovation Act of 2020”; and

4 (II) by inserting “and water” be-
5 fore “use in”; and

6 (ii) in subparagraph (B)(ii), in the
7 matter preceding clause (I), by inserting
8 “and water” after “energy”; and

9 (7) in subsection (f)—

10 (A) in paragraph (1)—

11 (i) by redesignating subparagraphs
12 (E), (F), and (G) as subparagraphs (F),
13 (G), and (H), respectively; and

14 (ii) by inserting after subparagraph
15 (D) the following:

16 “(E) ONGOING COMMISSIONING.—The
17 term ‘ongoing commissioning’ means an ongo-
18 ing process of commissioning using monitored
19 data, the primary goal of which is to ensure
20 continuous optimum performance of a facility,
21 in accordance with design or operating needs,
22 over the useful life of the facility, while meeting
23 facility occupancy requirements.”;

24 (B) in paragraph (2)—

1 (i) in subparagraph (A), by inserting
2 “and water” before “use”;

3 (ii) in subparagraph (B)—

4 (I) by striking “energy” before
5 “efficiency”; and

6 (II) by inserting “or water” be-
7 fore “use”; and

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

10 “(C) ENERGY MANAGEMENT SYSTEM.—An
11 energy manager designated for a facility under
12 subparagraph (A) shall take into consider-
13 ation—

14 “(i) the use of a system to manage
15 energy and water use at the facility; and

16 “(ii) the applicability of the certifi-
17 cation of the facility in accordance with the
18 International Organization for Standard-
19 ization standard numbered 50001 and en-
20 titled ‘Energy Management Systems’.”;

21 (C) by striking paragraphs (3) and (4) and
22 inserting the following:

23 “(3) ENERGY AND WATER EVALUATIONS AND
24 COMMISSIONING.—

1 “(A) EVALUATIONS.—Except as provided
2 in subparagraph (B), not later than the date
3 that is 180 days after the date of enactment of
4 the American Energy Innovation Act of 2020,
5 and annually thereafter, each energy manager
6 shall complete, for the preceding calendar year,
7 a comprehensive energy and water evaluation
8 and recommissioning or retrocommissioning for
9 approximately 25 percent of the facilities of the
10 applicable agency that meet the criteria under
11 paragraph (2)(B) in a manner that ensures
12 that an evaluation of each facility is completed
13 not less frequently than once every 4 years.

14 “(B) EXCEPTIONS.—An evaluation and re-
15 commissioning or retrocommissioning shall not
16 be required under subparagraph (A) with re-
17 spect to a facility that, as of the date on which
18 the evaluation and recommissioning or
19 retrocommissioning would occur—

20 “(i) has had a comprehensive energy
21 and water evaluation during the preceding
22 8-year period;

23 “(ii)(I) has been commissioned, re-
24 commissioned, or retrocommissioned dur-
25 ing the preceding 10-year period; or

1 “(II) is under ongoing commissioning,
2 recommissioning, or retrocommissioning;

3 “(iii) has not had a major change in
4 function or use since the previous evalua-
5 tion and recommissioning or
6 retrocommissioning;

7 “(iv) has been benchmarked with pub-
8 lic disclosure under paragraph (8) during
9 the preceding calendar year; and

10 “(v)(I) based on the benchmarking de-
11 scribed in clause (iv), has achieved at a fa-
12 cility level the most recent cumulative en-
13 ergy savings target under subsection (a)
14 compared to the earlier of—

15 “(aa) the date of the most recent
16 evaluation; or

17 “(bb) the date—

18 “(AA) of the most recent
19 commissioning, recommissioning,
20 or retrocommissioning; or

21 “(BB) on which ongoing
22 commissioning began; or

23 “(II) has a long-term contract in
24 place guaranteeing energy savings at least

1 as great as the energy savings target under
2 subclause (I).

3 “(4) IMPLEMENTATION OF IDENTIFIED ENERGY
4 AND WATER EFFICIENCY MEASURES.—

5 “(A) IN GENERAL.—Not later than 2 years
6 after the date of completion of each evaluation
7 under paragraph (3), each energy manager
8 shall implement any energy- or water-saving
9 measure that—

10 “(i) the Federal agency identified in
11 the evaluation; and

12 “(ii) is life cycle cost-effective, as de-
13 termined by evaluating an individual meas-
14 ure or a bundle of measures with varying
15 paybacks.

16 “(B) PERFORMANCE CONTRACTING.—Each
17 Federal agency shall use performance con-
18 tracting to address at least 50 percent of the
19 measures identified under subparagraph
20 (A)(i).”;

21 (D) in paragraph (7)(B)(ii)(II), by insert-
22 ing “and water” after “energy”; and

23 (E) in paragraph (9)(A), in the matter
24 preceding clause (i), by inserting “and water”
25 after “energy”.

1 (b) CONFORMING AMENDMENT.—The table of con-
2 tents for the National Energy Conservation Policy Act
3 (Public Law 95–619; 92 Stat. 3206) is amended by strik-
4 ing the item relating to section 543 and inserting the fol-
5 lowing:

“Sec. 543. Energy and water management requirements.”.

6 **SEC. 1032. FEDERAL ENERGY MANAGEMENT PROGRAM.**

7 Section 543 of the National Energy Conservation
8 Policy Act (42 U.S.C. 8253) is amended by adding at the
9 end the following:

10 “(h) FEDERAL ENERGY MANAGEMENT PROGRAM.—

11 “(1) IN GENERAL.—The Secretary shall carry
12 out a program, to be known as the ‘Federal Energy
13 Management Program’ (referred to in this sub-
14 section as the ‘Program’), to facilitate the implemen-
15 tation by the Federal Government of cost-effective
16 energy and water management and energy-related
17 investment practices—

18 “(A) to coordinate and strengthen Federal
19 energy and water resilience; and

20 “(B) to promote environmental steward-
21 ship.

22 “(2) PROGRAM ACTIVITIES.—

23 “(A) STRATEGIC PLANNING AND TECH-
24 NICAL ASSISTANCE.—Under the Program, the
25 Federal Director appointed under paragraph

1 (3)(A) (referred to in this subsection as the
2 ‘Federal Director’) shall—

3 “(i) provide technical assistance and
4 project implementation support and guid-
5 ance to Federal agencies to identify, imple-
6 ment, procure, and track energy and water
7 conservation measures required under this
8 Act and under other provisions of law (in-
9 cluding regulations);

10 “(ii) in coordination with the Admin-
11 istrator of the General Services Adminis-
12 tration, establish appropriate procedures,
13 methods, and best practices for use by
14 Federal agencies to select, monitor, and
15 terminate contracts entered into under sec-
16 tion 546 with utilities;

17 “(iii) in coordination with the Federal
18 Acquisition Regulatory Council, establish
19 appropriate procedures, methods, and best
20 practices for use by Federal agencies to se-
21 lect, monitor, and terminate contracts en-
22 tered into under section 801 with energy
23 service contractors and utilities;

24 “(iv) establish and maintain internet-
25 based information resources and project

1 tracking systems and tools for energy and
2 water management;

3 “(v) coordinate comprehensive and
4 strategic approaches to energy and water
5 resilience planning for Federal agencies;
6 and

7 “(vi) establish a recognition program
8 for Federal achievement in energy and
9 water management, energy-related invest-
10 ment practices, environmental stewardship,
11 and other relevant areas, through events
12 such as individual recognition award cere-
13 monies and public announcements.

14 “(B) ENERGY AND WATER MANAGEMENT
15 AND REPORTING.—Under the Program, the
16 Federal Director shall—

17 “(i) track and report on the progress
18 of Federal agencies in meeting the require-
19 ments of the agency under this section;

20 “(ii) make publicly available annual
21 Federal agency performance data required
22 under—

23 “(I) this section and sections 544
24 through 548; and

1 “(II) section 203 of the Energy
2 Policy Act of 2005 (42 U.S.C.
3 15852);

4 “(iii)(I) collect energy and water use
5 and consumption data from each Federal
6 agency; and

7 “(II) based on that data, submit to
8 each Federal agency a report that will fa-
9 cilitate the energy and water management,
10 energy-related investment practices, and
11 environmental stewardship of the agency in
12 support of Federal goals under this Act
13 and under other provisions of law (includ-
14 ing regulations);

15 “(iv)(I) establish new Federal building
16 energy efficiency standards; and

17 “(II) in consultation with the Admin-
18 istrator of the General Services Adminis-
19 tration, acting through the head of the Of-
20 fice of High-Performance Green Buildings,
21 establish and implement Federal building
22 sustainable design principles for Federal
23 facilities;

24 “(v) manage the implementation of
25 Federal building energy efficiency stand-

1 ards established under section 305 of the
2 Energy Conservation and Production Act
3 (42 U.S.C. 6834); and

4 “vi) designate products that meet the
5 highest energy conservation standards for
6 categories not covered under the Energy
7 Star program established under section
8 324A of the Energy Policy and Conserva-
9 tion Act (42 U.S.C. 6294a).

10 “(C) FEDERAL POLICY COORDINATION.—

11 Under the Program, the Federal Director
12 shall—

13 “(i) develop and implement accredited
14 training consistent with existing Federal
15 programs and activities—

16 “(I) relating to energy and water
17 use, management, and resilience in
18 Federal buildings, energy-related in-
19 vestment practices, and environmental
20 stewardship; and

21 “(II) that includes in-person
22 training, internet-based programs,
23 and national in-person training
24 events;

1 “(ii) coordinate and facilitate energy
2 and water management, energy-related in-
3 vestment practices, and environmental
4 stewardship through the Interagency En-
5 ergy Management Task Force established
6 under section 547; and

7 “(iii) report on the implementation of
8 the priorities of the President, including
9 Executive orders, relating to energy and
10 water use in Federal buildings, in coordi-
11 nation with—

12 “(I) the Office of Management
13 and Budget;

14 “(II) the Council on Environ-
15 mental Quality; and

16 “(III) any other entity, as consid-
17 ered necessary by the Federal Direc-
18 tor.

19 “(D) FACILITY AND FLEET OPTIMIZA-
20 TION.—Under the Program, the Federal Direc-
21 tor shall develop guidance, supply assistance to,
22 and track the progress of Federal agencies—

23 “(i) in conducting portfolio-wide facil-
24 ity energy and water resilience planning
25 and project integration;

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

5 “(iii) in developing guidelines for—

6 “(I) building commissioning; and

7 “(II) facility operations and
8 maintenance; and

9 “(iv) in coordination with the Admin-
10 istrator of the General Services Adminis-
11 tration, in meeting statutory and agency
12 goals for Federal fleet vehicles.

13 “(3) FEDERAL DIRECTOR.—

14 “(A) APPOINTMENT.—The Secretary shall
15 appoint an individual to serve as Federal Direc-
16 tor of the Program, which shall be a career po-
17 sition in the Senior Executive service, to man-
18 age the Program and carry out the activities of
19 the Program described in paragraph (2).

20 “(B) DUTIES.—The Federal Director
21 shall—

22 “(i) oversee, manage, and administer
23 the Program;

24 “(ii) provide leadership in energy and
25 water management, energy-related invest-

1 ment practices, and environmental stew-
2 ardship through coordination with Federal
3 agencies and other appropriate entities;
4 and

5 “(iii) establish a management council
6 to advise the Federal Director that shall—

7 “(I) convene not less frequently
8 than once every quarter; and

9 “(II) consist of representatives
10 from—

11 “(aa) the Council on Envi-
12 ronmental Quality;

13 “(bb) the Office of Manage-
14 ment and Budget; and

15 “(cc) the Office of Federal
16 High-Performance Green Build-
17 ings in the General Services Ad-
18 ministration.

19 “(4) SAVINGS CLAUSE.—Nothing in this sub-
20 section impedes, supersedes, or alters the authority
21 of the Secretary to carry out the remainder of this
22 section or section 305 of the Energy Conservation
23 and Production Act (42 U.S.C. 6834).

24 “(5) AUTHORIZATION OF APPROPRIATIONS.—
25 There is authorized to be appropriated to the Sec-

1 retary to carry out this subsection \$36,000,000 for
2 each of fiscal years 2021 through 2031.”.

3 **SEC. 1033. USE OF ENERGY AND WATER EFFICIENCY MEAS-**
4 **URES IN FEDERAL BUILDINGS.**

5 (a) REPORTS.—Section 548(b) of the National En-
6 ergy Conservation Policy Act (42 U.S.C. 8258(b)) is
7 amended—

8 (1) in paragraph (3), by striking “and” at the
9 end;

10 (2) in paragraph (4), by striking the period at
11 the end and inserting “; and”; and

12 (3) by adding at the end the following:

13 “(5)(A) the status of the energy savings per-
14 formance contracts and utility energy service con-
15 tracts of each agency, to the extent that the infor-
16 mation is not duplicative of information provided to
17 the Secretary under a separate authority;

18 “(B) the quantity and investment value of the
19 contracts for the previous year;

20 “(C) the guaranteed energy savings, or for con-
21 tracts without a guarantee, the estimated energy
22 savings, for the previous year, as compared to the
23 measured energy savings for the previous year;

1 “(D) a forecast of the estimated quantity and
2 investment value of contracts anticipated in the fol-
3 lowing year for each agency; and

4 “(E)(i) a comparison of the information de-
5 scribed in subparagraph (B) and the forecast de-
6 scribed in subparagraph (D) in the report of the
7 previous year; and

8 “(ii) if applicable, the reasons for any dif-
9 ferences in the data compared under clause (i).”.

10 (b) DEFINITION OF ENERGY CONSERVATION MEAS-
11 URES.—Section 551(4) of the National Energy Conserva-
12 tion Policy Act (42 U.S.C. 8259(4)) is amended by strik-
13 ing “or retrofit activities” and inserting “retrofit activi-
14 ties, or energy consuming devices and required support
15 structures”.

16 (c) AUTHORITY TO ENTER INTO CONTRACTS.—Sec-
17 tion 801(a)(2)(F) of the National Energy Conservation
18 Policy Act (42 U.S.C. 8287(a)(2)(F)) is amended—

19 (1) in clause (i), by striking “or” at the end;

20 (2) in clause (ii), by striking the period at the
21 end and inserting “; or”; and

22 (3) by adding at the end the following:

23 “(iii) limit the recognition of oper-
24 ation and maintenance savings associated
25 with systems modernized or replaced with

1 the implementation of energy conservation
2 measures, water conservation measures, or
3 any combination of energy conservation
4 measures and water conservation meas-
5 ures.”.

6 (d) MISCELLANEOUS AUTHORITY; EXCLUDED CON-
7 TRACTS.—Section 801(a)(2) of the National Energy Con-
8 servation Policy Act (42 U.S.C. 8287(a)(2)) is amended
9 by adding at the end the following:

10 “(H) MISCELLANEOUS AUTHORITY.—Not-
11 withstanding subtitle I of title 40, United
12 States Code, a Federal agency may accept, re-
13 tain, sell, or transfer, and apply the proceeds of
14 the sale or transfer of, any energy and water
15 incentive, rebate, grid services revenue, or cred-
16 it (including a renewable energy certificate) to
17 fund a contract under this title.

18 “(I) EXCLUDED CONTRACTS.—A contract
19 entered into under this title may not be for
20 work performed—

21 “(i) at a Federal hydroelectric facility
22 that provides power marketed by a Power
23 Marketing Administration; or

24 “(ii) at a hydroelectric facility owned
25 and operated by the Tennessee Valley Au-

1 thority established under the Tennessee
2 Valley Authority Act of 1933 (16 U.S.C.
3 831 et seq.).”.

4 (e) PAYMENT OF COSTS.—Section 802 of the Na-
5 tional Energy Conservation Policy Act (42 U.S.C. 8287a)
6 is amended by striking “(and related operation and main-
7 tenance expenses)” and inserting “, including related op-
8 erations and maintenance expenses”.

9 (f) DEFINITION OF ENERGY SAVINGS.—Section
10 804(2) of the National Energy Conservation Policy Act
11 (42 U.S.C. 8287c(2)) is amended—

12 (1) in subparagraph (A), by striking “federally
13 owned building or buildings or other federally owned
14 facilities” and inserting “Federal building (as de-
15 fined in section 551)” each place it appears;

16 (2) in subparagraph (C), by striking “; and”
17 and inserting a semicolon;

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

20 (4) by adding at the end the following:

21 “(E) the use, sale, or transfer of any en-
22 ergy and water incentive, rebate, grid services
23 revenue, or credit (including a renewable energy
24 certificate); and

1 “(F) any revenue generated from a reduc-
2 tion in energy or water use, more efficient
3 waste recycling, or additional energy generated
4 from more efficient equipment.”.

5 **SEC. 1034. FEDERAL BUILDING ENERGY EFFICIENCY PER-**
6 **FORMANCE STANDARDS; CERTIFICATION**
7 **SYSTEM AND LEVEL FOR GREEN BUILDINGS.**

8 (a) DEFINITIONS.—Section 303 of the Energy Con-
9 servation and Production Act (42 U.S.C. 6832) is amend-
10 ed—

11 (1) in each of paragraphs (1) through (16), by
12 inserting a paragraph heading, the text of which is
13 comprised of the term defined in that paragraph;

14 (2) by redesignating paragraphs (2) through
15 (16) as paragraphs (3), (4), (6), (7), (8), (10), (12),
16 (13), (14), (15), (16), (9), (17), (5), and (2), respec-
17 tively, and moving the paragraphs so as to appear
18 in numerical order; and

19 (3) by inserting after paragraph (10) (as so re-
20 designated) the following:

21 “(11) MAJOR RENOVATION.—The term ‘major
22 renovation’ means a modification of the energy sys-
23 tems of a building that is sufficiently extensive to
24 ensure that the entire building can achieve compli-

1 ance with applicable energy standards for new build-
2 ings, as established by the Secretary.”.

3 (b) FEDERAL BUILDING EFFICIENCY STANDARDS.—

4 Section 305 of the Energy Conservation and Production
5 Act (42 U.S.C. 6834) is amended—

6 (1) in subsection (a)—

7 (A) in paragraph (2)(A), by striking “the
8 2004 International Energy Conservation Code
9 (in the case of residential buildings) or
10 ASHRAE Standard 90.1–2004 (in the case of
11 commercial buildings)” and inserting “the most
12 recently published edition of the International
13 Energy Conservation Code (in the case of resi-
14 dential buildings) or ASHRAE Standard 90.1
15 (in the case of commercial buildings) on the
16 date of enactment of the American Energy In-
17 novation Act of 2020”; and

18 (B) in paragraph (3)—

19 (i) by striking “(3)(A) Not later
20 than” and all that follows through sub-
21 paragraph (B) and inserting the following:

22 “(3) REVISED FEDERAL BUILDING ENERGY EF-
23 FICIENCY PERFORMANCE STANDARDS; CERTIFI-
24 CATION FOR GREEN BUILDINGS.—

1 “(A) REVISED FEDERAL BUILDING EN-
2 ERGY EFFICIENCY PERFORMANCE STAND-
3 ARDS.—

4 “(i) IN GENERAL.—Not later than 1
5 year after the date of enactment of the
6 American Energy Innovation Act of 2020,
7 the Secretary shall establish, by regulation,
8 revised Federal building energy efficiency
9 performance standards that require that—

10 “(I) subject to clause (ii), new
11 Federal buildings and Federal build-
12 ings with major renovations—

13 “(aa) meet or exceed the
14 most recently published version
15 of the International Energy Con-
16 servation Code (in the case of
17 residential buildings) or
18 ASHRAE Standard 90.1 (in the
19 case of commercial buildings) as
20 of the date of enactment of the
21 American Energy Innovation Act
22 of 2020; and

23 “(bb) meet or exceed the en-
24 ergy provisions of the State and
25 local building codes applicable to

1 the building if the codes are more
2 stringent than the most recently
3 published version of the Inter-
4 national Energy Conservation
5 Code or ASHRAE Standard 90.1
6 as of the date of enactment of
7 the American Energy Innovation
8 Act of 2020, as applicable;

9 “(II) unless demonstrated not to
10 be life cycle cost-effective for new
11 Federal buildings and Federal build-
12 ings with major renovations—

13 “(aa) the buildings shall be
14 designed to achieve energy con-
15 sumption levels that are not less
16 than 30 percent below the levels
17 established in the most recently
18 published version of the Inter-
19 national Energy Conservation
20 Code or the ASHRAE Standard,
21 as of the date of enactment of
22 the American Energy Innovation
23 Act of 2020, as appropriate, un-
24 less the Secretary determines,
25 pursuant to subparagraph (B),

1 that a subsequent version of such
2 a standard or code shall apply;
3 and

4 “(bb) sustainable design
5 principles are applied to the loca-
6 tion, siting, design, and construc-
7 tion of all new Federal buildings
8 and replacement Federal build-
9 ings;

10 “(III) if water is used to achieve
11 energy efficiency, water conservation
12 technologies shall be applied to the ex-
13 tent that the technologies are life-
14 cycle cost effective; and

15 “(IV) if life-cycle cost effective,
16 as compared to other reasonably avail-
17 able technologies, not less than 30
18 percent of the hot water demand for
19 each new Federal building or Federal
20 building undergoing a major renova-
21 tion be met through the installation
22 and use of solar hot water heaters.

23 “(ii) EXCEPTION.—Clause (i)(I) shall
24 not apply to the unaltered portions of Fed-

1 eral buildings and systems that have un-
2 dergone major renovations.

3 “(B) UPDATES.—Not later than 1 year
4 after the date of approval of each subsequent
5 revision of the ASHRAE Standard or the Inter-
6 national Energy Conservation Code, as appro-
7 priate, the Secretary shall determine whether
8 the revised standards established under sub-
9 clauses (I) and (II) of subparagraph (A)(i)
10 should be updated to reflect the revisions, based
11 on the energy savings and life cycle cost-effec-
12 tiveness of the revisions.”;

13 (ii) in subparagraph (C)—

14 (I) by striking “(C) In the budg-
15 et request” and inserting the fol-
16 lowing:

17 “(C) BUDGET REQUEST.—In the budget
18 request”; and

19 (II) by indenting clauses (i) and

20 (ii) appropriately; and

21 (iii) by striking subparagraph (D) and
22 inserting the following:

23 “(D) CERTIFICATION FOR GREEN BUILD-
24 INGS.—

1 “(i) SUSTAINABLE DESIGN PRIN-
2 CIPLES.—Sustainable design principles
3 shall be applied to the siting, design, and
4 construction of buildings covered by this
5 subparagraph.

6 “(ii) SELECTION OF CERTIFICATION
7 SYSTEMS.—The Secretary, after reviewing
8 the findings of the Federal Director under
9 section 436(h) of the Energy Independence
10 and Security Act of 2007 (42 U.S.C.
11 17092(h)), in consultation with the Admin-
12 istrator of General Services, and in con-
13 sultation with the Secretary of Defense re-
14 lating to those facilities under the custody
15 and control of the Department of Defense,
16 shall determine those certification systems
17 for green commercial and residential build-
18 ings that the Secretary determines to be
19 the most likely to encourage a comprehen-
20 sive and environmentally sound approach
21 to certification of green buildings.

22 “(iii) BASIS FOR SELECTION.—The
23 determination of the certification systems
24 under clause (ii) shall be based on ongoing
25 review of the findings of the Federal Direc-

1 “(cc) as practicable, give
2 preference to performance stand-
3 ards instead of prescriptive meas-
4 ures; and

5 “(dd) reward continual im-
6 provements in the lifecycle man-
7 agement of health, safety, and
8 environmental risks and impacts.

9 “(v) CONSIDERATIONS.—In deter-
10 mining the green building certification sys-
11 tems under this subparagraph, the Sec-
12 retary shall take into consideration—

13 “(I) the ability and availability of
14 assessors and auditors to independ-
15 ently verify the criteria and measure-
16 ment of metrics at the scale necessary
17 to implement this subparagraph;

18 “(II) the ability of the applicable
19 certification organization to collect
20 and reflect public comment;

21 “(III) the ability of the standard
22 to be developed and revised through a
23 consensus-based process;

24 “(IV) an evaluation of the
25 robustness of the criteria for a high-

1 performance green building, which
2 shall give credit for promoting—

3 “(aa) efficient and sustain-
4 able use of water, energy, and
5 other natural resources;

6 “(bb) use of renewable en-
7 ergy sources;

8 “(cc) improved indoor envi-
9 ronmental quality through en-
10 hanced indoor air quality, ther-
11 mal comfort, acoustics, day light-
12 ing, pollutant source control, and
13 use of low-emission materials and
14 building system controls;

15 “(dd)(AA) the sourcing of
16 grown, harvested, or mined mate-
17 rials; and

18 “(BB) certifications of re-
19 sponsible sourcing, such as cer-
20 tifications provided by the Forest
21 Stewardship Council, the Sus-
22 tainable Forestry Initiative, the
23 American Tree Farm System, or
24 the Programme for the Endorse-
25 ment of Forest Certification; and

1 “(ee) such other criteria as
2 the Secretary determines to be
3 appropriate; and

4 “(V) national recognition within
5 the building industry.

6 “(vi) REVIEW.—The Secretary, in
7 consultation with the Administrator of
8 General Services and the Secretary of De-
9 fense, shall conduct an ongoing review to
10 evaluate and compare private sector green
11 building certification systems, taking into
12 account—

13 “(I) the criteria described in
14 clause (v); and

15 “(II) the identification made by
16 the Federal Director under section
17 436(h) of the Energy Independence
18 and Security Act of 2007 (42 U.S.C.
19 17092(h)).

20 “(vii) EXCLUSIONS.—

21 “(I) IN GENERAL.—Subject to
22 subclause (II), if a certification sys-
23 tem fails to meet the review require-
24 ments of clause (v), the Secretary
25 shall—

1 “(aa) identify the portions
2 of the system, whether pre-
3 requisites, credits, points, or oth-
4 erwise, that meet the review cri-
5 teria of clause (v);

6 “(bb) determine the portions
7 of the system that are suitable
8 for use; and

9 “(cc) exclude all other por-
10 tions of the system from identi-
11 fication and use.

12 “(II) ENTIRE SYSTEMS.—The
13 Secretary shall exclude an entire sys-
14 tem from use if an exclusion under
15 subclause (I)—

16 “(aa) impedes the integrated
17 use of the system;

18 “(bb) creates disparate re-
19 view criteria or unequal point ac-
20 cess for competing materials; or

21 “(cc) increases agency costs
22 of the use.

23 “(viii) INTERNAL CERTIFICATION
24 PROCESSES.—The Secretary may by rule
25 allow Federal agencies to develop internal

1 certification processes, using certified pro-
2 fessionals, in lieu of certification by certifi-
3 cation entities identified under clause (ii).

4 “(ix) PRIVATIZED MILITARY HOUS-
5 ING.—With respect to privatized military
6 housing, the Secretary of Defense, after
7 consultation with the Secretary may,
8 through rulemaking, develop alternative
9 certification systems and levels than the
10 systems and levels identified under clause
11 (ii) that achieve an equivalent result in
12 terms of energy savings, sustainable de-
13 sign, and green building performance.

14 “(x) WATER CONSERVATION TECH-
15 NOLOGIES.—In addition to any use of
16 water conservation technologies otherwise
17 required by this section, water conservation
18 technologies shall be applied to the extent
19 that the technologies are life-cycle cost-ef-
20 fective.

21 “(xi) EFFECTIVE DATE.—

22 “(I) DETERMINATIONS MADE
23 AFTER DECEMBER 31, 2020.—This
24 subparagraph shall apply to any de-

1 termination made by a Federal agency
2 after December 31, 2020.

3 “(II) DETERMINATIONS MADE ON
4 OR BEFORE DECEMBER 31, 2020.—
5 This subparagraph (as in effect on the
6 day before the date of enactment of
7 the American Energy Innovation Act
8 of 2020) shall apply to any use of a
9 certification system for green commer-
10 cial and residential buildings by a
11 Federal agency on or before December
12 31, 2020.”; and

13 (2) by striking subsections (c) and (d) and in-
14 serting the following:

15 “(c) PERIODIC REVIEW.—The Secretary shall—

16 “(1) once every 5 years, review the Federal
17 building energy standards established under this sec-
18 tion; and

19 “(2) on completion of a review under paragraph
20 (1), if the Secretary determines that significant en-
21 ergy savings would result, upgrade the standards to
22 include all new energy efficiency and renewable en-
23 ergy measures that are technologically feasible and
24 economically justified.”.

1 (c) FEDERAL COMPLIANCE.—Section 306 of the En-
2 ergy Conservation and Production Act (42 U.S.C. 6835)
3 is amended—

4 (1) in subsection (a)—

5 (A) in paragraph (1)—

6 (i) by striking “(1) The head” and in-
7 serting the following:

8 “(1) IN GENERAL.—The head”; and

9 (ii) by striking “assure that new Fed-
10 eral buildings” and inserting “ensure that
11 new Federal buildings and Federal build-
12 ings with major renovations”; and

13 (B) in paragraph (2)—

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

16 “(B) PROCEDURES.—The Architect of the
17 Capitol shall adopt procedures necessary to en-
18 sure that the buildings referred to in subpara-
19 graph (A) meet or exceed the standards de-
20 scribed in that subparagraph.”; and

21 (ii) in the first sentence—

22 (I) by inserting “and Federal
23 buildings with major renovations”
24 after “new buildings”; and

1 (II) by striking “(2) The Fed-
2 eral” and inserting the following:

3 “(2) APPLICABILITY.—

4 “(A) IN GENERAL.—The Federal”; and
5 (2) in subsection (b)—

6 (A) by striking the subsection heading and
7 inserting “EXPENDITURES”; and

8 (B) by striking “new Federal building”
9 and all that follows through the period at the
10 end and inserting “new Federal building or a
11 Federal building with major renovations.”.

12 **SEC. 1035. ENERGY-EFFICIENT AND ENERGY-SAVING IN-**
13 **FORMATION TECHNOLOGIES.**

14 Section 543 of the National Energy Conservation
15 Policy Act (42 U.S.C. 8253) (as amended by section 1032)
16 is amended by adding at the end the following:

17 “(i) FEDERAL IMPLEMENTATION STRATEGY FOR EN-
18 ERGY-EFFICIENT AND ENERGY-SAVING INFORMATION
19 TECHNOLOGIES.—

20 “(1) DEFINITIONS.—In this subsection:

21 “(A) DIRECTOR.—The term ‘Director’
22 means the Director of the Office of Manage-
23 ment and Budget.

24 “(B) INFORMATION TECHNOLOGY.—The
25 term ‘information technology’ has the meaning

1 given that term in section 11101 of title 40,
2 United States Code.

3 “(2) DEVELOPMENT OF IMPLEMENTATION
4 STRATEGY.—Not later than 1 year after the date of
5 enactment of the American Energy Innovation Act
6 of 2020, each Federal agency shall coordinate with
7 the Director, the Secretary, and the Administrator
8 of the Environmental Protection Agency to develop
9 an implementation strategy (including best-practices
10 and measurement and verification techniques) for
11 the maintenance, purchase, and use by the Federal
12 agency of energy-efficient and energy-saving infor-
13 mation technologies at or for facilities owned and
14 operated by the Federal agency, taking into consid-
15 eration the performance goals established under
16 paragraph (4).

17 “(3) ADMINISTRATION.—In developing an im-
18 plementation strategy under paragraph (2), each
19 Federal agency shall consider—

20 “(A) advanced metering infrastructure;

21 “(B) energy efficient data center strategies
22 and methods of increasing asset and infrastruc-
23 ture utilization;

24 “(C) advanced power management tools;

1 “(D) building information modeling, in-
2 cluding building energy management;

3 “(E) secure telework and travel substi-
4 tution tools; and

5 “(F) mechanisms to ensure that the agen-
6 cy realizes the energy cost savings of increased
7 efficiency and utilization.

8 “(4) PERFORMANCE GOALS.—

9 “(A) IN GENERAL.—Not later than 180
10 days after the date of enactment of the Amer-
11 ican Energy Innovation Act of 2020, the Direc-
12 tor, in consultation with the Secretary, shall es-
13 tablish performance goals for evaluating the ef-
14 forts of Federal agencies in improving the
15 maintenance, purchase, and use of energy-effi-
16 cient and energy-saving information technology
17 at or for facilities owned and operated by the
18 Federal agencies.

19 “(B) BEST PRACTICES.—The Chief Infor-
20 mation Officers Council established under sec-
21 tion 3603 of title 44, United States Code, shall
22 recommend best practices for the attainment of
23 the performance goals established under sub-
24 paragraph (A), which shall include, to the ex-

1 tent applicable by law, consideration by a Fed-
2 eral agency of the use of—

3 “(i) energy savings performance con-
4 tracting; and

5 “(ii) utility energy services con-
6 tracting.

7 “(5) REPORTS.—

8 “(A) AGENCY REPORTS.—Each Federal
9 agency shall include in the report of the agency
10 under section 527 of the Energy Independence
11 and Security Act of 2007 (42 U.S.C. 17143) a
12 description of the efforts and results of the
13 agency under this subsection.

14 “(B) OMB GOVERNMENT EFFICIENCY RE-
15 PORTS AND SCORECARDS.—Effective beginning
16 not later than October 1, 2022, the Director
17 shall include in the annual report and scorecard
18 of the Director required under section 528 of
19 the Energy Independence and Security Act of
20 2007 (42 U.S.C. 17144) a description of the ef-
21 forts and results of Federal agencies under this
22 subsection.

23 “(C) USE OF EXISTING REPORTING STRUC-
24 TURES.—The Director may require Federal
25 agencies to submit any information required to

1 be submitted under this subsection though re-
2 porting structures in use as of the date of en-
3 actment of the American Energy Innovation
4 Act of 2020.”.

5 **SEC. 1036. HIGH-PERFORMANCE GREEN FEDERAL BUILD-**
6 **INGS.**

7 Section 436(h) of the Energy Independence and Se-
8 curity Act of 2007 (42 U.S.C. 17092(h)) is amended—

9 (1) in the subsection heading, by striking “SYS-
10 TEM” and inserting “SYSTEMS”;

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

13 “(1) IN GENERAL.—Based on an ongoing re-
14 view, the Federal Director shall identify and shall
15 provide to the Secretary pursuant to section
16 305(a)(3)(D) of the Energy Conservation and Pro-
17 duction Act (42 U.S.C. 6834(a)(3)(D)) a list of
18 those certification systems that the Director identi-
19 fies as the most likely to encourage a comprehensive
20 and environmentally sound approach to certification
21 of green buildings.”; and

22 (3) in paragraph (2)—

23 (A) in the matter preceding subparagraph
24 (A), by striking “system” and inserting “sys-
25 tems”;

1 (B) by striking subparagraph (A) and in-
2 serting the following:

3 “(A) an ongoing review provided to the
4 Secretary pursuant to section 305(a)(3)(D) of
5 the Energy Conservation and Production Act
6 (42 U.S.C. 6834(a)(3)(D)), which shall—

7 “(i) be carried out by the Federal Di-
8 rector to compare and evaluate standards;
9 and

10 “(ii) allow any developer or adminis-
11 trator of a rating system or certification
12 system to be included in the review;”;

13 (C) in subparagraph (E)(v), by striking
14 “and” after the semicolon at the end;

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

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

19 “(G) a finding that, for all credits address-
20 ing the sourcing of grown, harvested, or mined
21 materials, the system rewards the use of prod-
22 ucts that have obtained certifications of respon-
23 sible sourcing, such as certifications provided by
24 the Sustainable Forestry Initiative, the Forest
25 Stewardship Council, the American Tree Farm

1 System, or the Programme for the Endorse-
2 ment of Forest Certification; and

3 “(H) a finding that the system incor-
4 porates life-cycle assessment as a credit path-
5 way.”.

6 **SEC. 1037. ENERGY EFFICIENT DATA CENTERS.**

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

9 (1) in subsection (b)—

10 (A) in paragraph (2)(D)(iv), by striking
11 “determined by the organization” and inserting
12 “proposed by the stakeholders”; and

13 (B) by striking paragraph (3); and

14 (2) by striking subsections (e) through (g) and
15 inserting the following:

16 “(c) STAKEHOLDER INVOLVEMENT.—

17 “(1) IN GENERAL.—The Secretary and the Ad-
18 ministrator shall carry out subsection (b) in collabo-
19 ration with the information technology industry and
20 other key stakeholders, with the goal of producing
21 results that accurately reflect the most relevant and
22 useful information.

23 “(2) CONSIDERATIONS.—In carrying out the
24 collaboration described in paragraph (1), the Sec-

1 retary and the Administrator shall pay particular at-
2 tention to organizations that—

3 “(A) have members with expertise in en-
4 ergy efficiency and in the development, oper-
5 ation, and functionality of data centers, infor-
6 mation technology equipment, and software, in-
7 cluding representatives of hardware manufac-
8 turers, data center operators, and facility man-
9 agers;

10 “(B) obtain and address input from the
11 National Laboratories (as that term is defined
12 in section 2 of the Energy Policy Act of 2005
13 (42 U.S.C. 15801)) or any institution of higher
14 education, research institution, industry asso-
15 ciation, company, or public interest group with
16 applicable expertise;

17 “(C) follow—

18 “(i) commonly accepted procedures
19 for the development of specifications; and

20 “(ii) accredited standards development
21 processes; or

22 “(D) have a mission to promote energy ef-
23 ficiency for data centers and information tech-
24 nology.

1 “(d) MEASUREMENTS AND SPECIFICATIONS.—The
2 Secretary and the Administrator shall consider and assess
3 the adequacy of the specifications, measurements, best
4 practices, and benchmarks described in subsection (b) for
5 use by the Federal Energy Management Program, the En-
6 ergy Star Program, and other efficiency programs of the
7 Department of Energy or the Environmental Protection
8 Agency.

9 “(e) STUDY.—

10 “(1) DEFINITION OF REPORT.—In this sub-
11 section, the term ‘report’ means the report of the
12 Lawrence Berkeley National Laboratory entitled
13 ‘United States Data Center Energy Usage Report’
14 and dated June 2016, which was prepared as an up-
15 date to the ‘Report to Congress on Server and Data
16 Center Energy Efficiency’, published on August 2,
17 2007, pursuant to section 1 of Public Law 109–431
18 (120 Stat. 2920).

19 “(2) STUDY.—Not later than 4 years after the
20 date of enactment of the American Energy Innova-
21 tion Act of 2020, the Secretary, in collaboration with
22 the Administrator, shall make available to the public
23 an update to the report that provides—

24 “(A) a comparison and gap analysis of the
25 estimates and projections contained in the re-

1 port with new data regarding the period from
2 2015 through 2019;

3 “(B) an analysis considering the impact of
4 information technologies, including
5 virtualization and cloud computing, in the pub-
6 lic and private sectors;

7 “(C) an evaluation of the impact of the
8 combination of cloud platforms, mobile devices,
9 social media, and big data on data center en-
10 ergy usage;

11 “(D) an evaluation of water usage in data
12 centers and recommendations for reductions in
13 that water usage; and

14 “(E) updated projections and recommenda-
15 tions for best practices through fiscal year
16 2025.

17 “(f) DATA CENTER ENERGY PRACTITIONER PRO-
18 GRAM.—

19 “(1) IN GENERAL.—The Secretary, in collabo-
20 ration with key stakeholders and the Director of the
21 Office of Management and Budget, shall maintain a
22 data center energy practitioner program that pro-
23 vides for the certification of energy practitioners
24 qualified to evaluate the energy usage and efficiency

1 opportunities in federally owned and operated data
2 centers.

3 “(2) EVALUATIONS.—Each Federal agency
4 shall consider having the data centers of the agency
5 evaluated once every 4 years by energy practitioners
6 certified pursuant to the program, whenever prac-
7 ticable using certified practitioners employed by the
8 agency.

9 “(g) OPEN DATA INITIATIVE.—

10 “(1) IN GENERAL.—The Secretary, in collabo-
11 ration with key stakeholders and the Director of the
12 Office of Management and Budget, shall establish
13 an open data initiative relating to energy usage at
14 federally owned and operated data centers, with the
15 purpose of making the data available and accessible
16 in a manner that encourages further data center in-
17 novation, optimization, and consolidation.

18 “(2) CONSIDERATION.—In establishing the ini-
19 tiative under paragraph (1), the Secretary shall con-
20 sider using the online Data Center Maturity Model.

21 “(h) INTERNATIONAL SPECIFICATIONS AND
22 METRICS.—The Secretary, in collaboration with key
23 stakeholders, shall actively participate in efforts to har-
24 monize global specifications and metrics for data center
25 energy and water efficiency.

1 “(i) DATA CENTER UTILIZATION METRIC.—The Sec-
2 retary, in collaboration with key stakeholders, shall facili-
3 tate in the development of an efficiency metric that meas-
4 ures the energy efficiency of a data center (including
5 equipment and facilities).

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

12 **Subpart D—Rebates and Certifications**

13 **SEC. 1041. THIRD-PARTY CERTIFICATION UNDER ENERGY**
14 **STAR PROGRAM.**

15 Section 324A of the Energy Policy and Conservation
16 Act (42 U.S.C. 6294a) is amended by adding at the end
17 the following:

18 “(e) THIRD-PARTY CERTIFICATION.—

19 “(1) IN GENERAL.—Subject to paragraph (2),
20 not later than 180 days after the date of enactment
21 of this subsection, the Administrator shall revise the
22 certification requirements for the labeling of con-
23 sumer, home, and office electronic products for pro-
24 gram partners that have complied with all require-

1 ments of the Energy Star program for a period of
2 at least 18 months.

3 “(2) ADMINISTRATION.—In the case of a pro-
4 gram partner described in paragraph (1), the new
5 requirements under paragraph (1)—

6 “(A) shall not require third-party certifi-
7 cation for a product to be listed; but

8 “(B) may require that test data and other
9 product information be submitted to facilitate
10 product listing and performance verification for
11 a sample of products.

12 “(3) THIRD PARTIES.—Nothing in this sub-
13 section prevents the Administrator from using third
14 parties in the course of the administration of the
15 Energy Star program.

16 “(4) TERMINATION.—

17 “(A) IN GENERAL.—Subject to subpara-
18 graph (B), an exemption from third-party cer-
19 tification provided to a program partner under
20 paragraph (1) shall terminate if the program
21 partner is found to have violated program re-
22 quirements with respect to at least 2 separate
23 models during a 2-year period.

24 “(B) RESUMPTION.—A termination for a
25 program partner under subparagraph (A) shall

1 cease if the program partner complies with all
2 Energy Star program requirements for a period
3 of at least 3 years.”.

4 **SEC. 1042. EXTENDED PRODUCT SYSTEM REBATE PRO-**
5 **GRAM.**

6 (a) DEFINITIONS.—In this section:

7 (1) ELECTRIC MOTOR.—The term “electric
8 motor” has the meaning given the term in section
9 431.12 of title 10, Code of Federal Regulations (as
10 in effect on the date of enactment of this Act).

11 (2) ELECTRONIC CONTROL.—The term “elec-
12 tronic control” means—

13 (A) a power converter; or

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

16 (3) EXTENDED PRODUCT SYSTEM.—The term
17 “extended product system” means an electric motor
18 and any required associated electronic control and
19 driven load that—

20 (A) offers variable speed or multispeed op-
21 eration;

22 (B) offers partial load control that reduces
23 input energy requirements (as measured in kilo-
24 watt-hours) as compared to identified base lev-
25 els set by the Secretary; and

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

2 (ii) uses an extended product system tech-

3 nology, as determined by the Secretary.

4 (4) QUALIFIED EXTENDED PRODUCT SYS-

5 TEM.—

6 (A) IN GENERAL.—The term “qualified ex-

7 tended product system” means an extended

8 product system that—

9 (i) includes an electric motor and an

10 electronic control; and

11 (ii) reduces the input energy (as

12 measured in kilowatt-hours) required to

13 operate the extended product system by

14 not less than 5 percent, as compared to

15 identified base levels set by the Secretary.

16 (B) INCLUSIONS.—The term “qualified ex-

17 tended product system” includes commercial or

18 industrial machinery or equipment that—

19 (i)(I) did not previously make use of

20 the extended product system prior to the

21 redesign described in subclause (II); and

22 (II) incorporates an extended product

23 system that has greater than 1 horsepower

24 into redesigned machinery or equipment;

25 and

1 (ii) was previously used prior to, and
2 was placed back into service during, cal-
3 endar year 2021 or 2022.

4 (b) ESTABLISHMENT.—Not later than 180 days after
5 the date of enactment of this Act, the Secretary shall es-
6 tablish a program to provide rebates for expenditures
7 made by qualified entities for the purchase or installation
8 of a qualified extended product system.

9 (c) QUALIFIED ENTITIES.—

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

12 (A) in the case of a qualified extended
13 product system described in subsection
14 (a)(4)(A), the purchaser of the qualified ex-
15 tended product that is installed; and

16 (B) in the case of a qualified extended
17 product system described in subsection
18 (a)(4)(B), the manufacturer of the commercial
19 or industrial machinery or equipment that in-
20 corporated the extended product system into
21 that machinery or equipment.

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

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

4 (B) a certification that includes dem-
5 onstrated evidence—

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

7 and

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

10 (aa) that the qualified entity in-
11 stalled the qualified extended product
12 system during the 2 fiscal years fol-
13 lowing the date of enactment of this
14 Act;

15 (bb) that the qualified extended
16 product system meets the require-
17 ments of subsection (a)(4)(A); and

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

1 (II) in the case of a qualified entity
2 described in paragraph (1)(B), dem-
3 onstrated evidence—

4 (aa) that the qualified extended
5 product system meets the require-
6 ments of subsection (a)(4)(B); and

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

13 (d) AUTHORIZED AMOUNT OF REBATE.—

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

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

19 (i) the electric motor to which the
20 qualified extended product system is at-
21 tached; and

22 (ii) the electronic control; and

23 (B) \$25.

24 (2) MAXIMUM AGGREGATE AMOUNT.—A quali-
25 fied entity shall not be entitled to aggregate rebates

1 under this section in excess of \$25,000 per calendar
2 year.

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

8 **SEC. 1043. ENERGY EFFICIENT TRANSFORMER REBATE**
9 **PROGRAM.**

10 (a) DEFINITIONS.—In this section:

11 (1) QUALIFIED ENERGY EFFICIENT TRANS-
12 FORMER.—The term “qualified energy efficient
13 transformer” means a transformer that meets or ex-
14 ceeds the applicable energy conservation standards
15 described in the tables in subsection (b)(2) and
16 paragraphs (1) and (2) of subsection (c) of section
17 431.196 of title 10, Code of Federal Regulations (as
18 in effect on the date of enactment of this Act).

19 (2) QUALIFIED ENERGY INEFFICIENT TRANS-
20 FORMER.—The term “qualified energy inefficient
21 transformer” means a transformer with an equal
22 number of phases and capacity to a transformer de-
23 scribed in any of the tables in subsection (b)(2) and
24 paragraphs (1) and (2) of subsection (c) of section
25 431.196 of title 10, Code of Federal Regulations (as

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

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

6 (B)(i) was manufactured between January
7 1, 1987, and December 31, 2008, for a trans-
8 former with an equal number of phases and ca-
9 pacity as a transformer described in the table
10 in subsection (b)(2) of section 431.196 of title
11 10, Code of Federal Regulations (as in effect on
12 the date of enactment of this Act); or

13 (ii) was manufactured between January 1,
14 1992, and December 31, 2011, for a trans-
15 former with an equal number of phases and ca-
16 pacity as a transformer described in the table
17 in paragraph (1) or (2) of subsection (c) of that
18 section (as in effect on the date of enactment
19 of this Act).

20 (3) QUALIFIED ENTITY.—The term “qualified
21 entity” means an owner of industrial or manufac-
22 turing facilities, commercial buildings, or multifamily
23 residential buildings, a utility, or an energy service
24 company that fulfills the requirements of subsection
25 (d).

1 (b) ESTABLISHMENT.—Not later than 90 days after
2 the date of enactment of this Act, the Secretary shall es-
3 tablish a program to provide rebates to qualified entities
4 for expenditures made by the qualified entity for the re-
5 placement of a qualified energy inefficient transformer
6 with a qualified energy efficient transformer.

7 (c) REQUIREMENTS.—To be eligible to receive a re-
8 bate under this section, an entity shall submit to the Sec-
9 retary an application in such form, at such time, and con-
10 taining such information as the Secretary may require, in-
11 cluding demonstrated evidence—

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

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

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

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

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

23 (B) for transformers described in sub-
24 section (a)(2)(B)(i), as selected from a table of

1 default values as determined by the Secretary
2 in consultation with applicable industry; and

3 (5) that the qualified energy inefficient trans-
4 former has been permanently decommissioned and
5 scrapped.

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

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

14 (A) the qualified energy inefficient trans-
15 former; and

16 (B) the qualified energy efficient trans-
17 former; or

18 (2) for a transformer described in subsection
19 (a)(2)(B)(i), the amount determined using a table of
20 default rebate values by rated transformer output,
21 as measured in kilovolt-amperes, as determined by
22 the Secretary in consultation with applicable indus-
23 try.

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

1 \$5,000,000 for each of fiscal years 2021 and 2022, to re-
2 main available until expended.

3 (f) TERMINATION OF EFFECTIVENESS.—The author-
4 ity provided by this section terminates on December 31,
5 2022.

6 **Subpart E—Miscellaneous**

7 **SEC. 1051. ADVANCE APPROPRIATIONS REQUIRED.**

8 The authorization of amounts under this part and the
9 amendments made by this part shall be effective for any
10 fiscal year only to the extent and in the amount provided
11 in advance in appropriations Acts.

12 **PART II—WEATHERIZATION**

13 **SEC. 1101. WEATHERIZATION ASSISTANCE PROGRAM.**

14 (a) DEFINITION OF WEATHERIZATION MATE-
15 RIALS.—Section 412(9)(J) of the Energy Conservation
16 and Production Act (42 U.S.C. 6862(9)(J)) is amended—

17 (1) by inserting “, including renewable energy
18 technologies and other advanced technologies,” after
19 “technologies”; and

20 (2) by striking “Development,” and all that fol-
21 lows through the period at the end and inserting
22 “Development and the Secretary of Agriculture.”.

23 (b) ALLOWANCE FOR HEALTH AND SAFETY BENE-
24 FITS.—Section 413(b) of the Energy Conservation and
25 Production Act (42 U.S.C. 6863(b)) is amended—

1 (1) in paragraph (2)(B), by striking “para-
2 graph (5)” and inserting “paragraph (6)”;

3 (2) in paragraph (3)—

4 (A) in the first sentence, by striking “and
5 with the Director of the Community Services
6 Administration”; and

7 (B) in the first sentence of the undesig-
8 nated matter following subparagraph (C)—

9 (i) by striking “part,” and inserting
10 “part and by”; and

11 (ii) by striking “, and the Director”
12 and all that follows through “1964”;

13 (3) by redesignating paragraphs (5) and (6) as
14 paragraphs (6) and (7), respectively; and

15 (4) by inserting after paragraph (4) the fol-
16 lowing:

17 “(5) In carrying out paragraph (3), the Sec-
18 retary may take into consideration evidence-based
19 values for improvements in the health and safety of
20 occupants of weatherized homes, and other non-en-
21 ergy benefits, as determined by the Secretary.”.

22 (c) CONTRACTOR OPTIMIZATION.—

23 (1) TECHNICAL TRANSFER GRANTS.—Section
24 414B(a)(4) of the Energy Conservation and Produc-
25 tion Act (42 U.S.C. 6864b(a)(4)) is amended—

1 (A) by striking “for persons” and inserting
2 the following: “for—

3 “(A) persons”; and

4 (B) in subparagraph (A) (as so des-
5 igned), by striking the period at the end and
6 inserting the following: “; and

7 “(B) private entities that are contracted to
8 provide weatherization assistance under this
9 part, in accordance with rules determined by
10 the Secretary.”.

11 (2) CONTRACTOR OPTIMIZATION.—The Energy
12 Conservation and Production Act is amended by in-
13 sserting after section 414B (42 U.S.C. 6864b) the
14 following:

15 **“SEC. 414C. CONTRACTOR OPTIMIZATION.**

16 “The Secretary may request that entities receiving
17 funding from the Federal Government or from a State
18 through a weatherization assistance program under sec-
19 tion 413 or 414—

20 “(1) perform periodic reviews of the use of pri-
21 vate contractors in the provision of weatherization
22 assistance, if applicable; and

23 “(2) encourage an increased use and expanded
24 role of contractors as appropriate.”.

1 (3) TABLE OF CONTENTS AMENDMENT.—The
2 table of contents for the Energy Conservation and
3 Production Act (Public Law 94–385; 90 Stat. 1125)
4 is amended by inserting after the item relating to
5 section 414B the following:

“Sec. 414C. Contractor optimization.”.

6 (d) FINANCIAL ASSISTANCE FOR WAP ENHANCE-
7 MENT AND INNOVATION.—

8 (1) IN GENERAL.—The Energy Conservation
9 and Production Act (Public Law 94–385; 90 Stat.
10 1125) is amended by inserting after section 414C
11 (as added by subsection (c)(2)) the following:

12 **“SEC. 414D. FINANCIAL ASSISTANCE FOR WAP ENHANCE-**
13 **MENT AND INNOVATION.**

14 “(a) PURPOSES.—The purposes of this section are—

15 “(1) to expand the number of dwelling units
16 that are occupied by low-income persons that receive
17 weatherization assistance under this section by mak-
18 ing those dwelling units weatherization-ready;

19 “(2) to promote the deployment of renewable
20 energy in dwelling units that are occupied by low-in-
21 come persons;

22 “(3) to ensure healthy indoor environments by
23 enhancing or expanding health and safety measures
24 and resources available to dwellings that are occu-
25 pied by low-income persons;

1 “(4) to disseminate new methods and best prac-
2 tices among eligible entities providing weatherization
3 assistance under this section; and

4 “(5) to encourage eligible entities providing
5 weatherization assistance to hire and retain employ-
6 ees who are individuals—

7 “(A) from the community in which the as-
8 sistance is provided; and

9 “(B) from communities or groups under-
10 represented in the home energy performance
11 workforce.

12 “(b) DEFINITION OF ELIGIBLE ENTITY.—In this sec-
13 tion, the term ‘eligible entity’ means—

14 “(1) an entity receiving funding from the Fed-
15 eral Government or from a State, Tribal, or local
16 government through a weatherization assistance pro-
17 gram under section 413 or 414; and

18 “(2) a nonprofit organization.

19 “(c) FINANCIAL ASSISTANCE AWARDS.—The Sec-
20 retary shall, to the extent funds are made available, award
21 financial assistance on an annual basis through a competi-
22 tive process to an eligible entity—

23 “(1) with respect to dwelling units that are oc-
24 cupied by low-income persons—

1 “(A) to implement measures to make those
2 dwelling units weatherization-ready, including
3 by addressing structural, plumbing, roofing,
4 and electrical issues, environmental hazards,
5 and other issues that the Secretary determines
6 to be appropriate;

7 “(B) to install energy efficiency tech-
8 nologies, including home energy management
9 systems, smart devices, and other technologies
10 the Secretary determines to be appropriate;

11 “(C) to install renewable energy systems
12 (as defined in section 415(c)(6)(A)); and

13 “(D) to implement measures to ensure
14 healthy indoor environments by improving in-
15 door air quality, accessibility, and other healthy
16 home measures, as determined by the Sec-
17 retary;

18 “(2) to improve the capability of the eligible en-
19 tity—

20 “(A) to significantly increase the number
21 of energy retrofits performed by the eligible en-
22 tity;

23 “(B) to replicate best practices for work
24 performed under this section on a larger scale;

1 “(C) to leverage additional funds to sus-
2 tain the provision of weatherization assistance
3 and other work performed under this section
4 after the financial assistance awarded under
5 this section is expended; and

6 “(D) to hire and retain employees de-
7 scribed in subsection (a)(5);

8 “(3) for innovative outreach and education re-
9 garding the benefits and availability of weatheriza-
10 tion assistance and other assistance available under
11 this section;

12 “(4) for quality control of work performed
13 under this section;

14 “(5) for data collection, measurement, and
15 verification with respect to that work;

16 “(6) for program monitoring, oversight, evalua-
17 tion, and reporting of that work;

18 “(7) for labor, training, and technical assist-
19 ance relating to that work;

20 “(8) subject to subsection (g)(2), for planning,
21 management, and administration of that work; and

22 “(9) for any other appropriate activity, as de-
23 termined by the Secretary.

24 “(d) APPLICATIONS.—To be eligible for an award of
25 financial assistance under this section, an eligible entity

1 shall submit to the Secretary an application in such man-
2 ner and containing such information as the Secretary may
3 require.

4 “(e) AWARD FACTORS.—In awarding financial assist-
5 ance under this section, the Secretary shall consider—

6 “(1) the record of the eligible entity, using the
7 most recent year for which data are available, in
8 constructing, renovating, repairing, and making en-
9 ergy efficient single-family, multifamily, or manufac-
10 tured homes that are occupied by low-income per-
11 sons, either directly or through affiliates, chapters,
12 or other partners;

13 “(2) the number of dwelling units occupied by
14 low-income persons that the eligible entity has built,
15 renovated, repaired, weatherized, and made more en-
16 ergy efficient in the 5 years immediately preceding
17 the date on which the eligible entity submits an ap-
18 plication under subsection (d);

19 “(3) the qualifications, experience, and past
20 performance of the eligible entity, including experi-
21 ence successfully managing and administering Fed-
22 eral funds;

23 “(4) the strength of the proposal of the eligible
24 entity to achieve one or more of the purposes de-
25 scribed in subsection (a);

1 “(5) the extent to which the eligible entity will
2 use partnerships and regional coordination to
3 achieve one or more of the purposes described in
4 subsection (a);

5 “(6) regional and climate zone diversity;

6 “(7) urban, suburban, and rural localities; and

7 “(8) any other appropriate factor, as deter-
8 mined by the Secretary.

9 “(f) FIRST AWARD.—Subject to the availability of ap-
10 propriations, not later than 270 days after the date of en-
11 actment of this section, the Secretary shall make a first
12 award of financial assistance under this section.

13 “(g) AMOUNT AND TERM.—

14 “(1) MAXIMUM AMOUNT.—The total amount of
15 financial assistance awarded to an eligible entity
16 under this section shall not exceed \$2,000,000.

17 “(2) PLANNING, MANAGEMENT, AND ADMINIS-
18 TRATION.—Of the amount awarded to an eligible en-
19 tity under this section, not more than 15 percent
20 may be used by the eligible entity for the purpose
21 described in subsection (c)(8).

22 “(3) TECHNICAL AND TRAINING ASSISTANCE.—
23 The total amount of financial assistance awarded to
24 an entity under this section shall be reduced by the
25 cost of any technical and training assistance pro-

1 vided by the Secretary under this section that relates
2 to that financial assistance.

3 “(4) TERM.—The term of an award of financial
4 assistance under this section shall not exceed 3
5 years.

6 “(5) RELATIONSHIP TO FORMULA GRANTS.—An
7 eligible entity may use financial assistance awarded
8 under this section in conjunction with other financial
9 assistance provided to the eligible entity under this
10 part.

11 “(h) GUIDANCE.—Not later than 90 days after the
12 date of enactment of this section, the Secretary shall issue
13 guidance on implementing this section, which shall in-
14 clude, with respect to eligible entities awarded financial
15 assistance under this section—

16 “(1) standards for allowable expenditures;

17 “(2) a minimum saving-to-investment ratio; and

18 “(3) standards for—

19 “(A) training programs;

20 “(B) energy audits;

21 “(C) the provision of technical assistance;

22 “(D) monitoring activities carried out
23 using the financial assistance;

24 “(E) verification of energy and cost sav-
25 ings;

1 “(2) the energy and cost savings, and any other
2 accomplishments, achieved under this section during
3 the year covered by the report.

4 “(1) FUNDING.—

5 “(1) IN GENERAL.—Subject to paragraphs (2)
6 and (3), for each of fiscal years 2021 through 2025,
7 of the amount appropriated under section 422—

8 “(A) if the amount is not more than
9 \$225,000,000, no funds shall be used to carry
10 out this section;

11 “(B) if the amount is not more than
12 \$260,000,000, not more than 2 percent of that
13 amount may be used to carry out this section;

14 “(C) if the amount is not more than
15 \$300,000,000, not more than 4 percent of that
16 amount may be used to carry out this section;
17 and

18 “(D) if the amount is more than
19 \$300,000,000, not more than 6 percent of that
20 amount may be used to carry out this section.

21 “(2) AMOUNTS EXCLUDED.—Each amount de-
22 scribed in paragraph (1) shall not include the
23 amount made available for Department of Energy
24 headquarters training or technical assistance.

1 “(3) MAXIMUM AMOUNT.—The maximum
2 amount used to carry out this section in each fiscal
3 year shall not exceed \$25,000,000.”.

4 (2) TABLE OF CONTENTS.—The table of con-
5 tents for the Energy Conservation and Production
6 Act (Public Law 94–385; 90 Stat. 1125) is amended
7 by inserting after the item relating to section 414C
8 (as added by subsection (c)(3)) the following:

 “Sec. 414D. Financial assistance for WAP enhancement and innovation.”.

9 (e) INCREASE IN ADMINISTRATIVE FUNDS.—Section
10 415(a)(1) of the Energy Conservation and Production Act
11 (42 U.S.C. 6865(a)(1)) is amended by striking “10 per-
12 cent” and inserting “15 percent”.

13 (f) REWEATHERIZATION DATE.—Section 415(c) of
14 the Energy Conservation and Production Act (42 U.S.C.
15 6865(c)) is amended by striking paragraph (2) and insert-
16 ing the following:

17 “(2) FURTHER ASSISTANCE.—

18 “(A) DEFINITION OF INTERIM SERVICE.—

19 “(i) IN GENERAL.—In this paragraph,
20 the term ‘interim service’ means an energy
21 service that takes place between instances
22 of weatherization or partial weatherization
23 of a dwelling unit, as determined by the
24 Secretary.

1 “(ii) INCLUSION.—In this paragraph,
2 the term ‘interim service’ includes—

3 “(I) the provision of energy infor-
4 mation and education to assist with
5 energy management;

6 “(II) an evaluation of the effec-
7 tiveness of installed weatherization
8 measures; and

9 “(III) the provision of services,
10 equipment, or other measures funded
11 by non-Federal funds, as determined
12 by the Secretary.

13 “(B) FURTHER ASSISTANCE.—Dwelling
14 units weatherized or partially weatherized under
15 this part, or under other Federal programs—

16 “(i) may not receive further financial
17 assistance for weatherization under this
18 part until the date that is 15 years after
19 the date on which the previous weatheriza-
20 tion was completed; and

21 “(ii) may receive further financial as-
22 sistance for weatherization under this part
23 for the purpose of providing an interim
24 service.”.

1 (g) ANNUAL REPORT.—Section 421 of the Energy
2 Conservation and Production Act (42 U.S.C. 6871) is
3 amended in the second sentence by inserting “the number
4 of multifamily buildings in which individual dwelling units
5 were weatherized during the previous year, the number of
6 individual dwelling units in multifamily buildings weather-
7 ized during the previous year,” after “the average size of
8 the dwellings being weatherized,”.

9 (h) REAUTHORIZATION OF WAP.—Section 422 of the
10 Energy Conservation and Production Act (42 U.S.C.
11 6872) is amended in the matter preceding paragraph (1)
12 by striking “appropriated” and all that follows through
13 “2012..” in paragraph (5) and inserting “appropriated
14 \$350,000,000 for each of fiscal years 2021 through
15 2025.”.

16 (i) WAIVER STUDY.—

17 (1) IN GENERAL.—It is the sense of Congress
18 that, to the maximum extent practicable, the Sec-
19 retary should coordinate with the Director of the Of-
20 fice of Management and Budget to grant waivers of
21 requirements under section 200.313 of title 2, Code
22 of Federal Regulations (or successor regulations), to
23 better leverage private sector funds for the purposes
24 of using funding awarded under the Weatherization
25 Assistance Program for Low-Income Persons estab-

1 lished under part A of title IV of the Energy Con-
2 servation and Production Act (42 U.S.C. 6861 et
3 seq.).

4 (2) STUDY.—Not more than 180 days after the
5 date of enactment of this Act, the Secretary shall
6 submit to the relevant committees of Congress a re-
7 port that describes—

8 (A) each waiver that has been requested
9 under paragraph (1) after September 30, 2010;
10 and

11 (B) the determination of the Secretary and
12 the Director of the Office of Management and
13 Budget regarding each waiver described in sub-
14 paragraph (A).

15 **Subtitle B—Renewable Energy**

16 **SEC. 1201. HYDROELECTRIC PRODUCTION INCENTIVES** 17 **AND EFFICIENCY IMPROVEMENTS.**

18 (a) HYDROELECTRIC PRODUCTION INCENTIVES.—
19 Section 242 of the Energy Policy Act of 2005 (42 U.S.C.
20 15881) is amended—

21 (1) in subsection (b), by striking paragraph (1)
22 and inserting the following:

23 “(1) QUALIFIED HYDROELECTRIC FACILITY.—
24 The term ‘qualified hydroelectric facility’ means a

1 turbine or other generating device owned or solely
2 operated by a non-Federal entity—

3 “(A) that generates hydroelectric energy
4 for sale; and

5 “(B)(i) that is added to an existing dam or
6 conduit; or

7 “(ii)(I) that has a generating capacity of
8 not more than 20 megawatts;

9 “(II) for which the non-Federal entity has
10 received a construction authorization from the
11 Federal Energy Regulatory Commission, if ap-
12 plicable; and

13 “(III) that is constructed in an area in
14 which there is inadequate electric service, as de-
15 termined by the Secretary, including by taking
16 into consideration—

17 “(aa) access to the electric grid;

18 “(bb) the frequency of electric out-
19 ages; or

20 “(cc) the affordability of electricity.”;

21 (2) in subsection (c), by striking “10” and in-
22 serting “22”;

23 (3) in subsection (e)(2), by striking “section
24 29(d)(2)(B)” and inserting “section 45K(d)(2)(B)”;

1 (4) in subsection (f), by striking “20” and in-
2 serting “32”; and

3 (5) in subsection (g), by striking “each of the
4 fiscal years 2006 through 2015” and inserting “each
5 of fiscal years 2021 through 2036”.

6 (b) **HYDROELECTRIC EFFICIENCY IMPROVEMENT.**—
7 Section 243(c) of the Energy Policy Act of 2005 (42
8 U.S.C. 15882(c)) is amended by striking “each of the fis-
9 cal years 2006 through 2015” and inserting “each of fis-
10 cal years 2021 through 2036”.

11 **SEC. 1202. MARINE ENERGY RESEARCH AND DEVELOP-**
12 **MENT.**

13 (a) **PURPOSE.**—The purpose of this section is to sup-
14 port marine energy programs that—

15 (1) promote research on, and the development
16 of, increased energy generation and capacity at re-
17 duced costs;

18 (2) promote research and development activities
19 that improve environmental outcomes of marine en-
20 ergy technologies;

21 (3) provide grid stability and create new market
22 opportunities; and

23 (4) promote job creation in the energy sector.

24 (b) **DEFINITION OF MARINE ENERGY.**—

1 (1) IN GENERAL.—Section 632 of the Energy
2 Independence and Security Act of 2007 (42 U.S.C.
3 17211) is amended to read as follows:

4 **“SEC. 632. DEFINITION OF MARINE ENERGY.**

5 “In this subtitle, the term ‘marine energy’ means en-
6 ergy from—

7 “(1) waves, tides, and currents in oceans, estu-
8 aries, and tidal areas;

9 “(2) free-flowing hydrokinetic water in rivers,
10 lakes, and streams;

11 “(3) free-flowing hydrokinetic water in man-
12 made channels; and

13 “(4) differentials in ocean temperature or ocean
14 thermal energy conversion.”.

15 (2) CONFORMING EDITS.—

16 (A) The subtitle heading for subtitle C of
17 title VI of the Energy Independence and Secu-
18 rity Act of 2007 (Public Law 110–440; 121
19 Stat. 1686) is amended by striking “**and**
20 **Hydrokinetic Renewable**”.

21 (B) Section 631 of the Energy Independ-
22 ence and Security Act of 2007 (42 U.S.C.
23 17001 note; 121 Stat. 1686) is amended by
24 striking “and Hydrokinetic Renewable”.

1 (c) MARINE ENERGY RESEARCH AND DEVELOP-
2 MENT.—Section 633 of the Energy Independence and Se-
3 curity Act of 2007 (42 U.S.C. 17212) is amended to read
4 as follows:

5 **“SEC. 633. MARINE ENERGY RESEARCH AND DEVELOP-**
6 **MENT.**

7 “(a) IN GENERAL.—The Secretary, acting through
8 the Director of the Water Power Technologies Office, in
9 consultation with the Secretary of the Interior, the Sec-
10 retary of Commerce, and the Federal Energy Regulatory
11 Commission, shall carry out a program to accelerate the
12 introduction of marine energy production into the United
13 States energy supply, giving priority to technologies most
14 likely to lead to commercial utilization, while fostering ac-
15 celerated research, development, demonstration, and com-
16 mercial application of technology, including programs—

17 “(1) to assist technology development on a vari-
18 ety of scales, including full-scale prototypes, to im-
19 prove the components, processes, and systems used
20 for power generation from marine energy resources;

21 “(2) to establish and expand critical testing in-
22 frastructure and facilities necessary—

23 “(A) to cost-effectively and efficiently test
24 and prove marine energy devices; and

1 “(B) to accelerate the technological readi-
2 ness and commercialization of those devices;

3 “(3) to support efforts to increase the efficiency
4 of energy conversion, lower the cost, increase the
5 use, improve the reliability, and demonstrate the ap-
6 plicability of marine energy technologies by partici-
7 pating in demonstration projects;

8 “(4) to investigate variability issues and the ef-
9 ficient and reliable integration of marine energy with
10 the utility grid;

11 “(5) to identify and study critical short- and
12 long-term needs to create a sustainable marine en-
13 ergy supply chain based in the United States;

14 “(6) to increase the reliability and survivability
15 of marine energy technologies;

16 “(7) to verify the performance, reliability, main-
17 tainability, and cost of new marine energy device de-
18 signs and system components in an operating envi-
19 ronment;

20 “(8) to consider the protection of critical infra-
21 structure, such as adequate separation between ma-
22 rine energy devices and projects and submarine tele-
23 communications cables, including consideration of
24 established industry standards;

1 “(9)(A) to coordinate the programs carried out
2 under this section with, and avoid duplication of ac-
3 tivities across, programs of the Department and
4 other applicable Federal agencies, including National
5 Laboratories; and

6 “(B) to coordinate public-private collaboration
7 in carrying out the programs under this section;

8 “(10) to identify opportunities for joint re-
9 search and development programs and the develop-
10 ment of economies of scale between—

11 “(A) marine energy technologies; and

12 “(B) other renewable energy and fossil en-
13 ergy programs, offshore oil and gas production
14 activities, and activities of the Department of
15 Defense;

16 “(11) to identify, in conjunction with the Sec-
17 retary of Commerce, acting through the Under Sec-
18 retary of Commerce for Oceans and Atmosphere,
19 and other relevant Federal agencies as appropriate,
20 the potential environmental impacts, including po-
21 tential impacts on fisheries and other marine re-
22 sources, of marine energy technologies, measures to
23 prevent adverse impacts, and technologies and other
24 means available for monitoring and determining en-
25 vironmental impacts;

1 “(12) to identify, in conjunction with the Sec-
2 retary of the Department in which the United States
3 Coast Guard is operating, acting through the Com-
4 mandant of the United States Coast Guard, the po-
5 tential navigational impacts of marine energy tech-
6 nologies and measures to prevent adverse impacts on
7 navigation;

8 “(13) to support in-water technology develop-
9 ment with international partners using existing co-
10 operative procedures (including memoranda of un-
11 derstanding)—

12 “(A) to allow cooperative funding and
13 other support of value to be exchanged and le-
14 veraged; and

15 “(B) to encourage international research
16 centers and international companies to partici-
17 pate in the development of marine energy tech-
18 nology in the United States and to encourage
19 United States research centers and companies
20 to participate in marine energy projects abroad;
21 and

22 “(14) to assist in the development of technology
23 necessary to support the use of marine energy—

1 “(A) for the generation and storage of
2 power at sea, including in applications relating
3 to—

4 “(i) ocean observation and navigation;

5 “(ii) underwater vehicle charging;

6 “(iii) marine aquaculture;

7 “(iv) production of marine algae; and

8 “(v) extraction of critical minerals
9 and gasses from seawater;

10 “(B) for the generation and storage of
11 power to promote the resilience of coastal com-
12 munities, including in applications relating to—

13 “(i) desalination;

14 “(ii) disaster recovery and resilience;

15 and

16 “(iii) community microgrids in iso-
17 lated power systems; and

18 “(C) in any other applications, as deter-
19 mined by the Secretary.

20 “(b) COST SHARING AND MERIT REVIEW.—The Sec-
21 retary shall carry out the program under this section in
22 accordance with sections 988 and 989 of the Energy Pol-
23 icy Act of 2005 (42 U.S.C. 16352, 16353).”.

1 (d) NATIONAL MARINE ENERGY CENTERS.—Section
2 634 of the Energy Independence and Security Act of 2007
3 (42 U.S.C. 17213) is amended—

4 (1) in the section heading, by striking “**RE-**
5 **NEWABLE ENERGY RESEARCH, DEVELOPMENT,**
6 **AND DEMONSTRATION**” and inserting “**ENERGY**”;

7 (2) by redesignating subsection (c) as sub-
8 section (d); and

9 (3) by striking subsections (a) and (b) and in-
10 sserting the following:

11 “(a) CENTERS.—

12 “(1) IN GENERAL.—The Secretary shall award
13 grants to institutions of higher education for—

14 “(A) the continuation and expansion of re-
15 search, development, and testing activities at
16 National Marine Energy Centers established as
17 of January 1, 2019; and

18 “(B) the establishment of new National
19 Marine Energy Centers.

20 “(2) CRITERIA.—In selecting locations for new
21 National Marine Energy Centers to be established
22 under paragraph (1)(B), the Secretary shall consider
23 sites that meet one of the following criteria:

24 “(A) The new Center hosts an existing ma-
25 rine energy research and development program

1 in coordination with an engineering program at
2 an institution of higher education.

3 “(B) The new Center has proven expertise
4 to support environmental and policy-related
5 issues associated with the harnessing of energy
6 in the marine environment.

7 “(C) The new Center has access to and
8 uses marine resources.

9 “(b) PURPOSES.—The National Marine Energy Cen-
10 ters shall coordinate with other National Marine Energy
11 Centers, the Department, and the National Labora-
12 tories—

13 “(1) to advance research, development, and
14 demonstration of marine energy technologies;

15 “(2) to support in-water testing and demonstra-
16 tion of marine energy technologies, including facili-
17 ties capable of testing—

18 “(A) marine energy systems of various
19 technology readiness levels and scales;

20 “(B) a variety of technologies in multiple
21 test berths at a single location; and

22 “(C) arrays of technology devices; and

23 “(3) to serve as information clearinghouses for
24 the marine energy industry by collecting and dis-
25 seminating information on best practices in all areas

1 relating to developing and managing marine energy
2 resources and energy systems.

3 “(c) COST SHARING.—The Secretary shall carry out
4 the program under this section in accordance with section
5 988(b)(4) of the Energy Policy Act of 2005 (42 U.S.C.
6 16352(b)(4)).”.

7 (e) AUTHORIZATION OF APPROPRIATIONS.—Section
8 636 of the Energy Independence and Security Act of 2007
9 (42 U.S.C. 17215) is amended by striking “\$50,000,000
10 for each of the fiscal years 2008 through 2012” and in-
11 serting “\$160,000,000 for each of fiscal years 2021 and
12 2022”.

13 (f) STUDY OF ENERGY INNOVATION IN MARINE
14 TRANSPORTATION AND INFRASTRUCTURE RESILIENCE.—

15 (1) IN GENERAL.—The Secretary, in consulta-
16 tion with the Secretary of Transportation and the
17 Secretary of Commerce, shall conduct a study to ex-
18 amine opportunities for research and development in
19 advanced marine energy technologies—

20 (A) to support the maritime transportation
21 sector to enhance job creation, economic devel-
22 opment, and competitiveness;

23 (B) to support associated maritime energy
24 infrastructure, including infrastructure that

1 serves ports, to improve system resilience and
2 disaster recovery; and

3 (C) to enable scientific missions at sea and
4 in extreme environments, including the Arctic.

5 (2) REPORT.—Not later than 1 year after the
6 date of enactment of this Act, the Secretary shall
7 submit to the Committee on Energy and Natural
8 Resources of the Senate and the Committee on
9 Science, Space, and Technology of the House of
10 Representatives a report that describes the results of
11 the study conducted under paragraph (1).

12 (g) CLERICAL AMENDMENTS.—The table of contents
13 in section 1(b) of the Energy Independence and Security
14 Act of 2007 (Public Law 110–140; 121 Stat. 1495) is
15 amended—

16 (1) by striking the item relating to subtitle C
17 of title VI and inserting the following:

“Subtitle C—Marine Renewable Energy Technologies”; and

18 (2) by striking the items relating to sections
19 632, 633, and 634 and inserting the following:

“Sec. 632. Definition of marine energy.

“Sec. 633. Marine energy research and development.

“Sec. 634. National Marine Energy Centers.”.

1 **SEC. 1203. ADVANCED GEOTHERMAL INNOVATION LEADER-**
2 **SHIP.**

3 (a) UPDATE TO GEOTHERMAL RESOURCE ASSESS-
4 MENT.—Section 2501 of the Energy Policy Act of 1992
5 (30 U.S.C. 1028) is amended—

6 (1) by redesignating subsections (a) and (b) as
7 subsections (b) and (d), respectively;

8 (2) by inserting before subsection (b) (as so re-
9 designated) the following:

10 “(a) DEFINITION OF ENHANCED GEOTHERMAL SYS-
11 TEMS.—In this section, the term ‘enhanced geothermal
12 systems’ has the meaning given the term in section 612
13 of the Energy Independence and Security Act of 2007 (42
14 U.S.C. 17191).”;

15 (3) by inserting after subsection (b) (as so re-
16 designated) the following:

17 “(c) UPDATE TO GEOTHERMAL RESOURCE ASSESS-
18 MENT.—The Secretary of the Interior, acting through the
19 United States Geological Survey, and in consultation with
20 the Secretary of Energy, shall update the 2008 United
21 States geothermal resource assessment carried out by the
22 United States Geological Survey, including—

23 “(1) with respect to areas previously identified
24 by the Department of Energy or the United States
25 Geological Survey as having significant potential for

1 hydrothermal energy or enhanced geothermal sys-
2 tems energy, by focusing on—

3 “(A) improving the resolution of resource
4 potential at systematic temperatures and
5 depths, including temperatures and depths ap-
6 propriate for power generation and direct use
7 applications;

8 “(B) quantifying the total potential to co-
9 produce geothermal energy and minerals;

10 “(C) incorporating data relevant to under-
11 ground thermal energy storage and exchange,
12 such as aquifer and soil properties; and

13 “(D) producing high resolution maps, in-
14 cluding—

15 “(i) maps that indicate key subsurface
16 parameters for electric and direct use re-
17 sources; and

18 “(ii) risk maps for induced seismicity
19 based on geologic, geographic, and oper-
20 ational parameters; and

21 “(2) to the maximum extent practicable, by co-
22 ordinating with relevant State officials and institu-
23 tions of higher education to expand geothermal as-
24 sessments, including enhanced geothermal systems
25 assessments, to include assessments for the Com-

1 monwealth of Puerto Rico and the States of Alaska
2 and Hawaii.”; and

3 (4) in subsection (d) (as so redesignated), by
4 striking “necessary” and inserting “necessary”.

5 (b) GENERAL GEOTHERMAL RESEARCH AND DEVEL-
6 OPMENT PROGRAMS.—Section 614 of the Energy Inde-
7 pendence and Security Act of 2007 (42 U.S.C. 17193) is
8 amended by adding at the end the following:

9 “(d) OIL AND GAS TECHNOLOGY TRANSFER INITIA-
10 TIVE.—

11 “(1) IN GENERAL.—The Secretary shall sup-
12 port an initiative among the Office of Fossil Energy,
13 the Office of Energy Efficiency and Renewable En-
14 ergy, and the private sector to modify, improve, and
15 demonstrate the use in geothermal energy develop-
16 ment of relevant advanced technologies and oper-
17 ation techniques used in the oil and gas sector.

18 “(2) PRIORITIES.—In carrying out paragraph
19 (1), the Secretary shall prioritize technologies with
20 the greatest potential to significantly increase the
21 use and lower the cost of geothermal energy in the
22 United States, including the cost and speed of small-
23 and large-scale geothermal drilling.

24 “(e) COPRODUCTION OF GEOTHERMAL ENERGY AND
25 MINERALS PRODUCTION PRIZE COMPETITION.—

1 “(1) IN GENERAL.—The Secretary shall carry
2 out a prize competition under which the Secretary
3 shall award prizes to demonstrate the coproduction
4 of critical minerals (as defined by the Secretary of
5 the Interior on the date of enactment of the Amer-
6 ican Energy Innovation Act of 2020) from geo-
7 thermal resources.

8 “(2) REQUIREMENTS.—A demonstration award-
9 ed a prize under paragraph (1) shall—

10 “(A) improve the cost-effectiveness of re-
11 moving minerals from geothermal brines as part
12 of the coproduction process;

13 “(B) increase recovery rates of the tar-
14 geted mineral commodity;

15 “(C) decrease water use and other environ-
16 mental impacts, as determined by the Sec-
17 retary; and

18 “(D) demonstrate a path to commercial vi-
19 ability.

20 “(3) MAXIMUM PRIZE AMOUNT.—The max-
21 imum amount of a prize awarded under paragraph
22 (1) shall be \$10,000,000.

23 “(f) DRILLING DATA REPOSITORY.—

24 “(1) IN GENERAL.—The Secretary shall, in co-
25 ordination with the Secretary of the Interior, estab-

1 lish and operate a voluntary, industry-wide reposi-
2 tory of geothermal drilling information to lower the
3 cost of future geothermal drilling.

4 “(2) REPOSITORY.—

5 “(A) IN GENERAL.—In carrying out para-
6 graph (1), the Secretary shall collaborate with
7 geothermally significant countries, such as Ice-
8 land, Switzerland, Kenya, Australia, the Phil-
9 ippines, and any other relevant country, as de-
10 termined by the Secretary.

11 “(B) DATA SYSTEM.—The repository es-
12 tablished under paragraph (1) shall be inte-
13 grated with the National Geothermal Data Sys-
14 tem.”.

15 (c) ENHANCED GEOTHERMAL RESEARCH AND DE-
16 VELOPMENT.—

17 (1) DEFINITION OF ENGINEERED.—Section
18 612(1) of the Energy Independence and Security
19 Act of 2007 (42 U.S.C. 17191(1)) is amended in the
20 matter preceding subparagraph (A) by striking
21 “subjected to intervention, including intervention”
22 and inserting “designed to access subsurface heat,
23 including nonstimulation technologies,”.

1 (2) PROGRAMS.—Section 615(b) of the Energy
2 Independence and Security Act of 2007 (42 U.S.C.
3 17194(b)) is amended—

4 (A) in paragraph (1)—

5 (i) in subparagraph (C), by striking
6 “mapping” and inserting “and fracture
7 mapping, including real-time modeling”;

8 (ii) in subparagraph (E), by striking
9 “and” at the end;

10 (iii) by redesignating subparagraph
11 (F) as subparagraph (K); and

12 (iv) by inserting after subparagraph
13 (E) the following:

14 “(F) well placement and orientation;

15 “(G) long-term reservoir management;

16 “(H) drilling technologies, methods, and
17 tools;

18 “(I) improved exploration tools;

19 “(J) zonal isolation; and”;

20 (B) by striking paragraph (2) and insert-
21 ing the following:

22 “(2) FRONTIER OBSERVATORIES FOR RE-
23 SEARCH IN GEOTHERMAL ENERGY.—

24 “(A) PROGRAM.—The Secretary shall sup-
25 port 2 field research sites, which shall each be

1 known as a ‘Frontier Observatory for Research
2 in Geothermal Energy’ or ‘FORGE’ site, to de-
3 velop, test, and enhance techniques and tools
4 for enhanced geothermal energy.

5 “(B) SITE SELECTION.—Of the FORGE
6 sites referred to in subparagraph (A)—

7 “(i) 1 shall be the existing research
8 site in Milford, Utah; and

9 “(ii) 1 shall be—

10 “(I) selected by the Secretary
11 through a competitive selection proc-
12 ess; and

13 “(II) located in a different geo-
14 logic type than the existing research
15 site described in clause (i).

16 “(C) SITE OPERATION.—

17 “(i) INITIAL DURATION.—The
18 FORGE site selected under subparagraph
19 (B)(ii) shall operate for an initial term of
20 not more than 7 years after the date on
21 which site preparation is complete.

22 “(ii) PERFORMANCE METRICS.—The
23 Secretary shall establish performance
24 metrics for each FORGE site supported
25 under this paragraph, which may be used

1 by the Secretary to determine whether a
2 FORGE site should continue to receive
3 funding.

4 “(D) ADDITIONAL TERMS.—

5 “(i) IN GENERAL.—At the end of an
6 operational term described in clause (ii), a
7 FORGE site may—

8 “(I) be transferred to other pub-
9 lic or private entities for further en-
10 hanced geothermal testing; or

11 “(II) subject to appropriations
12 and a merit review by the Secretary,
13 operate for an additional term of not
14 more than 7 years.

15 “(ii) OPERATIONAL TERM DE-
16 SCRIBED.—An operational term referred to
17 in clause (i)—

18 “(I) in the case of the FORGE
19 site designated under subparagraph
20 (B)(i), is the existing operational
21 term; and

22 “(II) in the case of the FORGE
23 site selected under subparagraph
24 (B)(ii), is the initial term under sub-

1 paragraph (C) or an additional term
2 under clause (i)(II).

3 “(3) ENHANCED GEOTHERMAL SYSTEMS DEM-
4 ONSTRATIONS.—

5 “(A) IN GENERAL.—Beginning on the date
6 of enactment of the American Energy Innova-
7 tion Act of 2020, the Secretary, in collaboration
8 with industry partners and institutions of high-
9 er education, shall support an initiative for
10 demonstration of enhanced geothermal systems
11 for power production or direct use.

12 “(B) PROJECTS.—

13 “(i) IN GENERAL.—Under the initia-
14 tive described in subparagraph (A), not
15 less than 4 demonstration projects shall be
16 carried out in locations that are potentially
17 commercially viable for enhanced geo-
18 thermal systems development, as deter-
19 mined by the Secretary.

20 “(ii) REQUIREMENTS.—Demonstra-
21 tion projects under clause (i) shall—

22 “(I) collectively demonstrate—

23 “(aa) different geologic set-
24 tings, such as hot sedimentary
25 aquifers, layered geologic sys-

1 tems, supercritical systems, and
2 basement rock systems; and

3 “(bb) a variety of develop-
4 ment techniques, including open
5 hole and cased hole completions,
6 differing well orientations, and
7 stimulation mechanisms;

8 “(II) to the extent practicable,
9 use existing sites where subsurface
10 characterization or geothermal energy
11 integration analysis has been con-
12 ducted; and

13 “(III) each be carried out in ac-
14 cordance with section 988 of the En-
15 ergy Policy Act of 2005 (42 U.S.C.
16 16352).

17 “(iii) EASTERN DEMONSTRATION.—
18 Not less than 1 demonstration project
19 under clause (i) shall be located in an area
20 east of the Mississippi River that is suit-
21 able for enhanced geothermal demonstra-
22 tion for power, heat, or a combination of
23 power and heat.

24 “(C) OPTIONAL PROGRAM STRUCTURE.—

1 “(i) IN GENERAL.—The Secretary
2 may, pursuant to section 646(g) of the De-
3 partment of Energy Organization Act (42
4 U.S.C. 7256(g)), structure the initiative
5 described in subparagraph (A) as a public-
6 private cost-shared demonstration initiative
7 with specific design milestones required to
8 be met by a participant before costs are re-
9 imbursed by the Secretary.

10 “(ii) REQUIREMENTS.—If the Sec-
11 retary elects to carry out clause (i) for a
12 demonstration project, the Secretary
13 shall—

14 “(I) request proposals from eligi-
15 ble entities, as determined by the Sec-
16 retary, that include—

17 “(aa) a business plan;

18 “(bb) technical details; and

19 “(cc) proposed milestones
20 and associated payments; and

21 “(II) select projects—

22 “(aa) based on the dem-
23 onstrated ability of the eligible
24 entity to meet the milestones and
25 associated payments described in

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1 the proposal of that eligible enti-
2 ty; and

3 “(bb) that have the greatest
4 potential commercial applica-
5 bility.

6 “(iii) **AUTHORITY.**—Notwithstanding
7 section 646(g)(10) of the Department of
8 Energy Organization Act (42 U.S.C.
9 7256(g)(10)), the Secretary shall have the
10 authority to carry out clause (i) until the
11 completion of the initiative described in
12 subparagraph (A).”.

13 (d) **GEOTHERMAL HEAT PUMPS AND DIRECT USE.**—

14 (1) **IN GENERAL.**—Title VI of the Energy Inde-
15 pendence and Security Act of 2007 is amended by
16 inserting after section 616 (42 U.S.C. 17195) the
17 following:

18 **“SEC. 616A. GEOTHERMAL HEAT PUMPS AND DIRECT USE**

19 **RESEARCH AND DEVELOPMENT.**

20 “(a) **PURPOSES.**—The purposes of this section are—

21 “(1) to improve the components, processes, and
22 systems used for geothermal heat pumps and the di-
23 rect use of geothermal energy; and

24 “(2) to increase the energy efficiency, lower the
25 cost, increase the use, and improve and demonstrate

1 the applicability of geothermal heat pumps to, and
2 the direct use of geothermal energy in, large build-
3 ings, commercial districts, residential communities,
4 and large municipal, agricultural, or industrial
5 projects.

6 “(b) DEFINITIONS.—In this section:

7 “(1) DIRECT USE OF GEOTHERMAL ENERGY.—
8 The term ‘direct use of geothermal energy’ means
9 geothermal systems that use water directly or
10 through a heat exchanger to provide—

11 “(A) heating to buildings; or

12 “(B) heat required for industrial processes,
13 agriculture, aquaculture, and other facilities.

14 “(2) ECONOMICALLY DISTRESSED AREA.—The
15 term ‘economically distressed area’ means an area
16 described in section 301(a) of the Public Works and
17 Economic Development Act of 1965 (42 U.S.C.
18 3161(a)).

19 “(3) GEOTHERMAL HEAT PUMP.—The term
20 ‘geothermal heat pump’ means a system that pro-
21 vides heating and cooling by exchanging heat from
22 shallow ground or surface water using—

23 “(A) a closed loop system, which transfers
24 heat by way of buried or immersed pipes that
25 contain a mix of water and working fluid; or

1 “(B) an open loop system, which circulates
2 ground or surface water directly into the build-
3 ing and returns the water to the same aquifer
4 or surface water source.

5 “(c) PROGRAM.—

6 “(1) IN GENERAL.—The Secretary shall sup-
7 port within the Geothermal Technologies Office a
8 program of research, development, and demonstra-
9 tion for geothermal heat pumps and the direct use
10 of geothermal energy.

11 “(2) AREAS.—The program under paragraph
12 (1) may include research, development, demonstra-
13 tion, and commercial application of—

14 “(A) geothermal ground loop efficiency im-
15 provements, cost reductions, and improved in-
16 stallation and operations methods;

17 “(B) the use of geothermal energy for
18 building-scale energy storage;

19 “(C) the use of geothermal energy as a
20 grid management resource or seasonal energy
21 storage;

22 “(D) geothermal heat pump efficiency im-
23 provements;

24 “(E) the use of alternative fluids as a heat
25 exchange medium, such as hot water found in

1 mines and mine shafts, graywater, or other
2 fluids that may improve the economics of geo-
3 thermal heat pumps;

4 “(F) heating of districts, neighborhoods,
5 communities, large commercial or public build-
6 ings, and industrial and manufacturing facili-
7 ties;

8 “(G) the use of water sources at a tem-
9 perature of less than 150 degrees Celsius for di-
10 rect use; and

11 “(H) system integration of direct use with
12 geothermal electricity production.

13 “(3) ENVIRONMENTAL IMPACTS.—In carrying
14 out the program, the Secretary shall identify and
15 mitigate potential environmental impacts in accord-
16 ance with section 614(c).

17 “(d) FINANCIAL ASSISTANCE.—

18 “(1) IN GENERAL.—The Secretary shall make
19 financial assistance available to State, local, and
20 Tribal governments, institutions of higher education,
21 nonprofit entities, National Laboratories, utilities,
22 and for-profit companies to promote the development
23 of geothermal heat pumps and the direct use of geo-
24 thermal energy.

1 “(2) PRIORITY.—In providing financial assist-
2 ance under this subsection, the Secretary shall give
3 priority to proposals that apply to large buildings,
4 commercial districts, and residential communities
5 that are located in economically distressed areas.”.

6 (2) CLERICAL AMENDMENT.—The table of con-
7 tents in section 1(b) of the Energy Independence
8 and Security Act of 2007 (Public Law 110–140; 121
9 Stat. 1495) is amended by inserting after the item
10 relating to section 616 the following:

 “Sec. 616A. Geothermal heat pumps and direct use research and develop-
 ment.”.

11 (e) MODIFYING THE DEFINITION OF RENEWABLE
12 ENERGY TO INCLUDE THERMAL ENERGY.—

13 (1) IN GENERAL.—Section 203 of the Energy
14 Policy Act of 2005 (42 U.S.C. 15852) is amended—

15 (A) in subsection (b)(2), by striking “gen-
16 erated” and inserting “produced”; and

17 (B) in subsection (c)—

18 (i) by redesignating paragraphs (1)
19 through (3) as subparagraphs (A) through
20 (C), respectively, and indenting appro-
21 priately;

22 (ii) in the matter preceding subpara-
23 graph (A) (as so redesignated), by striking

1 “For purposes” and inserting the fol-
2 lowing:

3 “(1) IN GENERAL.—For purposes”; and

4 (iii) by adding at the end the fol-
5 lowing:

6 “(2) SEPARATE CALCULATION.—

7 “(A) IN GENERAL.—For purposes of deter-
8 mining compliance with the requirement of this
9 section, any energy consumption that is avoided
10 through the use of geothermal energy shall be
11 considered to be renewable energy produced.

12 “(B) EFFICIENCY ACCOUNTING.—Energy
13 consumption that is avoided through the use of
14 geothermal energy that is considered to be re-
15 newable energy under this section shall not be
16 considered energy efficiency for the purpose of
17 compliance with Federal energy efficiency goals,
18 targets, and incentives.”.

19 (2) CONFORMING AMENDMENT.—Section
20 2410q(a) of title 10, United States Code, is amend-
21 ed by striking “section 203(b)(2) of the Energy Pol-
22 icy Act of 2005 (42 U.S.C. 15852(b)(2))” and in-
23 serting “section 203(b) of the Energy Policy Act of
24 2005 (42 U.S.C. 15852(b))”.

1 (f) AUTHORIZATION OF APPROPRIATIONS.—Section
2 623 of the Energy Independence and Security Act of 2007
3 (42 U.S.C. 17202) is amended by striking “\$90,000,000”
4 in the first sentence and all that follows through the pe-
5 riod at the end of the second sentence and inserting the
6 following: “\$165,000,000 for each of fiscal years 2021
7 through 2025, of which—

8 “(1) \$5,000,000 each fiscal year shall be for
9 the prize competition under section 614(e); and

10 “(2) \$1,000,000 each fiscal year shall be for
11 the drilling data repository under section 614(f).”.

12 (g) REAUTHORIZATION OF HIGH COST REGION GEO-
13 THERMAL ENERGY GRANT PROGRAM.—Section 625 of the
14 Energy Independence and Security Act of 2007 (42
15 U.S.C. 17204) is amended—

16 (1) in subsection (a)(2), by inserting “or heat”
17 after “electrical power”; and

18 (2) by striking subsection (e) and inserting the
19 following:

20 “(e) AUTHORIZATION OF APPROPRIATIONS.—There
21 is authorized to be appropriated to carry out this section
22 \$5,000,000 for each of fiscal years 2021 through 2025.”.

23 (h) NATIONAL GOALS FOR PRODUCTION ON FED-
24 ERAL LAND.—

1 (1) IN GENERAL.—Not later than September 1,
2 2022, the Secretary of the Interior shall, in con-
3 sultation with the Secretary, the Secretary of Agri-
4 culture, and other heads of relevant Federal agen-
5 cies, establish national goals for geothermal energy
6 capacity on public land.

7 (2) GEOTHERMAL ENERGY DEVELOPMENT.—
8 The Director of the Bureau of Land Management,
9 in consultation with other appropriate Federal offi-
10 cials, shall take any actions that the Director of the
11 Bureau of Land Management determines necessary
12 to facilitate geothermal energy development, con-
13 sistent with applicable laws.

14 (i) FACILITATION OF COPRODUCTION OF GEO-
15 THERMAL ENERGY ON OIL AND GAS LEASES.—Section
16 4(b) of the Geothermal Steam Act of 1970 (30 U.S.C.
17 1003(b)) is amended by adding at the end the following:

18 “(4) LAND SUBJECT TO OIL AND GAS LEASE.—
19 Land under an oil and gas lease issued pursuant to
20 the Mineral Leasing Act (30 U.S.C. 181 et seq.) or
21 the Mineral Leasing Act for Acquired Lands (30
22 U.S.C. 351 et seq.) that is subject to an approved
23 application for permit to drill and from which oil
24 and gas production is occurring may be available for

1 noncompetitive leasing under this section to the
2 holder of the oil and gas lease—

3 “(A) on a determination that—

4 “(i) geothermal energy will be pro-
5 duced from a well producing or capable of
6 producing oil and gas; and

7 “(ii) national energy security will be
8 improved by the issuance of such a lease;
9 and

10 “(B) to provide for the coproduction of
11 geothermal energy with oil and gas.”.

12 (j) GEOTHERMAL RESOURCE CONFIRMATION TEST
13 PROJECTS.—

14 (1) IN GENERAL.—The Geothermal Steam Act
15 of 1970 (30 U.S.C. 1001 et seq.) is amended by
16 adding at the end the following:

17 **“SEC. 30. GEOTHERMAL RESOURCE CONFIRMATION TEST**
18 **PROJECTS.**

19 “(a) DEFINITIONS.—In this section:

20 “(1) EXTRAORDINARY CIRCUMSTANCES.—The
21 term ‘extraordinary circumstances’ has the same
22 meaning given the term in the Department of the
23 Interior Departmental Manual, 516 DM 2.3A(3)
24 and 516 DM 2, Appendix 2 (or successor provi-
25 sions).

1 “(2) GEOTHERMAL RESOURCE CONFIRMATION
2 TEST PROJECT.—The term ‘geothermal resource
3 confirmation test project’ means a project of drilling
4 not more than 3 wells into a reservoir to test or ex-
5 plore for geothermal resources—

6 “(A) on land for which the Secretary has
7 issued a lease under this Act; and

8 “(B) that—

9 “(i) is carried out by the holder of the
10 lease;

11 “(ii) allows for well testing, such as to
12 confirm temperature, pressure, chemistry,
13 flow rate, and near-wellbore and overall
14 reservoir permeability;

15 “(iii) causes—

16 “(I) less than 2.5 acres of soil or
17 vegetation disruption at the location
18 of each geothermal exploration well;
19 and

20 “(II) not more than an additional
21 5 acres of soil or vegetation disruption
22 during access to or egress from the
23 test site;

24 “(iv) is less than 9 inches in bottom-
25 hole diameter;

1 “(v) is developed—

2 “(I) in a manner that does not
3 require off-road motorized access
4 other than to and from the well site
5 along an identified off-road route; and

6 “(II) without the use of high-
7 pressure well stimulation;

8 “(vi) includes the removal of any sur-
9 face infrastructure other than the wellhead
10 from the site not later than 90 days after
11 the project is completed; and

12 “(vii) requires, not later than 42
13 months after the date on which the first
14 exploration drilling began, the restoration
15 of the project site to approximately the
16 condition that existed at the time the
17 project begins, unless the site is subse-
18 quently used as part of an energy develop-
19 ment under the lease.

20 “(b) CATEGORICAL EXCLUSION.—Unless extraor-
21 dinary circumstances exist, a project that the Secretary
22 determines under subsection (c) is a geothermal resource
23 confirmation test project shall be categorically excluded
24 from the requirements for an environmental assessment
25 or an environmental impact statement under the National

1 Environmental Policy Act of 1969 (42 U.S.C. 4321 et
2 seq.) or section 1508.4 of title 40, Code of Federal Regula-
3 tions (or a successor regulation).

4 “(c) PROCESS.—

5 “(1) REQUIREMENT TO PROVIDE NOTICE.—A
6 leaseholder shall provide notice to the Secretary of
7 the intent of the leaseholder to carry out a geo-
8 thermal resource confirmation test project at least
9 30 days before the start of drilling under the
10 project.

11 “(2) REVIEW AND DETERMINATION.—Not later
12 than 30 days after receipt of a notice of intent
13 under paragraph (1), the Secretary shall, with re-
14 spect to the project described in the notice of in-
15 tent—

16 “(A) determine if the project is a geo-
17 thermal resource confirmation test project;

18 “(B) notify the leaseholder of such deter-
19 mination; and

20 “(C) provide public notice of the deter-
21 mination.

22 “(3) OPPORTUNITY TO REMEDY.—If the Sec-
23 retary determines under paragraph (2)(A) that the
24 project is not a geothermal resource confirmation
25 test project, the Secretary shall—

1 “(A) include in such notice clear and de-
2 tailed findings on any deficiencies in the project
3 that resulted in such determination; and

4 “(B) allow the leaseholder to remedy any
5 such deficiencies and resubmit the notice of in-
6 tent under paragraph (1).”.

7 (2) REPEAL.—The Geothermal Energy Re-
8 search, Development, and Demonstration Act of
9 1974 (30 U.S.C. 1101 et seq.) is repealed.

10 (k) PROGRAM TO IMPROVE FEDERAL GEOTHERMAL
11 PERMIT COORDINATION.—

12 (1) DEFINITIONS.—In this subsection:

13 (A) PROGRAM.—The term “Program”
14 means the Geothermal Energy Permitting Co-
15 ordination Program established under para-
16 graph (2).

17 (B) SECRETARY.—The term “Secretary”
18 means the Secretary of the Interior.

19 (2) ESTABLISHMENT OF PROGRAM.—Not later
20 than 90 days after the date of enactment of this
21 Act, the Secretary shall establish a program, to be
22 known as the “Geothermal Energy Permitting Co-
23 ordination Program”, to improve Federal permit co-
24 ordination and reduce regulatory timelines with re-
25 spect to geothermal energy projects on Federal land

1 by increasing the expertise of officials administering
2 and approving permits.

3 (3) ESTABLISHMENT OF PROGRAM OFFICES.—

4 To carry out the Program, the Secretary shall estab-
5 lish 1 or more Program offices at State or district
6 offices of the Department of the Interior.

7 (4) MEMORANDUM OF UNDERSTANDING.—

8 (A) IN GENERAL.—Not later than 90 days
9 after the date of enactment of this Act, the Sec-
10 retary shall enter into a memorandum of under-
11 standing for purposes of this subsection with—

- 12 (i) the Secretary of Agriculture;
13 (ii) the Administrator of the Environ-
14 mental Protection Agency; and
15 (iii) the Secretary of Defense.

16 (B) STATE PARTICIPATION.—The Sec-
17 retary may request that the Governor of any
18 State be a signatory to the memorandum of un-
19 derstanding under subparagraph (A).

20 (5) DESIGNATION OF QUALIFIED STAFF.—

21 (A) IN GENERAL.—Not later than 30 days
22 after the date on which the memorandum of un-
23 derstanding under paragraph (4) is executed,
24 all Federal signatories, as appropriate, shall as-
25 sign to each Program office established under

1 paragraph (3) 1 or more employees who have
2 expertise in the regulatory issues relating to the
3 office or agency in which the employee is em-
4 ployed, including, as applicable, particular ex-
5 pertise in—

6 (i) consultation regarding, and prepa-
7 ration of, biological opinions under section
8 7 of the Endangered Species Act of 1973
9 (16 U.S.C. 1536);

10 (ii) permits under section 404 of the
11 Federal Water Pollution Control Act (33
12 U.S.C. 1344);

13 (iii) regulatory matters under the
14 Clean Air Act (42 U.S.C. 7401 et seq.);

15 (iv) the Federal Land Policy and
16 Management Act of 1976 (43 U.S.C. 1701
17 et seq.);

18 (v) planning under section 14 of the
19 National Forest Management Act of 1976
20 (16 U.S.C. 472a);

21 (vi) developing geothermal resources
22 under the Geothermal Steam Act of 1970
23 (30 U.S.C. 1001 et seq.); and

1 (vii) the preparation of analyses under
2 the National Environmental Policy Act of
3 1969 (42 U.S.C. 4321 et seq.).

4 (B) DUTIES.—Each employee assigned
5 under subparagraph (A) shall—

6 (i) not later than 90 days after the
7 date on which the employee is assigned, re-
8 port to the State Director of the Bureau of
9 Land Management for the State in which
10 the office to which the employee is as-
11 signed is located;

12 (ii) be responsible for all issues relat-
13 ing to the jurisdiction of the home office or
14 agency of the employee; and

15 (iii) participate as part of the team of
16 personnel working on proposed energy
17 projects, planning, and environmental anal-
18 yses.

19 (6) ADDITIONAL PERSONNEL.—The Secretary
20 shall assign to each Program office any additional
21 personnel that are necessary to ensure the effective
22 implementation of—

23 (A) the Program; and

24 (B) any program administered by the Pro-
25 gram office, including inspection and enforce-

1 ment relating to energy development on Federal
2 land, in accordance with the multiple use man-
3 date of the Federal Land Policy and Manage-
4 ment Act of 1976 (43 U.S.C. 1701 et seq.).

5 (7) TRANSFER OF FUNDS.—To facilitate the co-
6 ordination and processing of geothermal permits on
7 Federal land under the administration of a Program
8 office, the Secretary may authorize the expenditure
9 or transfer of any funds that are necessary to—

10 (A) the United States Fish and Wildlife
11 Service;

12 (B) the Bureau of Indian Affairs;

13 (C) the Forest Service;

14 (D) the Environmental Protection Agency;

15 (E) the Corps of Engineers;

16 (F) the Department of Defense; or

17 (G) any State in which a geothermal
18 project is located.

19 (8) REPORTS.—Not later than 3 years after the
20 date of enactment of this Act, the Secretary shall
21 submit to Congress a report that describes—

22 (A) the progress of the Program; and

23 (B) any problems relating to leasing, per-
24 mitting, or siting with respect to geothermal en-
25 ergy development on Federal land.

1 (9) SAVINGS CLAUSE.—Nothing in this sub-
2 section affects—

3 (A) the operation of any Federal or State
4 law; or

5 (B) any delegation of authority made by
6 the head of a Federal agency any employee of
7 which is participating in the Program.

8 **SEC. 1204. WIND ENERGY RESEARCH AND DEVELOPMENT.**

9 (a) DEFINITIONS.—In this section:

10 (1) ECONOMICALLY DISTRESSED AREA.—The
11 term “economically distressed area” means an area
12 described in section 301(a) of the Public Works and
13 Economic Development Act of 1965 (42 U.S.C.
14 3161(a)).

15 (2) ELIGIBLE ENTITY.—The term “eligible enti-
16 ty” means—

17 (A) an institution of higher education;

18 (B) a National Laboratory;

19 (C) a Federal research agency;

20 (D) a State research agency;

21 (E) a research agency associated with a
22 territory or freely associated state;

23 (F) a tribal energy development organiza-
24 tion;

25 (G) an Indian tribe;

1 (H) a tribal organization;

2 (I) a Native Hawaiian community-based
3 organization;

4 (J) a nonprofit research organization;

5 (K) an industrial entity;

6 (L) any other entity, as determined by the
7 Secretary; and

8 (M) a consortium of 2 or more entities de-
9 scribed in subparagraphs (A) through (L).

10 (3) 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. 5304).

14 (4) INSTITUTION OF HIGHER EDUCATION.—The
15 term “institution of higher education” has the
16 meaning given the term in section 101 of the Higher
17 Education Act of 1965 (20 U.S.C. 1001).

18 (5) NATIVE HAWAIIAN COMMUNITY-BASED OR-
19 GANIZATION.—The term “Native Hawaiian commu-
20 nity-based organization” has the meaning given the
21 term in section 6207 of the Elementary and Sec-
22 ondary Education Act of 1965 (20 U.S.C. 7517).

23 (6) PROGRAM.—The term “program” means
24 the program established under subsection (b)(1).

1 (7) TERRITORY OR FREELY ASSOCIATED
2 STATE.—The term “territory or freely associated
3 state” has the meaning given the term “insular
4 area” in section 1404 of the Food and Agriculture
5 Act of 1977 (7 U.S.C. 3103).

6 (8) TRIBAL ENERGY DEVELOPMENT ORGANIZA-
7 TION.—The term “tribal energy development organi-
8 zation” has the meaning given the term in section
9 2601 of the Energy Policy Act of 1992 (25 U.S.C.
10 3501).

11 (9) TRIBAL ORGANIZATION.—The term “tribal
12 organization” has the meaning given the term in
13 section 4 of the Indian Self-Determination and Edu-
14 cation Assistance Act (25 U.S.C. 5304).

15 (b) WIND ENERGY TECHNOLOGY PROGRAM.—

16 (1) ESTABLISHMENT.—

17 (A) IN GENERAL.—The Secretary shall es-
18 tablish a program to conduct research, develop-
19 ment, testing, evaluation, demonstration, and
20 commercialization of wind energy technologies
21 in accordance with this subsection.

22 (B) PURPOSES.—The purposes of the pro-
23 gram are the following:

24 (i) To improve the energy efficiency,
25 cost effectiveness, reliability, resilience, se-

1 curity, integration, manufacturability, and
2 recyclability of wind energy technologies.

3 (ii) To optimize the performance and
4 operation of wind energy components, tur-
5 bines, and systems, including through the
6 development of new materials, hardware,
7 and software.

8 (iii) To optimize the design and
9 adaptability of wind energy technologies to
10 the broadest practical range of geographic,
11 atmospheric, offshore, and other site condi-
12 tions, including—

13 (I) at varying hub heights; and

14 (II) through the use of computer
15 modeling.

16 (iv) To support the integration of
17 wind energy technologies with—

18 (I) the electric grid, including
19 transmission, distribution, microgrids,
20 and distributed energy systems; and

21 (II) other energy technologies
22 and systems, such as—

23 (aa) other generation
24 sources;

1 (bb) demand response tech-
2 nologies;

3 (cc) energy storage tech-
4 nologies; and

5 (dd) hybrid systems.

6 (v) To reduce the cost and risk across
7 the lifespan of wind energy technologies,
8 including—

9 (I) manufacturing, permitting,
10 construction, operations, maintenance,
11 and recycling; and

12 (II) through the development of
13 solutions to transportation barriers to
14 wind components.

15 (vi) To reduce and mitigate any po-
16 tential negative impacts of wind energy
17 technologies on—

18 (I) human communities;

19 (II) military operations;

20 (III) aviation;

21 (IV) radar; and

22 (V) wildlife and wildlife habitats.

23 (vii) To address barriers to the com-
24 mercialization and export of wind energy
25 technologies.

1 (viii) To support the domestic wind
2 industry, workforce, and supply chain.

3 (C) TARGETS.—Not later than 180 days
4 after the date of enactment of this Act, the Sec-
5 retary shall establish targets for the program
6 relating to near-term (up to 2 years), mid-term
7 (up to 7 years), and long-term (up to 15 years)
8 challenges to the advancement of wind energy
9 technologies, including onshore, offshore, dis-
10 tributed, and off-grid technologies.

11 (2) ACTIVITIES.—

12 (A) TYPES OF ACTIVITIES.—In carrying
13 out the program, the Secretary shall carry out
14 research, development, demonstration, and com-
15 mercialization activities, including—

16 (i) awarding grants and awards, on a
17 competitive, merit-reviewed basis;

18 (ii) performing precompetitive re-
19 search and development;

20 (iii) establishing or maintaining dem-
21 onstration facilities and projects, including
22 through stewardship of existing facilities
23 such as the National Wind Test Center;

24 (iv) providing technical assistance;

- 1 (v) entering into contracts and cooper-
2 ative agreements;
3 (vi) providing small business vouchers;
4 (vii) conducting education and out-
5 reach activities;
6 (viii) conducting workforce develop-
7 ment activities; and
8 (ix) conducting analyses, studies, and
9 reports.

10 (B) SUBJECT AREAS.—The Secretary shall
11 carry out research, development, testing, eval-
12 uation, demonstration, and commercialization
13 activities in the following subject areas:

14 (i) Wind power plant performance, op-
15 erations, and security.

16 (ii) New materials and designs relat-
17 ing to all hardware, software, and compo-
18 nents of wind energy technologies, includ-
19 ing alternatives to minerals and other com-
20 modities from foreign sources that are de-
21 termined to be vulnerable to disruption.

22 (iii) Advanced wind energy manufac-
23 turing technologies and practices, including
24 materials, processes, and design.

1 (iv) Offshore wind-specific projects
2 and plants, including—

3 (I) the deep water floating sys-
4 tems, materials, components, and op-
5 eration of offshore facilities; and

6 (II) the monitoring and analysis
7 of site and environmental consider-
8 ations unique to offshore sites.

9 (v) Integration of wind energy tech-
10 nologies with—

11 (I) the electric grid, including
12 transmission, distribution, microgrids,
13 and distributed energy systems; and

14 (II) other energy technologies, in-
15 cluding—

16 (aa) other generation
17 sources;

18 (bb) demand response tech-
19 nologies; and

20 (cc) energy storage tech-
21 nologies.

22 (vi) Methods to improve the lifetime,
23 maintenance, recycling, and reuse of wind
24 energy components and systems.

1 (vii) Wind power forecasting and at-
2 mospheric measurement systems, including
3 for turbines and plant systems of varying
4 height.

5 (viii) Hybrid wind energy systems,
6 grid-connected and off-grid, that incor-
7 porate diverse—

8 (I) generation sources;

9 (II) loads; and

10 (III) storage technologies.

11 (ix) Reducing, including through edu-
12 cation and outreach activities, market bar-
13 riers to the adoption of wind energy tech-
14 nologies, such as impacts on, or challenges
15 relating to—

16 (I) distributed wind technologies,
17 including the development of best
18 practices, models, and voluntary
19 streamlined processes for local permit-
20 ting of distributed wind energy sys-
21 tems to reduce costs;

22 (II) airspace;

23 (III) military uses;

24 (IV) radar;

25 (V) local communities;

1 (VI) wildlife and wildlife habitats;

2 and

3 (VII) any other appropriate mat-

4 ter, as determined by the Secretary.

5 (x) Advanced physics-based and data

6 analysis computational tools, in coordina-

7 tion with the high-performance computing

8 programs of the Department.

9 (xi) Technologies for distributed wind,

10 including micro, small, and medium tur-

11 bines and the components of those tur-

12 bines.

13 (xii) Transformational technologies

14 for harnessing wind energy.

15 (xiii) Other research areas that ad-

16 vance the purposes of the program, as de-

17 termined by the Secretary.

18 (C) PRIORITIZATION.—In carrying out ac-

19 tivities under the program, the Secretary shall

20 give priority to projects that—

21 (i) are located in geographically di-

22 verse regions of the United States;

23 (ii) support the development or dem-

24 onstration of projects—

1 (I) in collaboration with tribal
2 energy development organizations, In-
3 dian tribes, tribal organizations, Na-
4 tive Hawaiian community-based orga-
5 nizations, or territories or freely asso-
6 ciated states; or

7 (II) in economically distressed
8 areas;

9 (iii) can be replicated in a variety of
10 regions and climates; and

11 (iv) include business commercializa-
12 tion plans that have the potential for—

13 (I) domestic manufacturing and
14 production of wind energy tech-
15 nologies; or

16 (II) exports of wind energy tech-
17 nologies.

18 (D) COORDINATION.—To the maximum ex-
19 tent practicable, the Secretary shall coordinate
20 activities under the program with other relevant
21 programs and capabilities of the Department
22 and other Federal research programs.

23 (3) WIND TECHNICIAN TRAINING GRANT PRO-
24 GRAM.—The Secretary may award grants, on a com-
25 petitive basis, to eligible entities to purchase large

1 pieces of wind component equipment, such as nacelles,
2 nacelles, towers, and blades, for use in training wind
3 technician students in onshore or offshore wind ap-
4 plications.

5 (4) WAGES.—Notwithstanding any other provi-
6 sion of law, all laborers and mechanics employed by
7 contractors or subcontractors on projects funded by
8 grants under this subsection shall be paid wages at
9 rates not less than those prevailing on projects of a
10 similar character in the locality, as determined by
11 the Secretary of Labor, in accordance with sub-
12 chapter IV of chapter 31 of title 40, United States
13 Code.

14 (5) WIND ENERGY PROGRAM STRATEGIC VI-
15 SION.—

16 (A) IN GENERAL.—Not later than Sep-
17 tember 1, 2022, and every 6 years thereafter,
18 the Secretary shall submit to Congress a report
19 on the strategic vision, progress, goals, and tar-
20 gets of the program, including assessments of
21 wind energy markets and manufacturing.

22 (B) PREPARATION.—The Secretary shall
23 coordinate the preparation of the report under
24 subparagraph (A) with—

25 (i) existing peer review processes;

1 (ii) studies conducted by the National
2 Laboratories; and

3 (iii) the multiyear program planning
4 required under section 994 of the Energy
5 Policy Act of 2005 (42 U.S.C. 16358).

6 (6) AUTHORIZATION OF APPROPRIATIONS.—

7 There is authorized to be appropriated to the Sec-
8 retary to carry out the program \$120,000,000 for
9 each of fiscal years 2021 through 2025.

10 (c) CONFORMING AMENDMENTS.—

11 (1) Section 4 of the Renewable Energy and En-
12 ergy Efficiency Technology Competitiveness Act of
13 1989 (42 U.S.C. 12003) is amended—

14 (A) in the section heading by striking
15 “**WIND,**”;

16 (B) in subsection (a)—

17 (i) in the matter preceding paragraph
18 (1), by striking “wind,”;

19 (ii) by striking paragraph (1); and

20 (iii) by redesignating paragraphs (2)
21 through (5) as paragraphs (1) through (4),
22 respectively; and

23 (C) in subsection (c), in the matter pre-
24 ceding paragraph (1), by striking “the Wind
25 Energy Research Program,”.

1 (2) Section 931(a)(2) of the Energy Policy Act
2 of 2005 (42 U.S.C. 16231(a)(2)) is amended—

3 (A) by striking subparagraph (B); and

4 (B) by redesignating subparagraphs (C)
5 through (E) as subparagraphs (B) through (D),
6 respectively.

7 (3) Section 636 of the Energy Independence
8 and Security Act of 2007 (42 U.S.C. 17215) is
9 amended by striking “section 931(a)(2)(E)(i)” and
10 all that follows through the period at the end and
11 inserting “subparagraph (D)(i) of section 931(a)(2)
12 of the Energy Policy Act of 2005 (42 U.S.C.
13 16231(a)(2)).”.

14 **SEC. 1205. SOLAR ENERGY RESEARCH AND DEVELOPMENT.**

15 (a) DEFINITIONS.—In this section:

16 (1) ECONOMICALLY DISTRESSED AREA.—The
17 term “economically distressed area” means an area
18 described in section 301(a) of the Public Works and
19 Economic Development Act of 1965 (42 U.S.C.
20 3161(a)).

21 (2) ELIGIBLE ENTITY.—The term “eligible enti-
22 ty” means—

23 (A) an institution of higher education;

24 (B) a National Laboratory;

25 (C) a Federal research agency;

- 1 (D) a State research agency;
- 2 (E) a research agency associated with a
3 territory or freely associated state;
- 4 (F) a tribal energy development organiza-
5 tion;
- 6 (G) an Indian tribe;
- 7 (H) a tribal organization;
- 8 (I) a Native Hawaiian community-based
9 organization;
- 10 (J) a nonprofit research organization;
- 11 (K) an industrial entity;
- 12 (L) any other entity, as determined by the
13 Secretary; and
- 14 (M) a consortium of 2 or more entities de-
15 scribed in subparagraphs (A) through (L).

16 (3) INDIAN TRIBE.—The term “Indian tribe”
17 has the meaning given the term in section 4 of the
18 Indian Self-Determination and Education Assistance
19 Act (25 U.S.C. 5304).

20 (4) INSTITUTION OF HIGHER EDUCATION.—The
21 term “institution of higher education” has the
22 meaning given the term in section 101 of the Higher
23 Education Act of 1965 (20 U.S.C. 1001).

24 (5) NATIVE HAWAIIAN COMMUNITY-BASED OR-
25 GANIZATION.—The term “Native Hawaiian commu-

1 nity-based organization” has the meaning given the
2 term in section 6207 of the Elementary and Sec-
3 ondary Education Act of 1965 (20 U.S.C. 7517).

4 (6) PHOTOVOLTAIC DEVICE.—The term “photo-
5 voltaic device” means—

6 (A) a device that converts light directly
7 into electricity through a solid-state, semicon-
8 ductor process;

9 (B) the photovoltaic cells of a device de-
10 scribed in subparagraph (A); and

11 (C) the electronic and electrical compo-
12 nents of a device described in subparagraph
13 (A).

14 (7) PROGRAM.—The term “program” means
15 the program established under subsection (b)(1)(A).

16 (8) SOLAR ENERGY.—The term “solar energy”
17 means—

18 (A) thermal or electric energy derived from
19 radiation from the Sun; or

20 (B) energy resulting from a chemical reac-
21 tion caused by radiation recently originated in
22 the Sun.

23 (9) TERRITORY OR FREELY ASSOCIATED
24 STATE.—The term “territory or freely associated
25 state” has the meaning given the term “insular

1 area” in section 1404 of the Food and Agriculture
2 Act of 1977 (7 U.S.C. 3103).

3 (10) TRIBAL ENERGY DEVELOPMENT ORGANI-
4 ZATION.—The term “tribal energy development or-
5 ganization” has the meaning given the term in sec-
6 tion 2601 of the Energy Policy Act of 1992 (25
7 U.S.C. 3501).

8 (11) TRIBAL ORGANIZATION.—The term “tribal
9 organization” has the meaning given the term in
10 section 4 of the Indian Self-Determination and Edu-
11 cation Assistance Act (25 U.S.C. 5304).

12 (b) SOLAR ENERGY TECHNOLOGY PROGRAM.—

13 (1) ESTABLISHMENT.—

14 (A) IN GENERAL.—The Secretary shall es-
15 tablish a program to conduct research, develop-
16 ment, testing, evaluation, demonstration, and
17 commercialization of solar energy technologies
18 in accordance with this subsection.

19 (B) PURPOSES.—The purposes of the pro-
20 gram are the following:

21 (i) To improve the energy efficiency,
22 cost effectiveness, reliability, resilience, se-
23 curity, integration, manufacturability, and
24 recyclability of solar energy technologies.

1 (ii) To optimize the performance and
2 operation of solar energy components,
3 cells, and systems, and enabling tech-
4 nologies, including through the develop-
5 ment of new materials, hardware, and soft-
6 ware.

7 (iii) To optimize the design and
8 adaptability of solar energy systems to the
9 broadest practical range of geographic and
10 atmospheric conditions.

11 (iv) To support the integration of
12 solar energy technologies with the electric
13 grid and complementary energy tech-
14 nologies.

15 (v) To create and improve the conver-
16 sion of solar energy to other useful forms
17 of energy or other products.

18 (vi) To reduce and mitigate any po-
19 tential negative impacts of solar energy
20 technologies on humans, wildlife, and wild-
21 life habitats.

22 (vii) To address barriers to the com-
23 mercialization and export of solar energy
24 technologies.

1 (viii) To support the domestic solar
2 industry, workforce, and supply chain.

3 (C) TARGETS.—Not later than 180 days
4 after the date of enactment of this Act, the Sec-
5 retary shall establish targets for the program to
6 address near-term (up to 2 years), mid-term
7 (up to 7 years), and long-term (up to 15 years)
8 challenges to the advancement of solar energy
9 systems.

10 (2) ACTIVITIES.—

11 (A) TYPES OF ACTIVITIES.—In carrying
12 out the program, the Secretary shall carry out
13 research, development, demonstration, and com-
14 mercialization activities, including—

15 (i) awarding grants and awards, on a
16 competitive, merit-reviewed basis;

17 (ii) performing precompetitive re-
18 search and development;

19 (iii) establishing or maintaining dem-
20 onstration facilities and projects, including
21 through stewardship of existing facilities;

22 (iv) providing technical assistance;

23 (v) entering into contracts and cooper-
24 ative agreements;

25 (vi) providing small business vouchers;

- 1 (vii) establishing prize competitions;
2 (viii) conducting education and out-
3 reach activities; and
4 (ix) conducting analyses, studies, and
5 reports.

6 (B) SUBJECT AREAS.—The Secretary shall
7 carry out research, development, testing, eval-
8 uation, demonstration, and commercialization
9 activities in the following subject areas:

10 (i) Advanced solar energy tech-
11 nologies, including—

12 (I) new materials, components,
13 designs, and systems, including
14 perovskites;

15 (II) advanced photovoltaic and
16 thin-film devices;

17 (III) concentrated solar power;

18 (IV) solar heating and cooling;

19 and

20 (V) enabling technologies for
21 solar energy systems, including hard-
22 ware and software.

23 (ii) Solar energy technology perform-
24 ance, operations, and security.

1 (iii) Integration of solar energy tech-
2 nologies with—

3 (I) the electric grid, including
4 transmission, distribution, microgrids,
5 and distributed energy systems;

6 (II) other energy technologies, in-
7 cluding—

8 (aa) other generation
9 sources;

10 (bb) demand response tech-
11 nologies; and

12 (cc) energy storage tech-
13 nologies; and

14 (III) other nonelectric applica-
15 tions, such as in the agriculture,
16 transportation, industrial, and fuels
17 sectors.

18 (iv) Advanced solar energy manufac-
19 turing technologies and practices, including
20 materials, processes, and design.

21 (v) Methods to improve the lifetime,
22 maintenance, recycling, and reuse of solar
23 energy components and systems.

24 (vi) Solar energy forecasting, mod-
25 eling, and atmospheric measurement sys-

1 tems, including for small-scale, large-scale,
2 and aggregated systems.

3 (vii) Hybrid solar energy systems that
4 incorporate diverse—

5 (I) generation sources;

6 (II) loads; and

7 (III) storage technologies.

8 (viii) Reducing market barriers to the
9 adoption of solar energy technologies, in-
10 cluding impacts on, or challenges relating
11 to—

12 (I) distributed solar technologies,
13 including the development of best
14 practices, models, and voluntary
15 streamlined processes for local permit-
16 ting of distributed solar energy sys-
17 tems to reduce costs;

18 (II) local communities;

19 (III) wildlife and wildlife habi-
20 tats; and

21 (IV) any other appropriate mat-
22 ter, as determined by the Secretary.

23 (ix) Transformational technologies for
24 harnessing solar energy.

1 (x) Other research areas that advance
2 the purposes of the program, as deter-
3 mined by the Secretary.

4 (C) PRIORITIZATION.—In carrying out ac-
5 tivities under the program, the Secretary shall
6 give priority to projects that—

7 (i) are located in a geographically di-
8 verse range of eligible entities;

9 (ii) support the development or dem-
10 onstration of projects—

11 (I) in collaboration with tribal
12 energy development organizations, In-
13 dian tribes, tribal organizations, Na-
14 tive Hawaiian community-based orga-
15 nizations, or territories or freely asso-
16 ciated states; or

17 (II) in economically distressed
18 areas;

19 (iii) can be replicated in a variety of
20 regions and climates; and

21 (iv) include business commercializa-
22 tion plans that have the potential for—

23 (I) domestic manufacturing and
24 production of solar energy tech-
25 nologies; or

1 (II) exports of solar energy tech-
2 nologies.

3 (D) COORDINATION.—To the maximum ex-
4 tent practicable, the Secretary shall coordinate
5 activities under the program with other relevant
6 programs and capabilities of the Department
7 and other Federal research programs.

8 (E) USE OF FUNDS.—To the extent that
9 funding is not otherwise available through other
10 Federal programs or power purchase agree-
11 ments, funding awarded under this paragraph
12 may be used for additional nontechnology costs,
13 as determined to be appropriate by the Sec-
14 retary, such as engineering or feasibility stud-
15 ies.

16 (3) ADVANCED SOLAR ENERGY MANUFAC-
17 TURING INITIATIVE.—

18 (A) GRANTS.—In addition to the program
19 activities described in paragraph (2), in car-
20 rying out the program, the Secretary shall
21 award multiyear grants to eligible entities for
22 research, development, and demonstration
23 projects to advance new solar energy manufac-
24 turing technologies and techniques.

1 (B) PRIORITY.—In awarding grants under
2 subparagraph (A), to the extent practicable, the
3 Secretary shall give priority to solar energy
4 manufacturing projects that—

5 (i) increase efficiency and cost effec-
6 tiveness in—

7 (I) the manufacturing process;

8 and

9 (II) the use of resources.

10 (ii) support domestic supply chains for
11 materials and components;

12 (iii) identify and incorporate nonhaz-
13 ardous alternative materials for compo-
14 nents and devices;

15 (iv) operate in partnership with tribal
16 energy development organizations, Indian
17 tribes, tribal organizations, Native Hawai-
18 ian community-based organizations, or ter-
19 ritories or freely associated states; or

20 (v) are located in economically dis-
21 tressed areas.

22 (C) EVALUATION.—Not later than 3 years
23 after the date of enactment of this Act, and
24 every 4 years thereafter, the Secretary shall
25 conduct, and make available to the public and

1 the relevant committees of Congress, an inde-
2 pendent review of the progress of the grants
3 awarded under subparagraph (A).

4 (4) SOLAR ENERGY TECHNOLOGY RECYCLING
5 RESEARCH, DEVELOPMENT, AND DEMONSTRATION
6 PROGRAM.—

7 (A) IN GENERAL.—In addition to the pro-
8 gram activities described in paragraph (2), in
9 carrying out the program, the Secretary shall
10 award multiyear grants to eligible entities for
11 research, development, and demonstration
12 projects to create innovative and practical ap-
13 proaches to increase the reuse and recycling of
14 solar energy technologies, including—

15 (i) by increasing the efficiency and
16 cost effectiveness of the recovery of raw
17 materials from solar energy technology
18 components and systems, including ena-
19 bling technologies such as inverters;

20 (ii) by minimizing environmental im-
21 pacts from the recovery and disposal proc-
22 esses;

23 (iii) by addressing any barriers to the
24 research, development, demonstration, and
25 commercialization of technologies and

1 processes for the disassembly and recycling
2 of solar energy devices;

3 (iv) by developing alternative mate-
4 rials, designs, manufacturing processes,
5 and other aspects of solar energy tech-
6 nologies and the disassembly and resource
7 recovery process that enable efficient, cost
8 effective, and environmentally responsible
9 disassembly of, and resource recovery
10 from, solar energy technologies; and

11 (v) strategies to increase consumer ac-
12 ceptance of, and participation in, the recy-
13 cling of photovoltaic devices.

14 (B) DISSEMINATION OF RESULTS.—The
15 Secretary shall make available to the public and
16 the relevant committees of Congress the results
17 of the projects carried out through grants
18 awarded under subparagraph (A), including any
19 educational and outreach materials.

20 (5) SOLAR ENERGY TECHNOLOGY MATERIALS
21 PHYSICAL PROPERTY DATABASE.—

22 (A) IN GENERAL.—Not later than Sep-
23 tember 1, 2022, the Secretary shall establish a
24 comprehensive physical property database of
25 materials for use in solar energy technologies,

1 which shall identify the type, quantity, country
2 of origin, source, significant uses, and physical
3 properties of materials used in solar energy
4 technologies.

5 (B) COORDINATION.—In establishing the
6 database described in subparagraph (A), the
7 Secretary shall coordinate with—

8 (i) the Director of the National Insti-
9 tute of Standards and Technology;

10 (ii) the Administrator of the Environ-
11 mental Protection Agency;

12 (iii) the Secretary of the Interior; and

13 (iv) relevant industry stakeholders, as
14 determined by the Secretary.

15 (6) SOLAR ENERGY TECHNOLOGY PROGRAM
16 STRATEGIC VISION.—

17 (A) IN GENERAL.—Not later than Sep-
18 tember 1, 2022, and every 6 years thereafter,
19 the Secretary shall submit to Congress a report
20 on the strategic vision, progress, goals, and tar-
21 gets of the program, including assessments of
22 solar energy markets and manufacturing.

23 (B) PREPARATION.—The Secretary shall
24 coordinate the preparation of the report under
25 subparagraph (A) with—

200

- 1 (i) existing peer review processes;
- 2 (ii) studies conducted by the National
- 3 Laboratories; and
- 4 (iii) the multiyear program planning
- 5 required under section 994 of the Energy
- 6 Policy Act of 2005 (42 U.S.C. 16358).

7 (7) AUTHORIZATION OF APPROPRIATIONS.—

8 There is authorized to be appropriated to the Sec-

9 retary to carry out the program \$270,000,000 for

10 each of fiscal years 2021 through 2025.

11 (c) CONFORMING AMENDMENTS.—

12 (1) The Solar Energy Research, Development,

13 and Demonstration Act of 1974 (42 U.S.C. 5551 et

14 seq.) is repealed.

15 (2) Section 6(b)(3) of the Federal Nonnuclear

16 Energy Research and Development Act of 1974 (42

17 U.S.C. 5905(b)(3)) is amended—

18 (A) by striking subparagraph (L); and

19 (B) by redesignating subparagraphs (M)

20 through (S) as subparagraphs (L) through (R),

21 respectively.

22 (3) The Solar Photovoltaic Energy Research,

23 Development, and Demonstration Act of 1978 (42

24 U.S.C. 5581 et seq.) is repealed.

1 (4) Section 4 of the Renewable Energy and En-
2 ergy Efficiency Technology Competitiveness Act of
3 1989 (42 U.S.C. 12003) is amended—

4 (A) in the section heading, by striking
5 **“PHOTOVOLTAICS, AND SOLAR THERMAL”**
6 and inserting **“ALCOHOL FROM BIOMASS**
7 **AND OTHER TECHNOLOGY”**;

8 (B) in subsection (a)—

9 (i) in the matter preceding paragraph

10 (1) (as redesignated by section
11 1204(c)(1)(B)(iii)), by striking
12 “photovoltaics, and solar thermal energy”
13 and inserting “alcohol from biomass and
14 other energy technology”;

15 (ii) by striking paragraphs (1) and (2)

16 (as redesignated by section
17 1204(c)(1)(B)(iii)); and

18 (iii) by redesignating paragraphs (3)

19 and (4) (as redesignated by section
20 1204(c)(1)(B)(iii)) as paragraphs (1) and
21 (2), respectively; and

22 (C) in subsection (c)—

23 (i) in the matter preceding paragraph

24 (1), by striking “the Photovoltaic Energy

1 Systems Program, the Solar Thermal En-
2 ergy Systems Program,”;

3 (ii) in paragraph (1)—

4 (I) by striking subparagraph (A);

5 and

6 (II) by redesignating subpara-
7 graphs (B) and (C) as subparagraphs
8 (A) and (B), respectively; and

9 (iii) in paragraph (2)—

10 (I) by striking subparagraph (A);

11 and

12 (II) by redesignating subpara-
13 graphs (B) and (C) as subparagraphs
14 (A) and (B), respectively.

15 (5) Section 931 of the Energy Policy Act of
16 2005 (42 U.S.C. 16231) is amended—

17 (A) in subsection (a)(2)—

18 (i) by striking subparagraph (A); and

19 (ii) by redesignating subparagraphs
20 (B) through (D) (as redesignated by sec-
21 tion 1204(c)(2)(B)) as subparagraphs (A)
22 through (C), respectively;

23 (B) by striking subsection (d); and

1 (C) by redesignating subsections (e)
2 through (g) as subsections (d) through (f), re-
3 spectively.

4 (6)(A) Sections 606 and 607 of the Energy
5 Independence and Security Act of 2007 (42 U.S.C.
6 17174, 17175) are repealed.

7 (B) The table of contents in section 1(b) of the
8 Energy Independence and Security Act of 2007
9 (Public Law 110–140; 121 Stat. 1495) is amended
10 by striking the items relating to sections 606 and
11 607.

12 (d) SAVINGS PROVISION.—The repeal of the Solar
13 Energy Research, Development, and Demonstration Act
14 of 1974 (42 U.S.C. 5551 et seq.) under subsection (c)(1)
15 shall not affect the authority of the Secretary to conduct
16 research and development on solar energy.

17 **Subtitle C—Energy Storage**

18 **SEC. 1301. BETTER ENERGY STORAGE TECHNOLOGY.**

19 (a) DEFINITIONS.—In this section:

20 (1) ENERGY STORAGE SYSTEM.—The term “en-
21 ergy storage system” means any system, equipment,
22 facility, or technology that—

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

1 (B)(i) uses mechanical, electrochemical,
2 thermal, electrolysis, or other processes to con-
3 vert and store electric energy that was gen-
4 erated at an earlier time for use at a later time;
5 or

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

12 (2) PROGRAM.—The term “program” means
13 the Energy Storage System Research, Development,
14 and Deployment Program established under sub-
15 section (b)(1).

16 (b) ENERGY STORAGE SYSTEM RESEARCH,
17 DEVELOPMENT, AND DEPLOYMENT PROGRAM.—

18 (1) ESTABLISHMENT.—Not later than 180 days
19 after the date of enactment of this Act, the Sec-
20 retary shall establish a program, to be known as the
21 “Energy Storage System Research, Development,
22 and Deployment Program”.

23 (2) INITIAL PROGRAM OBJECTIVES.—The pro-
24 gram shall focus on research, development, and de-
25 ployment of—

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

3 (i) for large-scale commercial deploy-
4 ment;

5 (ii) for deployment at cost targets es-
6 tablished by the Secretary;

7 (iii) for hourly and subhourly dura-
8 tions required to provide reliability services
9 to the grid;

10 (iv) for daily durations, which have—

11 (I) the capacity to discharge en-
12 ergy for a minimum of 6 hours; and

13 (II) a system lifetime of at least
14 20 years under regular operation;

15 (v) for weekly or monthly durations,
16 which have—

17 (I) the capacity to discharge en-
18 ergy for 10 to 100 hours, at a min-
19 imum; and

20 (II) a system lifetime of at least
21 20 years under regular operation; and

22 (vi) for seasonal durations, which
23 have—

1 (I) the capability to address sea-
2 sonal variations in supply and de-
3 mand; and

4 (II) a system lifetime of at least
5 20 years under regular operation;

6 (B) distributed energy storage technologies
7 and applications, including building-grid inte-
8 gration;

9 (C) transportation energy storage tech-
10 nologies and applications, including vehicle-grid
11 integration;

12 (D) cost-effective systems and methods
13 for—

14 (i) the reclamation, recycling, and dis-
15 posal of energy storage materials, includ-
16 ing lithium, cobalt, nickel, and graphite;
17 and

18 (ii) the reuse and repurposing of en-
19 ergy storage system technologies;

20 (E) advanced control methods for energy
21 storage systems;

22 (F) pumped hydroelectric energy storage
23 systems to advance—

24 (i) adoption of innovative technologies,
25 including—

- 1 (I) adjustable-speed, ternary, and
2 other new pumping and generating
3 equipment designs;
- 4 (II) modular systems;
- 5 (III) closed-loop systems, includ-
6 ing mines and quarries; and
- 7 (IV) other critical equipment and
8 materials for pumped hydroelectric
9 energy storage, as determined by the
10 Secretary; and
- 11 (ii) reductions of equipment costs,
12 civil works costs, and construction times
13 for pumped hydroelectric energy storage
14 projects, with the goal of reducing those
15 costs by 50 percent;
- 16 (G) models and tools to demonstrate the
17 benefits of energy storage to—
- 18 (i) power and water supply systems;
- 19 (ii) electric generation portfolio opti-
20 mization; and
- 21 (iii) expanded deployment of other re-
22 newable energy technologies, including in
23 hybrid energy storage systems; and
- 24 (H) energy storage use cases from indi-
25 vidual and combination technology applications,

1 including value from various-use cases and en-
2 ergy storage services.

3 (3) TESTING AND VALIDATION.—In coordina-
4 tion with 1 or more National Laboratories, the Sec-
5 retary shall accelerate the development, standardized
6 testing, and validation of energy storage systems
7 under the program by developing testing and evalua-
8 tion methodologies for—

9 (A) storage technologies, controls, and
10 power electronics for energy storage systems
11 under a variety of operating conditions;

12 (B) standardized and grid performance
13 testing for energy storage systems, materials,
14 and technologies during each stage of develop-
15 ment, beginning with the research stage and
16 ending with the deployment stage;

17 (C) reliability, safety, and durability test-
18 ing under standard and evolving duty cycles;
19 and

20 (D) accelerated life testing protocols to
21 predict estimated lifetime metrics with accu-
22 racy.

23 (4) PERIODIC EVALUATION OF PROGRAM OB-
24 JECTIVES.—Not less frequently than once every cal-
25 endar year, the Secretary shall evaluate and, if nec-

1 (II)(aa) do not support the ac-
2 tivities or projects described in sub-
3 clause (I); but

4 (bb) are important to the devel-
5 opment of energy storage systems and
6 the mission of the Department, as de-
7 termined by the Secretary;

8 (iv) include expected timelines for—

9 (I) the accomplishment of rel-
10 evant objectives under current pro-
11 grams of the Department relating to
12 energy storage systems; and

13 (II) the commencement of any
14 new initiatives within the Department
15 relating to energy storage systems to
16 accomplish those objectives; and

17 (v) incorporate relevant activities de-
18 scribed in the Grid Modernization Initia-
19 tive Multi-Year Program Plan.

20 (C) SUBMISSION TO CONGRESS.—Not later
21 than 180 days after the date of enactment of
22 this Act, the Secretary shall submit to the Com-
23 mittee on Energy and Natural Resources of the
24 Senate and the Committees on Energy and
25 Commerce and Science, Space, and Technology

1 of the House of Representatives the strategic
2 plan developed under subparagraph (A).

3 (D) UPDATES TO PLAN.—The Secretary—

4 (i) shall annually review the strategic
5 plan developed under subparagraph (A);
6 and

7 (ii) may periodically revise the stra-
8 tegic plan as appropriate.

9 (6) LEVERAGING OF RESOURCES.—The pro-
10 gram may be led by a specific office of the Depart-
11 ment, but shall be cross-cutting in nature, so that in
12 carrying out activities under the program, the Sec-
13 retary (or a designee of the Secretary charged with
14 leading the program) shall leverage existing Federal
15 resources, including, at a minimum, the expertise
16 and resources of—

17 (A) the Office of Electricity Delivery and
18 Energy Reliability;

19 (B) the Office of Energy Efficiency and
20 Renewable Energy, including the Water Power
21 Technologies Office; and

22 (C) the Office of Science, including—

23 (i) the Basic Energy Sciences Pro-
24 gram;

1 (ii) the Advanced Scientific Com-
2 puting Research Program;

3 (iii) the Biological and Environmental
4 Research Program; and

5 (D) the Electricity Storage Research Ini-
6 tiative established under section 975 of the En-
7 ergy Policy Act of 2005 (42 U.S.C. 16315).

8 (7) PROTECTING PRIVACY AND SECURITY.—In
9 carrying out this subsection, the Secretary shall
10 identify, incorporate, and follow best practices for
11 protecting the privacy of individuals and businesses
12 and the respective sensitive data of the individuals
13 and businesses, including by managing privacy risk
14 and implementing the Fair Information Practice
15 Principles of the Federal Trade Commission for the
16 collection, use, disclosure, and retention of individual
17 electric consumer information in accordance with the
18 Office of Management and Budget Circular A–130
19 (or successor circulars).

20 (c) ENERGY STORAGE DEMONSTRATION PROJECTS;
21 PILOT GRANT PROGRAM.—

22 (1) DEMONSTRATION PROJECTS.—Not later
23 than September 30, 2023, the Secretary shall, to the
24 maximum extent practicable, enter into agreements
25 to carry out not fewer than 5 energy storage system

1 demonstration projects, including at least 1 energy
2 storage system demonstration project designed to
3 further the development of technologies described in
4 clause (v) or (vi) of subsection (b)(2)(A).

5 (2) ENERGY STORAGE PILOT GRANT PRO-
6 GRAM.—

7 (A) DEFINITION OF ELIGIBLE ENTITY.—In
8 this paragraph, the term “eligible entity”
9 means—

10 (i) a State energy office (as defined in
11 section 124(a) of the Energy Policy Act of
12 2005 (42 U.S.C. 15821(a)));

13 (ii) an Indian tribe (as defined in sec-
14 tion 4 of the Native American Housing As-
15 sistance and Self-Determination Act of
16 1996 (25 U.S.C. 4103);

17 (iii) a tribal organization (as defined
18 in section 3765 of title 38, United States
19 Code);

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

23 (v) an electric utility, including—

24 (I) an electric cooperative;

1 (II) a political subdivision of a
2 State, such as a municipally owned
3 electric utility, or any agency, author-
4 ity, corporation, or instrumentality of
5 a State political subdivision; and

6 (III) an investor-owned utility;
7 and

8 (vi) a private energy storage company.

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

14 (C) SELECTION REQUIREMENTS.—In se-
15 lecting eligible entities to receive a grant under
16 subparagraph (B), the Secretary shall, to the
17 maximum extent practicable—

18 (i) ensure regional diversity among el-
19 igible entities awarded grants, including
20 ensuring participation of eligible entities
21 that are rural States and States with high
22 energy costs;

23 (ii) ensure that grants are awarded
24 for demonstration projects that—

1 (I) expand on the existing tech-
2 nology demonstration programs of the
3 Department;

4 (II) are designed to achieve 1 or
5 more of the objectives described in
6 subparagraph (D); and

7 (III) inject or withdraw energy
8 from the bulk power system, electric
9 distribution system, building energy
10 system, or microgrid (grid-connected
11 or islanded mode) where the project is
12 located; and

13 (iii) give consideration to proposals
14 from eligible entities for securing energy
15 storage through competitive procurement
16 or contract for service.

17 (D) OBJECTIVES.—Each demonstration
18 project carried out by a grant awarded under
19 subparagraph (B) shall have 1 or more of the
20 following objectives:

21 (i) To improve the security of critical
22 infrastructure and emergency response sys-
23 tems.

24 (ii) To improve the reliability of trans-
25 mission and distribution systems, particu-

1 larly in rural areas, including high-energy-
2 cost rural areas.

3 (iii) To optimize transmission or dis-
4 tribution system operation and power qual-
5 ity to defer or avoid costs of replacing or
6 upgrading electric grid infrastructure, in-
7 cluding transformers and substations.

8 (iv) To supply energy at peak periods
9 of demand on the electric grid or during
10 periods of significant variation of electric
11 grid supply.

12 (v) To reduce peak loads of homes
13 and businesses.

14 (vi) To improve and advance power
15 conversion systems.

16 (vii) To provide ancillary services for
17 grid stability and management.

18 (viii) To integrate renewable energy
19 resource production.

20 (ix) To increase the feasibility of
21 microgrids (grid-connected or islanded
22 mode).

23 (x) To enable the use of stored energy
24 in forms other than electricity to support

1 the natural gas system and other industrial
2 processes.

3 (xi) To integrate fast charging of elec-
4 tric vehicles.

5 (xii) To improve energy efficiency.

6 (3) REPORTS.—Not less frequently than once
7 every 2 years for the duration of the programs
8 under paragraphs (1) and (2), the Secretary shall
9 submit to Congress and make publicly available a re-
10 port describing the performance of those programs.

11 (4) NO PROJECT OWNERSHIP INTEREST.—The
12 Federal Government shall not hold any equity or
13 other ownership interest in any energy storage sys-
14 tem that is part of a project under this subsection
15 unless the holding is agreed to by each participant
16 of the project.

17 (d) LONG-DURATION DEMONSTRATION INITIATIVE
18 AND JOINT PROGRAM.—

19 (1) DEFINITIONS.—In this subsection:

20 (A) DIRECTOR OF ARPA-E.—The term
21 “Director of ARPA-E” has the meaning given
22 the term in section 5012(a) of the America
23 COMPETES Act (42 U.S.C. 16538(a)).

24 (B) DIRECTOR OF ESTCP.—The term “Di-
25 rector of ESTCP” means the Secretary of De-

1 fense, acting through the Director of the Envi-
2 ronmental Security Technology Certification
3 Program of the Department of Defense.

4 (C) INITIATIVE.—The term “Initiative”
5 means the demonstration initiative established
6 under paragraph (2).

7 (D) JOINT PROGRAM.—The term “Joint
8 Program” means the joint program established
9 under paragraph (4).

10 (E) SECRETARY.—The term “Secretary”
11 means the Secretary, acting through the Direc-
12 tor of ARPA-E.

13 (2) ESTABLISHMENT OF INITIATIVE.—Not later
14 than 180 days after the date of enactment of this
15 Act, the Secretary shall establish a demonstration
16 initiative composed of demonstration projects fo-
17 cused on the development of long-duration energy
18 storage technologies.

19 (3) SELECTION OF PROJECTS.—To the max-
20 imum extent practicable, in selecting demonstration
21 projects to participate in the Initiative, the Secretary
22 shall—

23 (A) ensure a range of technology types;

24 (B) ensure regional diversity among
25 projects; and

1 (C) consider bulk power level, distribution
2 power level, behind-the-meter, microgrid (grid-
3 connected or islanded mode), and off-grid appli-
4 cations.

5 (4) JOINT PROGRAM.—

6 (A) ESTABLISHMENT.—As part of the Ini-
7 tiative, the Secretary, in consultation with the
8 Director of ESTCP, shall establish within the
9 Department a joint program to carry out
10 projects—

11 (i) to demonstrate promising long-du-
12 ration energy storage technologies at dif-
13 ferent scales; and

14 (ii) to help new, innovative long-dura-
15 tion energy storage technologies become
16 commercially viable.

17 (B) MEMORANDUM OF UNDERSTANDING.—

18 Not later than 200 days after the date of enact-
19 ment of this Act, the Secretary shall enter into
20 a memorandum of understanding with the Di-
21 rector of ESTCP to administer the Joint Pro-
22 gram.

23 (C) INFRASTRUCTURE.—In carrying out
24 the Joint Program, the Secretary and the Di-
25 rector of ESTCP shall—

1 (i) use existing test-bed infrastructure

2 at—

3 (I) Department facilities; and

4 (II) Department of Defense in-
5 stallations; and

6 (ii) develop new infrastructure for
7 identified projects, if appropriate.

8 (D) GOALS AND METRICS.—The Secretary
9 and the Director of ESTCP shall develop goals
10 and metrics for technological progress under
11 the Joint Program consistent with energy resil-
12 ience and energy security policies.

13 (E) SELECTION OF PROJECTS.—

14 (i) IN GENERAL.—To the maximum
15 extent practicable, in selecting projects to
16 participate in the Joint Program, the Sec-
17 retary and the Director of ESTCP shall—

18 (I) ensure that projects are car-
19 ried out under conditions that rep-
20 resent a variety of environments with
21 different physical conditions and mar-
22 ket constraints; and

23 (II) ensure an appropriate bal-
24 ance of—

1 (aa) larger, higher-cost
2 projects; and

3 (bb) smaller, lower-cost
4 projects.

5 (ii) PRIORITY.—In carrying out the
6 Joint Program, the Secretary and the Di-
7 rector of ESTCP shall give priority to
8 demonstration projects that—

9 (I) make available to the public
10 project information that will accel-
11 erate deployment of long-duration en-
12 ergy storage technologies; and

13 (II) will be carried out in the
14 field.

15 (e) TECHNICAL AND PLANNING ASSISTANCE PRO-
16 GRAM.—

17 (1) DEFINITIONS.—In this subsection:

18 (A) ELIGIBLE ENTITY.—The term “eligible
19 entity” means—

20 (i) an electric cooperative;

21 (ii) a political subdivision of a State,
22 such as a municipally owned electric util-
23 ity, or any agency, authority, corporation,
24 or instrumentality of a State political sub-
25 division;

1 (iii) a not-for-profit entity that is in a
2 partnership with not less than 6 entities
3 described in clause (i) or (ii); and

4 (iv) an investor-owned utility.

5 (B) PROGRAM.—The term “program”
6 means the technical and planning assistance
7 program established under paragraph (2)(A).

8 (2) ESTABLISHMENT.—

9 (A) IN GENERAL.—The Secretary shall es-
10 tablish a technical and planning assistance pro-
11 gram to assist eligible entities in identifying,
12 evaluating, planning, designing, and developing
13 processes to procure energy storage systems.

14 (B) ASSISTANCE AND GRANTS.—Under the
15 program, the Secretary shall—

16 (i) provide technical and planning as-
17 sistance, including disseminating informa-
18 tion, directly to eligible entities; and

19 (ii) award grants to eligible entities to
20 contract to obtain technical and planning
21 assistance from outside experts.

22 (C) FOCUS.—In carrying out the program,
23 the Secretary shall focus on energy storage sys-
24 tem projects that have the greatest potential
25 for—

- 1 (i) strengthening the reliability and
2 resiliency of energy infrastructure;
- 3 (ii) reducing the cost of energy stor-
4 age systems;
- 5 (iii) improving the feasibility of
6 microgrids (grid-connected or islanded
7 mode), particularly in rural areas, includ-
8 ing high energy cost rural areas;
- 9 (iv) reducing consumer electricity
10 costs; or
- 11 (v) maximizing local job creation.

12 (3) TECHNICAL AND PLANNING ASSISTANCE.—

13 (A) IN GENERAL.—Technical and planning
14 assistance provided under the program shall in-
15 clude assistance with 1 or more of the following
16 activities relating to energy storage systems:

- 17 (i) Identification of opportunities to
18 use energy storage systems.
- 19 (ii) Feasibility studies to assess the
20 potential for development of new energy
21 storage systems or improvement of existing
22 energy storage systems.
- 23 (iii) Assessment of technical and eco-
24 nomic characteristics, including a cost-ben-
25 efit analysis.

- 1 (iv) Utility interconnection.
- 2 (v) Permitting and siting issues.
- 3 (vi) Business planning and financial
- 4 analysis.
- 5 (vii) Engineering design.
- 6 (viii) Resource adequacy planning.
- 7 (ix) Resilience planning and valuation.

8 (B) EXCLUSION.—Technical and planning

9 assistance provided under the program shall not

10 be used to pay any person for influencing or at-

11 tempting to influence an officer or employee of

12 any Federal, State, or local agency, a Member

13 of Congress, an employee of a Member of Con-

14 gress, a State or local legislative body, or an

15 employee of a State or local legislative body.

16 (4) INFORMATION DISSEMINATION.—The infor-

17 mation disseminated under paragraph (2)(B)(i) shall

18 include—

19 (A) information relating to the topics de-

20 scribed in paragraph (3)(A), including case

21 studies of successful examples;

22 (B) computational tools or software for as-

23 sessment, design, and operation and mainte-

24 nance of energy storage systems;

1 (C) public databases that track existing
2 and planned energy storage systems;

3 (D) best practices for the utility and grid
4 operator business processes associated with the
5 topics described in paragraph (3)(A); and

6 (E) relevant State policies or regulations
7 associated with the topics described in para-
8 graph (3)(A).

9 (5) APPLICATIONS.—

10 (A) IN GENERAL.—The Secretary shall
11 seek applications for the program—

12 (i) on a competitive, merit-reviewed
13 basis; and

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

16 (B) APPLICATION.—An eligible entity de-
17 siring to apply for the program shall submit to
18 the Secretary an application at such time, in
19 such manner, and containing such information
20 as the Secretary may require, including whether
21 the eligible entity is applying for—

22 (i) direct technical or planning assist-
23 ance under paragraph (2)(B)(i); or

24 (ii) a grant under paragraph
25 (2)(B)(ii).

1 (C) PRIORITIES.—In selecting eligi-
2 ties for technical and planning assistance under
3 the program, the Secretary shall give priority to
4 eligible entities described in clauses (i) and (ii)
5 of paragraph (1)(A).

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

8 (A) not less frequently than once every 2
9 years, a report describing the performance of
10 the program, including a synthesis and analysis
11 of any information the Secretary requires grant
12 recipients to provide to the Secretary as a con-
13 dition of receiving a grant; and

14 (B) on termination of the program, an as-
15 sessment of the success of, and education pro-
16 vided by, the measures carried out by eligible
17 entities under the program.

18 (7) COST-SHARING.—Activities under this sub-
19 section shall be subject to the cost-sharing require-
20 ments under section 988 of the Energy Policy Act
21 of 2005 (42 U.S.C. 16352).

22 (f) ENERGY STORAGE MATERIALS RECYCLING PRIZE
23 COMPETITION.—Section 1008 of the Energy Policy Act of
24 2005 (42 U.S.C. 16396) is amended by adding at the end
25 the following:

1 “(g) ENERGY STORAGE MATERIALS RECYCLING
2 PRIZE COMPETITION.—

3 “(1) DEFINITION OF CRITICAL ENERGY STOR-
4 AGE MATERIALS.—In this subsection, the term ‘crit-
5 ical energy storage materials’ includes—

6 “(A) lithium;

7 “(B) cobalt;

8 “(C) nickel;

9 “(D) graphite; and

10 “(E) any other material determined by the
11 Secretary to be critical to the continued grow-
12 ing supply of energy storage resources.

13 “(2) PRIZE AUTHORITY.—

14 “(A) IN GENERAL.—As part of the pro-
15 gram established under subsection (a), the Sec-
16 retary shall establish an award program, to be
17 known as the ‘Energy Storage Materials Recy-
18 cling Prize Competition’ (referred to in this
19 subsection as the ‘program’), under which the
20 Secretary shall carry out prize competitions and
21 make awards to advance the recycling of critical
22 energy storage materials.

23 “(B) FREQUENCY.—To the maximum ex-
24 tent practicable, the Secretary shall carry out a

1 competition under the program not less fre-
2 quently than once every calendar year.

3 “(3) ELIGIBILITY.—

4 “(A) IN GENERAL.—To be eligible to win
5 a prize under the program, an individual or en-
6 tity—

7 “(i) shall have complied with the re-
8 quirements of the competition as described
9 in the announcement for that competition
10 published in the Federal Register by the
11 Secretary under paragraph (6);

12 “(ii) in the case of a private entity,
13 shall be incorporated in the United States
14 and maintain a primary place of business
15 in the United States;

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

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

24 “(i) A Federal entity.

1 “(ii) A Federal employee (including
2 an employee of a National Laboratory)
3 acting within the scope of employment.

4 “(4) AWARDS.—In carrying out the program,
5 the Secretary shall award cash prizes, in amounts to
6 be determined by the Secretary, to each individual or
7 entity selected through a competitive process to de-
8 velop advanced methods or technologies to recycle
9 critical energy storage materials from energy storage
10 systems.

11 “(5) CRITERIA.—

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

16 “(B) REQUIREMENTS.—The criteria estab-
17 lished under subparagraph (A) shall prioritize
18 advancements in methods or technologies that
19 present the greatest potential for large-scale
20 commercial deployment.

21 “(C) CONSULTATION.—In establishing cri-
22 teria under subparagraph (A), the Secretary
23 shall consult with appropriate members of pri-
24 vate industry involved in the commercial deploy-
25 ment of energy storage systems.

1 “(6) ADVERTISING AND SOLICITATION OF COM-
2 PETITORS.—

3 “(A) IN GENERAL.—The Secretary shall
4 announce each prize competition under the pro-
5 gram by publishing a notice in the Federal Reg-
6 ister.

7 “(B) REQUIREMENTS.—Each notice pub-
8 lished under subparagraph (A) shall describe
9 the essential elements of the competition, such
10 as—

11 “(i) the subject of the competition;

12 “(ii) the duration of the competition;

13 “(iii) the eligibility requirements for
14 participation in the competition;

15 “(iv) the process for participants to
16 register for the competition;

17 “(v) the amount of the prize; and

18 “(vi) the criteria for awarding the
19 prize.

20 “(7) JUDGES.—

21 “(A) IN GENERAL.—For each prize com-
22 petition under the program, the Secretary shall
23 assemble a panel of qualified judges to select
24 the winner or winners of the competition on the

1 basis of the criteria established under para-
2 graph (5).

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

7 “(C) CONFLICTS.—An individual may not
8 serve as a judge in a prize competition under
9 the program if the individual, the spouse of the
10 individual, any child of the individual, or any
11 other member of the household of the indi-
12 vidual—

13 “(i) has a personal or financial inter-
14 est in, or is an employee, officer, director,
15 or agent of, any entity that is a registered
16 participant in the prize competition for
17 which the individual will serve as a judge;
18 or

19 “(ii) has a familial or financial rela-
20 tionship with a registered participant in
21 the prize competition for which the indi-
22 vidual will serve as a judge.

23 “(8) REPORT TO CONGRESS.—Not later than
24 60 days after the date on which the first prize is
25 awarded under the program, and annually there-

1 after, the Secretary shall submit to Congress a re-
2 port that—

3 “(A) identifies each award recipient;

4 “(B) describes the advanced methods or
5 technologies developed by each award recipient;
6 and

7 “(C) specifies actions being taken by the
8 Department toward commercial application of
9 all methods or technologies with respect to
10 which a prize has been awarded under the pro-
11 gram.

12 “(9) ANTI-DEFICIENCY ACT.—The Secretary
13 shall carry out the program in accordance with sec-
14 tion 1341 of title 31, United States Code (commonly
15 referred to as the ‘Anti-Deficiency Act’).

16 “(10) AUTHORIZATION OF APPROPRIATIONS.—
17 There is authorized to be appropriated to carry out
18 this subsection \$10,000,000 for each of fiscal years
19 2020 through 2024, to remain available until ex-
20 pended.”.

21 (g) REGULATORY ACTIONS TO ENCOURAGE ENERGY
22 STORAGE DEPLOYMENT.—

23 (1) DEFINITIONS.—In this subsection:

1 (A) COMMISSION.—The term “Commis-
2 sion” means the Federal Energy Regulatory
3 Commission.

4 (B) ELECTRIC STORAGE RESOURCE.—The
5 term “electric storage resource” means a re-
6 source capable of receiving electric energy from
7 the grid and storing that electric energy for
8 later injection back into the grid.

9 (2) REGULATORY ACTION.—

10 (A) IN GENERAL.—Not later than 1 year
11 after the date of enactment of this Act, the
12 Commission shall issue a regulation to identify
13 the eligibility of, and process for, electric stor-
14 age resources—

15 (i) to receive cost recovery through
16 Commission-regulated rates for the trans-
17 mission of electric energy in interstate
18 commerce; and

19 (ii) that receive cost recovery under
20 clause (i) to receive compensation for other
21 services (such as the sale of energy, capac-
22 ity, or ancillary services) without regard to
23 whether those services are provided concu-
24 rrently with the transmission service de-
25 scribed in clause (i).

1 (B) PROHIBITION OF DUPLICATE RECOV-
2 ERY.—Any regulation issued under subpara-
3 graph (A) shall preclude the receipt of unjust
4 and unreasonable double recovery for electric
5 storage resources providing services described in
6 clauses (i) and (ii) of that subparagraph.

7 (3) ELECTRIC STORAGE RESOURCES TECHNICAL
8 CONFERENCE.—

9 (A) IN GENERAL.—Not later than 180
10 days after the date of enactment of this Act,
11 the Commission shall convene a technical con-
12 ference on the potential for electric storage re-
13 sources to improve the operation of electric sys-
14 tems.

15 (B) REQUIREMENTS.—The technical con-
16 ference under subparagraph (A) shall—

17 (i) identify opportunities for further
18 consideration of electric storage resources
19 in regional and interregional transmission
20 planning processes within the jurisdiction
21 of the Commission;

22 (ii) identify all energy, capacity, and
23 ancillary service products, market designs,
24 or rules that—

1 (I) are within the jurisdiction of
2 the Commission; and

3 (II) enable and compensate for
4 the use of electric storage resources
5 that improve the operation of electric
6 systems;

7 (iii) examine additional products, mar-
8 ket designs, or rules that would enable and
9 compensate for the use of electric storage
10 resources for improving the operation of
11 electric systems; and

12 (iv) examine the functional value of
13 electric storage resources at the trans-
14 mission and distribution system interface
15 for purposes of providing electric system
16 reliability.

17 (h) COORDINATION.—To the maximum extent prac-
18 ticable, the Secretary shall coordinate the activities under
19 this section (including activities conducted pursuant to the
20 amendments made by this section) among the offices and
21 employees of the Department, other Federal agencies, and
22 other relevant entities—

23 (1) to ensure appropriate collaboration; and

24 (2) to avoid unnecessary duplication of those
25 activities.

1 (i) AUTHORIZATION OF APPROPRIATIONS.—There
2 are authorized to be appropriated—

3 (1) to carry out subsection (b), \$100,000,000
4 for each of fiscal years 2021 through 2025, to re-
5 main available until expended;

6 (2) to carry out subsection (c), \$100,000,000
7 for each of fiscal years 2021 through 2025, to re-
8 main available until expended;

9 (3) to carry out subsection (d), \$50,000,000 for
10 each of fiscal years 2021 through 2025, to remain
11 available until expended; and

12 (4) to carry out subsection (e), \$20,000,000 for
13 each of fiscal years 2021 through 2025, to remain
14 available until expended.

15 **SEC. 1302. BUREAU OF RECLAMATION PUMPED STORAGE**

16 **HYDROPOWER DEVELOPMENT.**

17 (a) AUTHORITY FOR PUMPED STORAGE HYDRO-
18 POWER DEVELOPMENT USING MULTIPLE BUREAU OF
19 RECLAMATION RESERVOIRS.—Section 9(c) of the Rec-
20 lamation Project Act of 1939 (43 U.S.C. 485h(e)) is
21 amended—

22 (1) in paragraph (1), in the fourth sentence, by
23 striking “, including small conduit hydropower devel-
24 opment” and inserting “and reserve to the Secretary
25 the exclusive authority to develop small conduit hy-

1 dropower using Bureau of Reclamation facilities and
2 pumped storage hydropower exclusively using Bu-
3 reau of Reclamation reservoirs”; and

4 (2) in paragraph (8), by striking “has been
5 filed with the Federal Energy Regulatory Commis-
6 sion as of the date of the enactment of the Bureau
7 of Reclamation Small Conduit Hydropower Develop-
8 ment and Rural Jobs Act” and inserting “was filed
9 with the Federal Energy Regulatory Commission be-
10 fore August 9, 2013, and is still pending”.

11 (b) LIMITATIONS ON ISSUANCE OF CERTAIN LEASES
12 OF POWER PRIVILEGE.—

13 (1) DEFINITIONS.—In this subsection:

14 (A) COMMISSION.—The term “Commis-
15 sion” means the Federal Energy Regulatory
16 Commission.

17 (B) DIRECTOR.—The term “Director”
18 means the Director of the Office of Hearings
19 and Appeals.

20 (C) OFFICE OF HEARINGS AND AP-
21 PEALS.—The term “Office of Hearings and Ap-
22 peals” means the Office of Hearings and Ap-
23 peals of the Department of the Interior.

24 (D) PARTY.—The term “party”, with re-
25 spect to a study plan agreement, means each of

1 the following parties to the study plan agree-
2 ment:

3 (i) The proposed lessee.

4 (ii) The Tribes.

5 (E) PROJECT.—The term “project” means
6 a proposed pumped storage facility that—

7 (i) would use multiple Bureau of Rec-
8 lamation reservoirs; and

9 (ii) as of June 1, 2017, was subject to
10 a preliminary permit issued by the Com-
11 mission pursuant to section 4(f) of the
12 Federal Power Act (16 U.S.C. 797(f)).

13 (F) PROPOSED LESSEE.—The term “pro-
14 posed lessee” means the proposed lessee of a
15 project.

16 (G) SECRETARY.—The term “Secretary”
17 means the Secretary of the Interior.

18 (H) STUDY PLAN.—The term “study plan”
19 means the plan described in paragraph (4)(A).

20 (I) STUDY PLAN AGREEMENT.—The term
21 “study plan agreement” means an agreement
22 entered into under paragraph (2)(A) and de-
23 scribed in paragraph (3).

24 (J) TRIBES.—The term “Tribes” means—

- 1 (i) the Confederated Tribes of the
2 Colville Reservation; and
3 (ii) the Spokane Tribe of Indians of
4 the Spokane Reservation.

5 (2) REQUIREMENT FOR ISSUANCE OF LEASES
6 OF POWER PRIVILEGE.—The Secretary shall not
7 issue a lease of power privilege pursuant to section
8 9(c)(1) of the Reclamation Project Act of 1939 (43
9 U.S.C. 485h(c)(1)) (as amended by subsection (a))
10 for a project unless—

11 (A) the proposed lessee and the Tribes
12 have entered into a study plan agreement; or

13 (B) the Secretary or the Director, as appli-
14 cable, makes a final determination for—

15 (i) a study plan agreement under
16 paragraph (3)(B); or

17 (ii) a study plan under paragraph (4).

18 (3) STUDY PLAN AGREEMENT REQUIRE-
19 MENTS.—

20 (A) IN GENERAL.—A study plan agree-
21 ment shall—

22 (i) establish the deadlines for the pro-
23 posed lessee to formally respond in writing
24 to comments and study requests about the

1 project previously submitted to the Com-
2 mission;

3 (ii) allow for the parties to submit ad-
4 ditional comments and study requests if
5 any aspect of the project, as proposed, dif-
6 fers from an aspect of the project, as de-
7 scribed in a preapplication document pro-
8 vided to the Commission;

9 (iii) except as expressly agreed to by
10 the parties or as provided in subparagraph
11 (B) or paragraph (4), require that the pro-
12 posed lessee conduct each study described
13 in—

14 (I) a study request about the
15 project previously submitted to the
16 Commission; or

17 (II) any additional study request
18 submitted in accordance with the
19 study plan agreement;

20 (iv) require that the proposed lessee
21 study any potential adverse economic ef-
22 fects of the project on the Tribes, including
23 effects on—

24 (I) annual payments to the Con-
25 federated Tribes of the Colville Res-

1 ervation under section 5(b) of the
2 Confederated Tribes of the Colville
3 Reservation Grand Coulee Dam Set-
4 tlement Act (Public Law 103–436;
5 108 Stat. 4579); and

6 (II) annual payments to the Spo-
7 kane Tribe of Indians of the Spokane
8 Reservation authorized after the date
9 of enactment of this Act, the amount
10 of which derives from the annual pay-
11 ments described in subclause (I);

12 (v) establish a protocol for commu-
13 nication and consultation between the par-
14 ties;

15 (vi) provide mechanisms for resolving
16 disputes between the parties regarding im-
17 plementation and enforcement of the study
18 plan agreement; and

19 (vii) contain other provisions deter-
20 mined to be appropriate by the parties.

21 (B) DISPUTES.—

22 (i) IN GENERAL.—If the parties can-
23 not agree to the terms of a study plan
24 agreement or implementation of those
25 terms, the parties shall submit to the Di-

1 rector, for final determination on the terms
2 or implementation of the study plan agree-
3 ment, notice of the dispute, consistent with
4 subparagraph (A)(vi), to the extent the
5 parties have agreed to a study plan agree-
6 ment.

7 (ii) INCLUSION.—A dispute covered by
8 clause (i) may include the view of a pro-
9 posed lessee that an additional study re-
10 quest submitted in accordance with sub-
11 paragraph (A)(ii) is not reasonably cal-
12 culated to assist the Secretary in evalu-
13 ating the potential impacts of the project.

14 (iii) TIMING.—The Director shall
15 issue a determination regarding a dispute
16 under clause (i) not later than 120 days
17 after the date on which the Director re-
18 ceives notice of the dispute under that
19 clause.

20 (4) STUDY PLAN.—

21 (A) IN GENERAL.—The proposed lessee
22 shall submit to the Secretary for approval a
23 study plan that details the proposed method-
24 ology for performing each of the studies—

1 (i) identified in the study plan agree-
2 ment of the proposed lessee; or

3 (ii) determined by the Director in a
4 final determination regarding a dispute
5 under paragraph (3)(B).

6 (B) INITIAL DETERMINATION.—Not later
7 than 60 days after the date on which the Sec-
8 retary receives the study plan under subpara-
9 graph (A), the Secretary shall make an initial
10 determination that—

11 (i) approves the study plan;

12 (ii) rejects the study plan on the
13 grounds that the study plan—

14 (I) lacks sufficient detail on a
15 proposed methodology for a study
16 identified in the study plan agree-
17 ment; or

18 (II) is inconsistent with the study
19 plan agreement; or

20 (iii) imposes additional study plan re-
21 quirements that the Secretary determines
22 are necessary to adequately define the po-
23 tential effects of the project on—

24 (I) the exercise of the paramount
25 hunting, fishing, and boating rights of

1 the Tribes reserved pursuant to the
2 Act of June 29, 1940 (54 Stat. 703,
3 chapter 460; 16 U.S.C. 835d et seq.);

4 (II) the annual payments de-
5 scribed in subclauses (I) and (II) of
6 paragraph (3)(A)(iv);

7 (III) the Columbia Basin project
8 (as defined in section 1 of the Act of
9 May 27, 1937 (50 Stat. 208, chapter
10 269; 57 Stat. 14, chapter 14; 16
11 U.S.C. 835));

12 (IV) historic properties and cul-
13 tural or spiritually significant re-
14 sources; and

15 (V) the environment.

16 (C) OBJECTIONS.—

17 (i) IN GENERAL.—Not later than 30
18 days after the date on which the Secretary
19 makes an initial determination under sub-
20 paragraph (B), the Tribes or the proposed
21 lessee may submit to the Director an ob-
22 jection to the initial determination.

23 (ii) FINAL DETERMINATION.—Not
24 later than 120 days after the date on

1 the Tribes reserved pursuant to the
2 Act of June 29, 1940 (54 Stat. 703,
3 chapter 460; 16 U.S.C. 835d et seq.);
4 and

5 (II) to adequately and equitably
6 protect, mitigate damages to, and en-
7 hance fish and wildlife, including re-
8 lated spawning grounds and habitat,
9 affected by the development, oper-
10 ation, and management of the project.

11 (ii) RECOMMENDATIONS OF THE
12 TRIBES.—The conditions required under
13 clause (i) shall be based on joint rec-
14 ommendations of the Tribes.

15 (iii) RESOLVING INCONSISTENCIES.—

16 (I) IN GENERAL.—If the Sec-
17 retary determines that any rec-
18 ommendation of the Tribes under
19 clause (ii) is not reasonably calculated
20 to ensure the project is consistent
21 with clause (i) or is inconsistent with
22 the requirements of the Reclamation
23 Project Act of 1939 (43 U.S.C. 485 et
24 seq.), the Secretary shall attempt to
25 resolve any such inconsistency with

1 the Tribes, giving due weight to the
2 recommendations and expertise of the
3 Tribes.

4 (II) PUBLICATION OF FIND-
5 INGS.—If, after an attempt to resolve
6 an inconsistency under subclause (I),
7 the Secretary does not adopt in whole
8 or in part a recommendation of the
9 Tribes under clause (ii), the Secretary
10 shall issue each of the following find-
11 ings, including a statement of the
12 basis for each of the findings:

13 (aa) A finding that adoption
14 of the recommendation is incon-
15 sistent with the requirements of
16 the Reclamation Project Act of
17 1939 (43 U.S.C. 485 et seq.).

18 (bb) A finding that the con-
19 ditions selected by the Secretary
20 to be contained in the lease of
21 power privilege under clause (i)
22 comply with the requirements of
23 subclauses (I) and (II) of that
24 clause.

1 (B) ANNUAL CHARGES PAYABLE BY LI-
2 CENSEE.—

3 (i) IN GENERAL.—Subject to clause
4 (ii), any lease of power privilege issued by
5 the Secretary for a project under para-
6 graph (2) shall contain conditions that re-
7 quire the lessee of the project to make di-
8 rect payments to the Tribes through rea-
9 sonable annual charges in an amount that
10 recompenses the Tribes for any adverse
11 economic effect of the project identified in
12 a study performed pursuant to the study
13 plan agreement for the project.

14 (ii) AGREEMENT.—

15 (I) IN GENERAL.—The amount
16 of the annual charges described in
17 clause (i) shall be established through
18 agreement between the proposed les-
19 see and the Tribes.

20 (II) CONDITION.—The agreement
21 under subclause (I), including any
22 modification of the agreement, shall
23 be deemed to be a condition to the
24 lease of power privilege issued by the

1 Secretary for a project under para-
2 graph (2).

3 (iii) DISPUTE RESOLUTION.—

4 (I) IN GENERAL.—If the pro-
5 posed lessee and the Tribes cannot
6 agree to the terms of an agreement
7 under clause (ii)(I), the proposed les-
8 see and the Tribes shall submit notice
9 of the dispute to the Director.

10 (II) RESOLUTION.—The Director
11 shall resolve the dispute described in
12 subclause (I) not later than 180 days
13 after the date on which the Director
14 receives notice of the dispute under
15 that subclause.

16 (C) ADDITIONAL CONDITIONS.—The Sec-
17 retary may include in any lease of power privi-
18 lege issued by the Secretary for a project under
19 paragraph (2) other conditions determined ap-
20 propriate by the Secretary, on the condition
21 that the conditions shall be consistent with the
22 Reclamation Project Act of 1939 (43 U.S.C.
23 485 et seq.).

1 (D) CONSULTATION.—In establishing con-
2 ditions under this paragraph, the Secretary
3 shall consult with the Tribes.

4 (6) DEADLINES.—The Secretary or any officer
5 of the Office of Hearing and Appeals before whom
6 a proceeding is pending under this subsection may
7 extend any deadline or enlarge any timeframe de-
8 scribed in this subsection—

9 (A) at the discretion of the Secretary or
10 the officer; or

11 (B) on a showing of good cause by any
12 party.

13 (7) JUDICIAL REVIEW.—Any final action of the
14 Secretary or the Director made pursuant to this sub-
15 section shall be subject to judicial review in accord-
16 ance with chapter 7 of title 5, United States Code.

17 (8) EFFECT ON OTHER PROJECTS.—Nothing in
18 this subsection establishes any precedent or is bind-
19 ing on any Bureau of Reclamation lease of power
20 privilege, other than for a project.

21 **Subtitle D—Carbon Capture,**
22 **Utilization, and Storage**

23 **SEC. 1401. FOSSIL ENERGY.**

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

1 (1) in paragraph (6), by inserting “, including
2 technology development to reduce emissions of car-
3 bon dioxide and associated emissions of heavy metals
4 within coal combustion residues and gas streams re-
5 sulting from fossil fuel use and production” before
6 the period at the end; and

7 (2) by striking paragraph (7) and inserting the
8 following:

9 “(7) Increasing the export of fossil energy-re-
10 lated equipment, technology, including emissions
11 control technologies, and services from the United
12 States.

13 “(8) Developing carbon removal and utilization
14 technologies, products, and methods that result in
15 net reductions in greenhouse gas emissions, includ-
16 ing direct air capture and storage, and carbon use
17 and reuse for commercial application.

18 “(9) Improving the conversion, use, and storage
19 of carbon dioxide produced from fossil fuels.”.

20 **SEC. 1402. ESTABLISHMENT OF COAL AND NATURAL GAS**
21 **TECHNOLOGY PROGRAM.**

22 (a) IN GENERAL.—The Energy Policy Act of 2005
23 is amended by striking section 962 (42 U.S.C. 16292) and
24 inserting the following:

1 **“SEC. 962. COAL AND NATURAL GAS TECHNOLOGY PRO-**
2 **GRAM.**

3 “(a) DEFINITIONS.—In this section:

4 “(1) LARGE-SCALE PILOT PROJECT.—The term
5 ‘large-scale pilot project’ means a pilot project
6 that—

7 “(A) represents the scale of technology de-
8 velopment beyond laboratory development and
9 bench scale testing, but not yet advanced to the
10 point of being tested under real operational con-
11 ditions at commercial scale;

12 “(B) represents the scale of technology
13 necessary to gain the operational data needed
14 to understand the technical and performance
15 risks of the technology before the application of
16 that technology at commercial scale or in com-
17 mercial-scale demonstration; and

18 “(C) is large enough—

19 “(i) to validate scaling factors; and

20 “(ii) to demonstrate the interaction
21 between major components so that control
22 philosophies for a new process can be de-
23 veloped and enable the technology to ad-
24 vance from large-scale pilot plant applica-
25 tion to commercial-scale demonstration or
26 application.

1 “(2) NATURAL GAS.—The term ‘natural gas’
2 means any fuel consisting in whole or in part of—

3 “(A) natural gas;

4 “(B) liquid petroleum gas;

5 “(C) synthetic gas derived from petroleum
6 or natural gas liquids;

7 “(D) any mixture of natural gas and syn-
8 thetic gas; or

9 “(E) biomethane.

10 “(3) NATURAL GAS ELECTRIC GENERATION FA-
11 CILITY.—

12 “(A) IN GENERAL.—The term ‘natural gas
13 electric generation facility’ means a facility that
14 generates electric energy using natural gas as
15 the fuel.

16 “(B) INCLUSIONS.—The term ‘natural gas
17 electric generation facility’ includes a new or ex-
18 isting—

19 “(i) simple cycle plant;

20 “(ii) combined cycle plant;

21 “(iii) combined heat and power plant;

22 or

23 “(iv) steam methane reformer that
24 produces hydrogen from natural gas for
25 use in the production of electric energy.

1 “(4) PROGRAM.—The term ‘program’ means
2 the program established under subsection (b)(1).

3 “(5) TRANSFORMATIONAL TECHNOLOGY.—

4 “(A) IN GENERAL.—The term ‘trans-
5 formational technology’ means a power genera-
6 tion technology that represents a significant
7 change in the methods used to convert energy
8 that will enable a step change in performance,
9 efficiency, and cost of electricity as compared to
10 the technology in existence on the date of enact-
11 ment of the American Energy Innovation Act of
12 2020.

13 “(B) INCLUSIONS.—The term ‘trans-
14 formational technology’ includes a broad range
15 of technology improvements, including—

16 “(i) thermodynamic improvements in
17 energy conversion and heat transfer, in-
18 cluding—

19 “(I) advanced combustion sys-
20 tems, including oxygen combustion
21 systems and chemical looping; and

22 “(II) the replacement of steam
23 cycles with supercritical carbon diox-
24 ide cycles;

1 “(ii) improvements in steam or carbon
2 dioxide turbine technology;

3 “(iii) improvements in carbon capture,
4 utilization, and storage systems technology;

5 “(iv) improvements in small-scale and
6 modular coal-fired technologies with re-
7 duced carbon output or carbon capture
8 that can support incremental power gen-
9 eration capacity additions;

10 “(v) fuel cell technologies for low-cost,
11 high-efficiency modular power systems;

12 “(vi) advanced gasification systems;

13 “(vii) thermal cycling technologies;
14 and

15 “(viii) any other technology the Sec-
16 retary recognizes as transformational tech-
17 nology.

18 “(b) COAL AND NATURAL GAS TECHNOLOGY PRO-
19 GRAM.—

20 “(1) IN GENERAL.—The Secretary shall estab-
21 lish a coal and natural gas technology program to
22 ensure the continued use of the abundant domestic
23 coal and natural gas resources of the United States
24 through the development of transformational tech-
25 nologies that will significantly improve the efficiency,

1 effectiveness, costs, and environmental performance
2 of coal and natural gas use.

3 “(2) REQUIREMENTS.—The program shall in-
4 clude—

5 “(A) a research and development program;

6 “(B) large-scale pilot projects;

7 “(C) demonstration projects, in accordance
8 with paragraph (4); and

9 “(D) a front-end engineering and design
10 program.

11 “(3) PROGRAM GOALS AND OBJECTIVES.—In
12 consultation with the interested entities described in
13 paragraph (6)(C), the Secretary shall develop goals
14 and objectives for the program to be applied to the
15 transformational technologies developed within the
16 program, taking into consideration the following:

17 “(A) Increasing the performance of coal
18 and natural gas electric generation facilities, in-
19 cluding by—

20 “(i) ensuring reliable, low-cost power
21 from new and existing coal and natural gas
22 electric generation facilities;

23 “(ii) achieving high conversion effi-
24 ciencies;

1 “(iii) addressing emissions of carbon
2 dioxide through high-efficiency platforms;

3 “(iv) developing small-scale and mod-
4 ular technologies to support incremental
5 capacity additions and load following gen-
6 eration, in addition to large-scale genera-
7 tion technologies;

8 “(v) supporting dispatchable oper-
9 ations for new and existing applications of
10 coal and natural gas generation; and

11 “(vi) accelerating the development of
12 technologies that have transformational en-
13 ergy conversion characteristics.

14 “(B) Using carbon capture, utilization, and
15 sequestration technologies to decrease the car-
16 bon dioxide emissions, and the environmental
17 impact from carbon dioxide emissions, from new
18 and existing coal and natural gas electric gen-
19 eration facilities, including by—

20 “(i) accelerating the development, de-
21 ployment, and commercialization of tech-
22 nologies to capture and sequester carbon
23 dioxide emissions from new and existing
24 coal and natural gas electric generation fa-
25 cilities;

1 “(ii) supporting sites for safe geologi-
2 cal storage of large volumes of anthropo-
3 genic sources of carbon dioxide and the de-
4 velopment of the infrastructure needed to
5 support a carbon dioxide utilization and
6 storage industry;

7 “(iii) improving the conversion, utili-
8 zation, and storage of carbon dioxide pro-
9 duced from fossil fuels and other anthropo-
10 genic sources of carbon dioxide;

11 “(iv) lowering greenhouse gas emis-
12 sions for all fossil fuel production, genera-
13 tion, delivery, and use, to the maximum ex-
14 tent practicable;

15 “(v) developing carbon utilization
16 technologies, products, and methods, in-
17 cluding carbon use and reuse for commer-
18 cial application;

19 “(vi) developing net-negative carbon
20 dioxide emissions technologies; and

21 “(vii) developing technologies for the
22 capture of carbon dioxide produced during
23 the production of hydrogen from natural
24 gas.

1 “(C) Decreasing the non-carbon dioxide
2 relevant environmental impacts of coal and nat-
3 ural gas production, including by—

4 “(i) further reducing non-carbon diox-
5 ide air emissions; and

6 “(ii) reducing the use, and managing
7 the discharge, of water in power plant op-
8 erations.

9 “(D) Accelerating the development of tech-
10 nologies to capture carbon dioxide emissions
11 from industrial facilities, including—

12 “(i) nontraditional fuel manufacturing
13 facilities, including ethanol or other biofuel
14 production plants or hydrogen production
15 plants; and

16 “(ii) energy-intensive manufacturing
17 facilities that produce carbon dioxide as a
18 byproduct of operations.

19 “(E) Examining methods of converting
20 coal and natural gas to other valuable products
21 and commodities in addition to electricity, in-
22 cluding hydrogen.

23 “(F) Entering into cooperative agreements
24 to carry out and expedite demonstration
25 projects (including pilot projects) to dem-

1 onstrate the technical and commercial viability
2 of technologies to reduce carbon dioxide emis-
3 sions released from coal and natural gas electric
4 generation facilities for commercial deployment;
5 and

6 “(G) Identifying any barriers to the com-
7 mercial deployment of any technologies under
8 development for the capture of carbon dioxide
9 produced by coal and natural gas electric gen-
10 eration facilities.

11 “(4) DEMONSTRATION PROJECTS.—

12 “(A) IN GENERAL.—In carrying out the
13 program, the Secretary shall establish a dem-
14 onstration program under which the Secretary
15 shall enter into agreements by not later than
16 September 30, 2025, for demonstration projects
17 to demonstrate the construction and operation
18 of not fewer than 5 facilities to capture carbon
19 dioxide from coal and natural gas electric gen-
20 eration facilities.

21 “(B) REQUIREMENT.—Of the demonstra-
22 tion projects carried out under subparagraph
23 (A)—

1 “(i) not fewer than 2 shall be de-
2 signed to capture carbon dioxide from a
3 natural gas electric generation facility; and

4 “(ii) not fewer than 2 shall be de-
5 signed to capture carbon dioxide from a
6 coal electric generation facility.

7 “(C) GOALS.—Each demonstration project
8 under the demonstration program shall be de-
9 signed to further the development, deployment,
10 and commercialization of technologies to cap-
11 ture and sequester carbon dioxide emissions
12 from new and existing coal and natural gas
13 electric generation facilities.

14 “(D) APPLICATIONS.—

15 “(i) IN GENERAL.—To be eligible to
16 enter into an agreement with the Secretary
17 for a demonstration project under subpara-
18 graph (A), an entity shall submit to the
19 Secretary an application at such time, in
20 such manner, and containing such infor-
21 mation as the Secretary may require.

22 “(ii) REVIEW OF APPLICATIONS.—In
23 reviewing applications submitted under
24 clause (i), the Secretary, to the maximum
25 extent practicable, shall—

1 “(I) ensure a broad geographic
2 distribution of project sites;

3 “(II) ensure that a broad selec-
4 tion of electric generation facilities are
5 represented;

6 “(III) ensure that a broad selec-
7 tion of technologies are represented;
8 and

9 “(IV) leverage existing public-pri-
10 vate partnerships and Federal re-
11 sources.

12 “(5) INTRAAGENCY COORDINATION FOR CAR-
13 BON CAPTURE, UTILIZATION, AND SEQUESTRATION
14 ACTIVITIES.—The carbon capture, utilization, and
15 sequestration activities described in paragraph
16 (3)(B) shall be carried out by the Assistant Sec-
17 retary for Fossil Energy, in coordination with the
18 heads of other relevant offices of the Department
19 and the National Laboratories.

20 “(6) CONSULTATIONS REQUIRED.—In carrying
21 out the program, the Secretary shall—

22 “(A) undertake international collabora-
23 tions, taking into consideration the rec-
24 ommendations of the National Coal Council and
25 the National Petroleum Council;

1 “(B) use existing authorities to encourage
2 international cooperation; and

3 “(C) consult with interested entities, in-
4 cluding—

5 “(i) coal and natural gas producers;

6 “(ii) industries that use coal and nat-
7 ural gas;

8 “(iii) organizations that promote coal,
9 advanced coal, and natural gas tech-
10 nologies;

11 “(iv) environmental organizations;

12 “(v) organizations representing work-
13 ers; and

14 “(vi) organizations representing con-
15 sumers.

16 “(c) REPORT.—

17 “(1) IN GENERAL.—Not later than 18 months
18 after the date of enactment of the American Energy
19 Innovation Act of 2020, the Secretary shall submit
20 to Congress a report describing the program goals
21 and objectives adopted under subsection (b)(3).

22 “(2) UPDATE.—Not less frequently than once
23 every 2 years after the initial report is submitted
24 under paragraph (1), the Secretary shall submit to
25 Congress a report describing the progress made to-

1 wards achieving the program goals and objectives
2 adopted under subsection (b)(3).

3 “(d) FUNDING.—

4 “(1) AUTHORIZATION OF APPROPRIATIONS.—

5 There are authorized to be appropriated to the Sec-
6 retary to carry out this section, to remain available
7 until expended—

8 “(A) for activities under the research and
9 development program component described in
10 subsection (b)(2)(A)—

11 “(i) \$230,000,000 for each of fiscal
12 years 2021 and 2022; and

13 “(ii) \$150,000,000 for each of fiscal
14 years 2023 through 2025;

15 “(B) subject to paragraph (2), for activi-
16 ties under the large-scale pilot projects program
17 component described in subsection (b)(2)(B)—

18 “(i) \$347,000,000 for each of fiscal
19 years 2021 and 2022;

20 “(ii) \$272,000,000 for each of fiscal
21 years 2023 and 2024; and

22 “(iii) \$250,000,000 for fiscal year
23 2025;

1 “(C) for activities under the demonstration
2 projects program component described in sub-
3 section (b)(2)(C)—

4 “(i) \$100,000,000 for each of fiscal
5 years 2021 and 2022; and

6 “(ii) \$500,000,000 for each of fiscal
7 years 2023 through 2025; and

8 “(D) for activities under the front-end en-
9 gineering and design program described in sub-
10 section (b)(2)(D), \$50,000,000 for each of fis-
11 cal years 2021 through 2024.

12 “(2) COST SHARING FOR LARGE-SCALE PILOT
13 PROJECTS.—Activities under subsection (b)(2)(B)
14 shall be subject to the cost-sharing requirements of
15 section 988(b).”.

16 (b) TECHNICAL AMENDMENT.—The table of contents
17 for the Energy Policy Act of 2005 (Public Law 109–58;
18 119 Stat. 600) is amended by striking the item relating
19 to section 962 and inserting the following:

“Sec. 962. Coal and natural gas technology program.”.

20 **SEC. 1403. CARBON STORAGE VALIDATION AND TESTING.**

21 (a) IN GENERAL.—Section 963 of the Energy Policy
22 Act of 2005 (42 U.S.C. 16293) is amended—

23 (1) by striking subsection (d) and inserting the
24 following:

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

4 “(1) \$105,000,000 for fiscal year 2021;

5 “(2) \$110,250,000 for fiscal year 2022;

6 “(3) \$115,763,000 for fiscal year 2023;

7 “(4) \$121,551,000 for fiscal year 2024; and

8 “(5) \$127,628,000 for fiscal year 2025.”;

9 (2) in subsection (c)—

10 (A) by striking paragraphs (5) and (6) and
11 inserting the following:

12 “(f) COST SHARING.—Activities carried out under
13 this section shall be subject to the cost-sharing require-
14 ments of section 988.”; and

15 (B) by redesignating paragraph (4) as sub-
16 section (e) and indenting appropriately;

17 (3) in subsection (e) (as so redesignated)—

18 (A) by redesignating subparagraphs (A)
19 and (B) as paragraphs (1) and (2), respectively,
20 and indenting appropriately; and

21 (B) by striking “subsection” each place it
22 appears and inserting “section”; and

23 (4) by striking the section designation and
24 heading and all that follows through the end of sub-
25 section (c)(3) and inserting the following:

1 **“SEC. 963. CARBON STORAGE VALIDATION AND TESTING.**

2 “(a) DEFINITIONS.—In this section:

3 “(1) LARGE-SCALE CARBON SEQUESTRATION.—

4 The term ‘large-scale carbon sequestration’ means a
5 scale that—

6 “(A) demonstrates the ability to inject into
7 geologic formations and sequester carbon diox-
8 ide; and

9 “(B) has a goal of sequestering not less
10 than 50 million metric tons of carbon dioxide
11 over a 10-year period.

12 “(2) PROGRAM.—The term ‘program’ means
13 the program established under subsection (b)(1).

14 “(b) CARBON STORAGE PROGRAM.—

15 “(1) IN GENERAL.—The Secretary shall estab-
16 lish a program of research, development, and dem-
17 onstration for carbon storage.

18 “(2) PROGRAM ACTIVITIES.—Activities under
19 the program shall include—

20 “(A) in coordination with relevant Federal
21 agencies, developing and maintaining mapping
22 tools and resources that assess the capacity of
23 geologic storage formation in the United States;

24 “(B) developing monitoring tools, modeling
25 of geologic formations, and analyses—

1 “(i) to predict carbon dioxide contain-
2 ment; and

3 “(ii) to account for sequestered car-
4 bon dioxide in geologic storage sites;

5 “(C) researching—

6 “(i) potential environmental, safety,
7 and health impacts in the event of a leak
8 into the atmosphere or to an aquifer; and

9 “(ii) any corresponding mitigation ac-
10 tions or responses to limit harmful con-
11 sequences of such a leak;

12 “(D) evaluating the interactions of carbon
13 dioxide with formation solids and fluids, includ-
14 ing the propensity of injections to induce seis-
15 mic activity;

16 “(E) assessing and ensuring the safety of
17 operations relating to geologic sequestration of
18 carbon dioxide;

19 “(F) determining the fate of carbon diox-
20 ide concurrent with and following injection into
21 geologic formations; and

22 “(G) supporting cost and business model
23 assessments to examine the economic viability
24 of technologies and systems developed under the
25 program.

1 “(3) GEOLOGIC SETTINGS.—In carrying out re-
2 search activities under this subsection, the Secretary
3 shall consider a variety of candidate onshore and off-
4 shore geologic settings, including—

5 “(A) operating oil and gas fields;

6 “(B) depleted oil and gas fields;

7 “(C) residual oil zones;

8 “(D) unconventional reservoirs and rock
9 types;

10 “(E) unmineable coal seams;

11 “(F) saline formations in both sedimentary
12 and basaltic geologies;

13 “(G) geologic systems that may be used as
14 engineered reservoirs to extract economical
15 quantities of brine from geothermal resources of
16 low permeability or porosity; and

17 “(H) geologic systems containing in situ
18 carbon dioxide mineralization formations.

19 “(c) LARGE-SCALE CARBON SEQUESTRATION DEM-
20 ONSTRATION PROGRAM.—

21 “(1) IN GENERAL.—The Secretary shall estab-
22 lish a demonstration program under which the Sec-
23 retary shall provide funding for demonstration
24 projects to collect and validate information on the

1 cost and feasibility of commercial deployment of
2 large-scale carbon sequestration technologies.

3 “(2) EXISTING REGIONAL CARBON SEQUESTRA-
4 TION PARTNERSHIPS.—In carrying out paragraph
5 (1), the Secretary may provide additional funding to
6 regional carbon sequestration partnerships that are
7 carrying out or have completed a large-scale carbon
8 sequestration demonstration project under this sec-
9 tion (as in effect on the day before the date of enact-
10 ment of the American Energy Innovation Act of
11 2020) for additional work on that project.

12 “(3) DEMONSTRATION COMPONENTS.—Each
13 demonstration project carried out under this sub-
14 section shall include longitudinal tests involving car-
15 bon dioxide injection and monitoring, mitigation,
16 and verification operations.

17 “(4) CLEARINGHOUSE.—The National Energy
18 Technology Laboratory shall act as a clearinghouse
19 of shared information and resources for—

20 “(A) existing or completed demonstration
21 projects receiving additional funding under
22 paragraph (2); and

23 “(B) any new demonstration projects fund-
24 ed under this subsection.

1 “(5) REPORT.—Not later than 1 year after the
2 date of enactment of the American Energy Innova-
3 tion Act of 2020, the Secretary shall submit to the
4 Committee on Energy and Natural Resources of the
5 Senate and the Committee on Science, Space, and
6 Technology of the House of Representatives a report
7 that—

8 “(A) assesses the progress of all regional
9 carbon sequestration partnerships carrying out
10 a demonstration project under this subsection;

11 “(B) identifies the remaining challenges in
12 achieving large-scale carbon sequestration that
13 is reliable and safe for the environment and
14 public health; and

15 “(C) creates a roadmap for carbon storage
16 research and development activities of the De-
17 partment through 2025, with the goal of reduc-
18 ing economic and policy barriers to commercial
19 carbon sequestration.

20 “(d) INTEGRATED STORAGE.—

21 “(1) IN GENERAL.—The Secretary may transi-
22 tion large-scale carbon sequestration demonstration
23 projects under subsection (c) into integrated com-
24 mercial storage complexes.

1 “(2) GOALS AND OBJECTIVES.—The goals and
2 objectives of the Secretary in seeking to transition
3 large-scale carbon sequestration demonstration
4 projects into integrated commercial storage com-
5 plexes under paragraph (1) shall be—

6 “(A) to identify geologic storage sites that
7 are able to accept large volumes of carbon diox-
8 ide acceptable for commercial contracts;

9 “(B) to understand the technical and com-
10 mercial viability of carbon dioxide geologic stor-
11 age sites; and

12 “(C) to carry out any other activities nec-
13 essary to transition the large-scale carbon se-
14 questration demonstration projects under sub-
15 section (c) into integrated commercial storage
16 complexes.”.

17 (b) TECHNICAL AMENDMENT.—The table of contents
18 for the Energy Policy Act of 2005 (Public Law 109–58;
19 119 Stat. 600; 121 Stat. 1708) is amended by striking
20 the item relating to section 963 and inserting the fol-
21 lowing:

“Sec. 963. Carbon storage validation and testing.”.

22 (c) CONFORMING AMENDMENTS.—

23 (1) Section 703(a)(3) of the Department of En-
24 ergy Carbon Capture and Sequestration Research,
25 Development, and Demonstration Act of 2007 (42

1 U.S.C. 17251(a)(3)) is amended, in the first sen-
2 tence of the matter preceding subparagraph (A), by
3 striking “section 963(c)(3)” and inserting “section
4 963(c)”.

5 (2) Section 704 of the Department of Energy
6 Carbon Capture and Sequestration Research, Devel-
7 opment, and Demonstration Act of 2007 (42 U.S.C.
8 17252) is amended, in the first sentence, by striking
9 “section 963(c)(3)” and inserting “section 963(c)”.

10 **SEC. 1404. CARBON UTILIZATION PROGRAM.**

11 (a) CARBON UTILIZATION PROGRAM.—

12 (1) IN GENERAL.—Subtitle F of title IX of the
13 Energy Policy Act of 2005 (42 U.S.C. 16291 et
14 seq.) is amended by adding at the end the following:

15 **“SEC. 969. CARBON UTILIZATION PROGRAM.**

16 “(a) IN GENERAL.—The Secretary shall establish a
17 program of research, development, and demonstration for
18 carbon utilization—

19 “(1) to assess and monitor—

20 “(A) potential changes in lifecycle carbon
21 dioxide and other greenhouse gas emissions;
22 and

23 “(B) other environmental safety indicators
24 of new technologies, practices, processes, or
25 methods used in enhanced hydrocarbon recovery

1 as part of the activities authorized under sec-
2 tion 963;

3 “(2) to identify and assess novel uses for car-
4 bon, including the conversion of carbon and carbon
5 oxides for commercial and industrial products and
6 other products with potential market value;

7 “(3) to identify and assess carbon capture tech-
8 nologies for industrial systems; and

9 “(4) to identify and assess alternative uses for
10 raw coal and processed coal products in all phases,
11 including products derived from carbon engineering,
12 carbon fiber, and coal conversion methods.

13 “(b) DEMONSTRATION PROGRAMS FOR THE PUR-
14 POSE OF COMMERCIALIZATION.—

15 “(1) IN GENERAL.—Not later than 180 days
16 after the date of enactment of this section, the Sec-
17 retary shall establish a 2-year demonstration pro-
18 gram in each of the 2 major coal-producing regions
19 of the United States for the purpose of partnering
20 with private institutions in coal mining regions to
21 accelerate the commercial deployment of coal-carbon
22 products.

23 “(2) COST SHARING.—Activities under para-
24 graph (1) shall be subject to the cost-sharing re-
25 quirements of section 988.

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

4 “(1) \$29,000,000 for fiscal year 2021;

5 “(2) \$30,250,000 for fiscal year 2022;

6 “(3) \$31,562,500 for fiscal year 2023;

7 “(4) \$32,940,625 for fiscal year 2024; and

8 “(5) \$34,387,656 for fiscal year 2025.”.

9 (2) TECHNICAL AMENDMENT.—The table of
10 contents for the Energy Policy Act of 2005 (Public
11 Law 109–58; 119 Stat. 600) is amended by adding
12 at the end of the items relating to subtitle F of title
13 IX the following:

“Sec. 969. Carbon utilization program.”.

14 (b) STUDY.—

15 (1) IN GENERAL.—The Secretary shall enter
16 into an agreement with the National Academies of
17 Sciences, Engineering, and Medicine under which
18 the National Academies of Sciences, Engineering,
19 and Medicine shall conduct a study to assess any
20 barriers and opportunities relating to commer-
21 cializing carbon, coal-derived carbon, and carbon di-
22 oxide in the United States.

23 (2) REQUIREMENTS.—The study under para-
24 graph (1) shall—

- 1 (A) analyze challenges to commercializing
2 carbon dioxide, including—
- 3 (i) expanding carbon dioxide pipeline
4 capacity;
 - 5 (ii) mitigating environmental impacts;
 - 6 (iii) access to capital;
 - 7 (iv) geographic barriers; and
 - 8 (v) regional economic challenges and
9 opportunities;
- 10 (B) identify potential markets, industries,
11 or sectors that may benefit from greater access
12 to commercial carbon dioxide;
- 13 (C) determine the feasibility of, and oppor-
14 tunities for, the commercialization of coal-de-
15 rived carbon products, including for—
- 16 (i) commercial purposes;
 - 17 (ii) industrial purposes;
 - 18 (iii) defense and military purposes;
 - 19 (iv) agricultural purposes, including
20 soil amendments and fertilizers;
 - 21 (v) medical and pharmaceutical appli-
22 cations;
 - 23 (vi) construction and building applica-
24 tions;
 - 25 (vii) energy applications; and

1 (viii) production of critical minerals;

2 (D) assess—

3 (i) the state of infrastructure as of
4 the date of the study; and

5 (ii) any necessary updates to infra-
6 structure to allow for the integration of
7 safe and reliable carbon dioxide transpor-
8 tation, use, and storage;

9 (E) describe the economic, climate, and en-
10 vironmental impacts of any well-integrated na-
11 tional carbon dioxide pipeline system, including
12 suggestions for policies that could—

13 (i) improve the economic impact of
14 the system; and

15 (ii) mitigate impacts of the system;

16 (F) assess the global status and progress
17 of chemical and biological carbon utilization
18 technologies in practice as of the date of the
19 study that utilize anthropogenic carbon, includ-
20 ing carbon dioxide, carbon monoxide, methane,
21 and biogas, from power generation, biofuels
22 production, and other industrial processes;

23 (G) identify emerging technologies and ap-
24 proaches for carbon utilization that show prom-

1 ise for scale-up, demonstration, deployment,
2 and commercialization;

3 (H) analyze the factors associated with
4 making carbon utilization technologies viable at
5 a commercial scale, including carbon waste
6 stream availability, economics, market capacity,
7 energy, and lifecycle requirements;

8 (I)(i) assess the major technical challenges
9 associated with increasing the commercial via-
10 bility of carbon reuse technologies; and

11 (ii) identify the research and development
12 questions that will address the challenges de-
13 scribed in clause (i);

14 (J)(i) assess research efforts being carried
15 out as of the date of the study, including basic,
16 applied, engineering, and computational re-
17 search efforts, that are addressing the chal-
18 lenges described in subparagraph (I)(i); and

19 (ii) identify gaps in the research efforts
20 under clause (i);

21 (K) develop a comprehensive research
22 agenda that addresses long- and short-term re-
23 search needs and opportunities; and

1 (L)(i) identify appropriate Federal agen-
2 cies with capabilities to support small business
3 entities; and

4 (ii) determine what assistance the Federal
5 agencies identified under clause (i) could pro-
6 vide to small business entities to further the de-
7 velopment and commercial deployment of car-
8 bon dioxide-based products.

9 (3) DEADLINE.—Not later than 180 days after
10 the date of enactment of this Act, the National
11 Academies of Sciences, Engineering, and Medicine
12 shall submit to the Secretary a report describing the
13 results of the study under paragraph (1).

14 **SEC. 1405. CARBON REMOVAL.**

15 (a) IN GENERAL.—Subtitle F of title IX of the En-
16 ergy Policy Act of 2005 (42 U.S.C. 16291 et seq.) (as
17 amended by section 1404(a)(1)) is amended by adding at
18 the end the following:

19 **“SEC. 969A. CARBON REMOVAL.**

20 “(a) ESTABLISHMENT.—The Secretary, in coordina-
21 tion with the heads of appropriate Federal agencies, in-
22 cluding the Secretary of Agriculture, shall establish a re-
23 search, development, and demonstration program (re-
24 ferred to in this section as the ‘program’) to test, validate,

1 or improve technologies and strategies to remove carbon
2 dioxide from the atmosphere on a large scale.

3 “(b) INTRAAGENCY COORDINATION.—The Secretary
4 shall ensure that the program includes the coordinated
5 participation of the Office of Fossil Energy, the Office of
6 Science, and the Office of Energy Efficiency and Renew-
7 able Energy.

8 “(c) PROGRAM ACTIVITIES.—The program may in-
9 clude research, development, and demonstration activities
10 relating to—

11 “(1) direct air capture and storage technologies;

12 “(2) bioenergy with carbon capture and seques-
13 tration;

14 “(3) enhanced geological weathering;

15 “(4) agricultural practices;

16 “(5) forest management and afforestation; and

17 “(6) planned or managed carbon sinks, includ-
18 ing natural and artificial.

19 “(d) REQUIREMENTS.—In developing and identifying
20 carbon removal technologies and strategies under the pro-
21 gram, the Secretary shall consider—

22 “(1) land use changes, including impacts on
23 natural and managed ecosystems;

24 “(2) ocean acidification;

25 “(3) net greenhouse gas emissions;

1 “(4) commercial viability;

2 “(5) potential for near-term impact;

3 “(6) potential for carbon reductions on a
4 gigaton scale; and

5 “(7) economic cobenefits.

6 “(e) AIR CAPTURE TECHNOLOGY PRIZE COMPETI-
7 TION.—

8 “(1) DEFINITIONS.—In this subsection:

9 “(A) DILUTE MEDIA.—The term ‘dilute
10 media’ means media in which the concentration
11 of carbon dioxide is less than 1 percent by vol-
12 ume.

13 “(B) PRIZE COMPETITION.—The term
14 ‘prize competition’ means the competitive tech-
15 nology prize competition established under
16 paragraph (2).

17 “(2) ESTABLISHMENT.—Not later than 2 years
18 after the date of enactment of this section, the Sec-
19 retary, in consultation with the Administrator of the
20 Environmental Protection Agency, shall establish as
21 part of the program a competitive technology prize
22 competition to award prizes for carbon dioxide cap-
23 ture from dilute media.

24 “(3) REQUIREMENTS.—In carrying out this
25 subsection, the Secretary, in accordance with section

1 24 of the Stevenson-Wydler Technology Innovation
2 Act of 1980 (15 U.S.C. 3719), shall develop require-
3 ments for—

4 “(A) the prize competition process; and

5 “(B) monitoring and verification proce-
6 dures for projects selected to receive a prize
7 under the prize competition.

8 “(4) ELIGIBLE PROJECTS.—To be eligible to be
9 awarded a prize under the prize competition, a
10 project shall—

11 “(A) meet minimum performance stand-
12 ards set by the Secretary;

13 “(B) meet minimum levels set by the Sec-
14 retary for the capture of carbon dioxide from
15 dilute media; and

16 “(C) demonstrate in the application of the
17 project for a prize—

18 “(i) a design for a promising carbon
19 capture technology that will—

20 “(I) be operated on a demonstra-
21 tion scale; and

22 “(II) have the potential to
23 achieve significant reduction in the
24 level of carbon dioxide in the atmos-
25 phere;

1 “(ii) a successful bench-scale dem-
2 onstration of a carbon capture technology;

3 or

4 “(iii) an operational carbon capture
5 technology on a commercial scale.

6 “(f) DIRECT AIR CAPTURE TEST CENTER.—

7 “(1) IN GENERAL.—Not later than 2 years
8 after the date of enactment of this section, the Sec-
9 retary shall award grants to 1 or more entities for
10 the operation of 1 or more test centers (referred to
11 in this subsection as a ‘Center’) to provide unique
12 testing capabilities for innovative direct air capture
13 and storage technologies.

14 “(2) PURPOSE.—Each Center shall—

15 “(A) advance research, development, dem-
16 onstration, and commercial application of direct
17 air capture and storage technologies;

18 “(B) support large-scale pilot and dem-
19 onstration projects and test direct air capture
20 and storage technologies;

21 “(C) develop front-end engineering design
22 and economic analysis; and

23 “(D) maintain a public record of pilot and
24 full-scale plant performance.

25 “(3) SELECTION.—

1 “(A) IN GENERAL.—The Secretary shall
2 select entities to receive grants under this sub-
3 section according to such criteria as the Sec-
4 retary may develop.

5 “(B) COMPETITIVE BASIS.—The Secretary
6 shall select entities to receive grants under this
7 subsection on a competitive basis.

8 “(C) PRIORITY CRITERIA.—In selecting en-
9 tities to receive grants under this subsection,
10 the Secretary shall prioritize applicants that—

11 “(i) have access to existing or planned
12 research facilities for direct air capture
13 and storage technologies;

14 “(ii) are institutions of higher edu-
15 cation with established expertise in engi-
16 neering for direct air capture and storage
17 technologies, or partnerships with such in-
18 stitutions of higher education; or

19 “(iii) have access to existing research
20 and test facilities for bulk materials design
21 and testing, component design and testing,
22 or professional engineering design.

23 “(4) FORMULA FOR AWARDED GRANTS.—The
24 Secretary may develop a formula for awarding
25 grants under this subsection.

1 “(5) SCHEDULE.—

2 “(A) IN GENERAL.—Each grant awarded
3 under this subsection shall be for a term of not
4 more than 5 years, subject to the availability of
5 appropriations.

6 “(B) RENEWAL.—The Secretary may
7 renew a grant for 1 or more additional 5-year
8 terms, subject to a competitive merit review and
9 the availability of appropriations.

10 “(6) TERMINATION.—To the extent otherwise
11 authorized by law, the Secretary may eliminate, and
12 terminate grant funding under this subsection for, a
13 Center during any 5-year term described in para-
14 graph (5) if the Secretary determines that the Cen-
15 ter is underperforming.

16 “(g) PILOT AND DEMONSTRATION PROJECTS.—In
17 supporting the technology development activities under
18 this section, the Secretary is encouraged to support carbon
19 removal pilot and demonstration projects, including—

20 “(1) pilot projects that test direct air capture
21 systems capable of capturing 10 to 100 tonnes of
22 carbon oxides per year to provide data for dem-
23 onstration-scale projects; and

1 “(2) direct air capture demonstration projects
2 capable of capturing greater than 1,000 tonnes of
3 carbon oxides per year.

4 “(h) INTRAAGENCY COORDINATION.—The direct air
5 capture activities carried out under subsections (c)(1) and
6 (e) shall be carried out in coordination with, and
7 leveraging lessons learned from, the coal and natural gas
8 technology program established under section 962(b)(1).

9 “(i) ACCOUNTING.—The Secretary shall collaborate
10 with the Administrator of the Environmental Protection
11 Agency and the heads of other relevant Federal agencies
12 to develop and improve accounting frameworks and tools
13 to accurately measure carbon removal and sequestration
14 methods and technologies across the Federal Government.

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

18 “(1) \$75,000,000 for fiscal year 2021, of which
19 \$15,000,000 shall be used to carry out subsection
20 (e);

21 “(2) \$63,500,000 for fiscal year 2022;

22 “(3) \$66,150,000 for fiscal year 2023;

23 “(4) \$69,458,000 for fiscal year 2024; and

24 “(5) \$72,930,000 for fiscal year 2025.”.

1 (b) TECHNICAL AMENDMENT.—The table of contents
2 for the Energy Policy Act of 2005 (Public Law 109–58;
3 119 Stat. 600) (as amended by section 1404(a)(2)) is
4 amended by adding at the end of the items relating to
5 subtitle F of title IX the following:

“Sec. 969A. Carbon removal.”.

6 **Subtitle E—Nuclear**

7 **SEC. 1501. LIGHT WATER REACTOR SUSTAINABILITY PRO-**
8 **GRAM.**

9 Section 952 of the Energy Policy Act of 2005 (42
10 U.S.C. 16272) is amended by striking subsection (b) and
11 inserting the following:

12 “(b) LIGHT WATER REACTOR SUSTAINABILITY PRO-
13 GRAM.—The Secretary shall carry out a light water reac-
14 tor sustainability program—

15 “(1) to ensure the achievement of maximum
16 benefits from existing nuclear generation;

17 “(2) to accommodate the increase in applica-
18 tions for nuclear power plant license renewals ex-
19 pected as of the date of enactment of this sub-
20 section;

21 “(3) to enable the continued operation of exist-
22 ing nuclear power plants through technology devel-
23 opment;

1 “(4) to improve the performance and reduce the
2 operation and maintenance costs of nuclear power
3 plants;

4 “(5) to promote the use of high-performance
5 computing to simulate nuclear reactor processes;

6 “(6) to coordinate with other research and de-
7 velopment programs of the Office of Nuclear Energy
8 to ensure that developed technologies and capabili-
9 ties are part of an integrated investment strategy,
10 the overall focus of which is improving the safety,
11 security, reliability, and economics of operating nu-
12 clear power plants; and

13 “(7) to focus on—

14 “(A) new capabilities relating to nuclear
15 energy research and development;

16 “(B) enabling technologies beyond indi-
17 vidual programs;

18 “(C) coordinating capabilities among the
19 research and development programs of the Of-
20 fice of Nuclear Energy;

21 “(D) examining new classes of materials
22 not considered for nuclear applications;

23 “(E) high-risk research, which could poten-
24 tially overcome technological limitations; and

1 “(F) the potential for industry partner-
2 ships to develop technologies relating to stor-
3 age, hydrogen production, high-temperature
4 process heat, and other relevant areas.”.

5 **SEC. 1502. NUCLEAR ENERGY RESEARCH, DEVELOPMENT,**
6 **AND DEMONSTRATION.**

7 Section 952 of the Energy Policy Act of 2005 (42
8 U.S.C. 16272) is amended by adding at the end the fol-
9 lowing:

10 “(e) **ADVANCED REACTOR TECHNOLOGIES DEVEL-**
11 **OPMENT PROGRAM.—**

12 “(1) **IN GENERAL.—**The Secretary shall carry
13 out a program under which the Secretary shall con-
14 duct research relating to the development of innova-
15 tive nuclear reactor technologies that may offer im-
16 proved safety, functionality, and affordability.

17 “(2) **REQUIREMENTS.—**The program under this
18 subsection shall—

19 “(A) support efforts to reduce long-term
20 technical barriers for advanced nuclear energy
21 systems; and

22 “(B) be carried out in consultation with
23 the Nuclear Regulatory Commission to ensure
24 identification of any relevant concerns.”.

1 **SEC. 1503. ADVANCED FUELS DEVELOPMENT.**

2 Section 953 of the Energy Policy Act of 2005 (42
3 U.S.C. 16273) is amended—

4 (1) by redesignating subsections (a) through (d)
5 as paragraphs (1), (3), (4), and (5), respectively,
6 and indenting appropriately;

7 (2) in paragraph (1) (as so redesignated)—

8 (A) by striking “this section” and inserting
9 “this subsection”;

10 (B) by striking “minimize environmental”
11 and inserting “improve fuel cycle performance
12 while minimizing the cost and complexity of
13 processing, environmental impacts,”; and

14 (C) by striking “the Generation IV”;

15 (3) by inserting after paragraph (1) (as so re-
16 designated) the following:

17 “(2) CONSIDERATIONS.—In carrying out activi-
18 ties under the program, the Secretary shall consider
19 the potential benefits of those activities for civilian
20 nuclear applications, environmental remediation, and
21 national security.”;

22 (4) by inserting after paragraph (5) (as so re-
23 designated) the following:

24 “(6) AUTHORIZATION OF APPROPRIATIONS.—
25 There is authorized to be appropriated to the Sec-

1 retary to carry out the program \$40,000,000 for
2 each of fiscal years 2021 through 2025.”;

3 (5) by inserting before paragraph (1) (as so re-
4 designated) the following:

5 “(a) MATERIAL RECOVERY AND WASTE FORM DE-
6 VELOPMENT.—”; and

7 (6) by adding at the end the following:

8 “(b) ADVANCED FUELS.—

9 “(1) IN GENERAL.—The Secretary shall carry
10 out a program to conduct research relating to—

11 “(A) next-generation light water reactor
12 fuels that demonstrate improved—

13 “(i) performance; and

14 “(ii) accident tolerance; and

15 “(B) advanced reactor fuels that dem-
16 onstrate improved—

17 “(i) proliferation resistance; and

18 “(ii) use of resources.

19 “(2) REQUIREMENTS.—In carrying out the pro-
20 gram under this subsection, the Secretary shall—

21 “(A) focus on the development of accident-
22 tolerant fuel and cladding concepts that are ca-
23 pable of achieving initial commercialization by
24 December 31, 2025;

1 “(B) conduct studies regarding the means
2 by which those concepts would impact reactor
3 economics, the fuel cycle, operations, safety,
4 and the environment;

5 “(C) subject to paragraph (3), publish the
6 results of the studies conducted under subpara-
7 graph (B); and

8 “(D) cooperate with institutions of higher
9 education through the Nuclear Energy Univer-
10 sity and Integrated Research Projects programs
11 of the Department.

12 “(3) SENSITIVE INFORMATION.—The Secretary
13 shall not publish any information under paragraph
14 (2)(C) that is detrimental to national security, as de-
15 termined by the Secretary.

16 “(4) AUTHORIZATION OF APPROPRIATIONS.—
17 There is authorized to be appropriated to the Sec-
18 retary to carry out the program under this sub-
19 section \$120,000,000 for each of fiscal years 2021
20 through 2025.”.

21 **SEC. 1504. NUCLEAR SCIENCE AND ENGINEERING SUP-**
22 **PORT.**

23 (a) IN GENERAL.—Section 954 of the Energy Policy
24 Act of 2005 (42 U.S.C. 16274) is amended—

1 (1) in the section heading, by striking
2 “**UNIVERSITY NUCLEAR**” and inserting
3 “**NUCLEAR**”;

4 (2) in subsection (b)—

5 (A) in the matter preceding paragraph (1),
6 by striking “this section” and inserting “this
7 subsection”; and

8 (B) by redesignating paragraphs (1)
9 through (5) as subparagraphs (A) through (E),
10 respectively, and indenting appropriately;

11 (3) in subsection (c), by redesignating para-
12 graphs (1) and (2) as subparagraphs (A) and (B),
13 respectively, and indenting appropriately;

14 (4) in subsection (d)—

15 (A) in the matter preceding paragraph (1),
16 by striking “this section” and inserting “this
17 subsection”; and

18 (B) by redesignating paragraphs (1)
19 through (4) as subparagraphs (A) through (D),
20 respectively, and indenting appropriately;

21 (5) in subsection (e), by striking “this section”
22 and inserting “this subsection”;

23 (6) in subsection (f)—

24 (A) by striking “this section” and inserting
25 “this subsection”; and

1 (B) by striking “subsection (b)(2)” and in-
2 serting “paragraph (2)(B)”;

3 (7) by redesignating subsections (a) through (f)
4 as paragraphs (1), (2), (3), (4), (6), and (7), respec-
5 tively, and indenting appropriately;

6 (8) by inserting after paragraph (4) (as so re-
7 designated) the following:

8 “(5) RADIOLOGICAL FACILITIES MANAGE-
9 MENT.—

10 “(A) IN GENERAL.—The Secretary shall
11 carry out a program under which the Secretary
12 shall provide project management, technical
13 support, quality engineering and inspection, and
14 nuclear material support to research reactors
15 located at universities.

16 “(B) AUTHORIZATION OF APPROPRIA-
17 TIONS.—In addition to any amounts appro-
18 priated to carry out the program under this
19 subsection, there is authorized to be appro-
20 priated to the Secretary to carry out the pro-
21 gram under this paragraph \$15,000,000 for
22 each of fiscal years 2021 through 2025.”;

23 (9) by inserting before paragraph (1) (as so re-
24 designated) the following:

1 “(a) UNIVERSITY NUCLEAR SCIENCE AND ENGI-
2 NEERING SUPPORT.—”; and

3 (10) by adding at the end the following:

4 “(b) NUCLEAR ENERGY APPRENTICESHIP SUBPRO-
5 GRAM.—

6 “(1) ESTABLISHMENT.—In carrying out the
7 program under subsection (a), the Secretary shall
8 establish a nuclear energy apprenticeship subpro-
9 gram under which the Secretary shall establish com-
10 petitively awarded traineeships and apprenticeships
11 in industries that are represented by skilled labor
12 unions and with universities to provide focused,
13 graduate-level training to meet highly focused needs
14 through a tailored academic graduate program that
15 delivers a curriculum with a rigorous thesis or dis-
16 sertation research requirement aligned with the crit-
17 ical needs of the Department with respect to mis-
18 sion-driven workforce.

19 “(2) REQUIREMENTS.—In carrying out the sub-
20 program under this subsection, the Secretary shall—

21 “(A) encourage appropriate partnerships
22 among National Laboratories, affected univer-
23 sities, and industry; and

24 “(B) on an annual basis, evaluate the
25 needs of the nuclear energy community to im-

1 plement traineeships for focused topical areas
2 addressing mission-specific workforce needs.

3 “(3) AUTHORIZATION OF APPROPRIATIONS.—

4 There is authorized to be appropriated to the Sec-
5 retary to carry out the subprogram under this sub-
6 section \$5,000,000 for each of fiscal years 2021
7 through 2025.”.

8 (b) CONFORMING AMENDMENT.—The table of con-
9 tents of the Energy Policy Act of 2005 (Public Law 109–
10 58; 119 Stat. 600) is amended by striking the item relat-
11 ing to section 954 and inserting the following:

 “Sec. 954. Nuclear science and engineering support.”.

12 **SEC. 1505. UNIVERSITY NUCLEAR LEADERSHIP PROGRAM.**

13 Section 313 of the Energy and Water Development
14 and Related Agencies Appropriations Act, 2009 (42
15 U.S.C. 16274a), is amended to read as follows:

16 **“SEC. 313. UNIVERSITY NUCLEAR LEADERSHIP PROGRAM.**

17 “(a) DEFINITIONS.—In this section:

18 “(1) ADVANCED NUCLEAR REACTOR.—The
19 term ‘advanced nuclear reactor’ means—

20 “(A) a nuclear fission reactor, including a
21 prototype plant (as defined in sections 50.2 and
22 52.1 of title 10, Code of Federal Regulations
23 (or successor regulations)), with significant im-
24 provements compared to the most recent gen-

1 eration of fission reactors, including improve-
2 ments such as—

3 “(i) additional inherent safety fea-
4 tures;

5 “(ii) lower waste yields;

6 “(iii) improved fuel performance;

7 “(iv) increased tolerance to loss of
8 fuel cooling;

9 “(v) enhanced reliability;

10 “(vi) increased proliferation resist-
11 ance;

12 “(vii) increased thermal efficiency;

13 “(viii) reduced consumption of cooling
14 water;

15 “(ix) the ability to integrate into elec-
16 tric applications and nonelectric applica-
17 tions;

18 “(x) modular sizes to allow for deploy-
19 ment that corresponds with the demand
20 for electricity; or

21 “(xi) operational flexibility to respond
22 to changes in demand for electricity and to
23 complement integration with intermittent
24 renewable energy; and

25 “(B) a fusion reactor.

1 “(2) INSTITUTION OF HIGHER EDUCATION.—

2 The term ‘institution of higher education’ has the
3 meaning given the term in section 101(a) of the
4 Higher Education Act of 1965 (20 U.S.C. 1001(a)).

5 “(3) PROGRAM.—The term ‘Program’ means
6 the University Nuclear Leadership Program estab-
7 lished under subsection (b).

8 “(b) ESTABLISHMENT.—The Secretary of Energy,
9 the Administrator of the National Nuclear Security Ad-
10 ministration, and the Chairman of the Nuclear Regulatory
11 Commission shall jointly establish a program, to be known
12 as the ‘University Nuclear Leadership Program’.

13 “(c) USE OF FUNDS.—

14 “(1) IN GENERAL.—Except as provided in para-
15 graph (2), amounts made available to carry out the
16 Program shall be used to provide financial assistance
17 for scholarships, fellowships, and research and devel-
18 opment projects at institutions of higher education
19 in areas relevant to the programmatic mission of the
20 applicable Federal agency providing the financial as-
21 sistance with respect to research, development, dem-
22 onstration, and deployment activities for technologies
23 relevant to advanced nuclear reactors, including rel-
24 evant fuel cycle technologies.

1 “(2) EXCEPTION.—Notwithstanding paragraph
2 (1), amounts made available to carry out the Pro-
3 gram may be used to provide financial assistance for
4 a scholarship, fellowship, or multiyear research and
5 development project that does not align directly with
6 a programmatic mission of the applicable Federal
7 agency providing the financial assistance, if the ac-
8 tivity for which assistance is provided would facili-
9 tate the maintenance of the discipline of nuclear
10 science or nuclear engineering.

11 “(d) AUTHORIZATION OF APPROPRIATIONS.—There
12 are authorized to be appropriated to carry out the Pro-
13 gram for fiscal year 2021 and each fiscal year thereafter—

14 “(1) \$30,000,000 to the Secretary of Energy,
15 of which \$15,000,000 shall be for use by the Admin-
16 istrator of the National Nuclear Security Adminis-
17 tration; and

18 “(2) \$15,000,000 to the Nuclear Regulatory
19 Commission.”.

20 **SEC. 1506. VERSATILE, REACTOR-BASED FAST NEUTRON**
21 **SOURCE.**

22 Section 955(c)(1) of the Energy Policy Act of 2005
23 (42 U.S.C. 16275(c)(1)) is amended—

24 (1) in the paragraph heading, by striking “MIS-
25 SION NEED” and inserting “AUTHORIZATION”; and

1 (2) in subparagraph (A), by striking “determine
2 the mission need” and inserting “provide”.

3 **SEC. 1507. ADVANCED NUCLEAR REACTOR RESEARCH AND**
4 **DEVELOPMENT GOALS.**

5 (a) IN GENERAL.—Subtitle E of title IX of the En-
6 ergy Policy Act of 2005 (42 U.S.C. 16271 et seq.) is
7 amended by adding at the end the following:

8 **“SEC. 959A. ADVANCED NUCLEAR REACTOR RESEARCH**
9 **AND DEVELOPMENT GOALS.**

10 “(a) DEFINITIONS.—In this section:

11 “(1) ADVANCED NUCLEAR REACTOR.—The
12 term ‘advanced nuclear reactor’ means—

13 “(A) a nuclear fission reactor, including a
14 prototype plant (as defined in sections 50.2 and
15 52.1 of title 10, Code of Federal Regulations
16 (or successor regulations)), with significant im-
17 provements compared to the most recent gen-
18 eration of fission reactors, including improve-
19 ments such as—

20 “(i) additional inherent safety fea-
21 tures;

22 “(ii) lower waste yields;

23 “(iii) improved fuel performance;

24 “(iv) increased tolerance to loss of
25 fuel cooling;

- 1 “(v) enhanced reliability;
- 2 “(vi) increased proliferation resist-
- 3 ance;
- 4 “(vii) increased thermal efficiency;
- 5 “(viii) reduced consumption of cooling
- 6 water;
- 7 “(ix) the ability to integrate into elec-
- 8 tric applications and nonelectric applica-
- 9 tions;
- 10 “(x) modular sizes to allow for deploy-
- 11 ment that corresponds with the demand
- 12 for electricity; or
- 13 “(xi) operational flexibility to respond
- 14 to changes in demand for electricity and to
- 15 complement integration with intermittent
- 16 renewable energy; and
- 17 “(B) a fusion reactor.

18 “(2) DEMONSTRATION PROJECT.—The term

19 ‘demonstration project’ means an advanced nuclear

20 reactor operated in any manner, including as part of

21 the power generation facilities of an electric utility

22 system, for the purpose of demonstrating the suit-

23 ability for commercial application of the advanced

24 nuclear reactor.

1 “(b) PURPOSE.—The purpose of this section is to di-
2 rect the Secretary, as soon as practicable after the date
3 of enactment of this section, to advance the research and
4 development of domestic advanced, affordable, and clean
5 nuclear energy by—

6 “(1) demonstrating different advanced nuclear
7 reactor technologies that could be used by the pri-
8 vate sector to produce—

9 “(A) emission-free power at a levelized cost
10 of electricity of \$60 per megawatt-hour or less;

11 “(B) heat for community heating, indus-
12 trial purposes, or synthetic fuel production;

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

14 “(D) backup or mission-critical power sup-
15 plies;

16 “(2) developing subgoals for nuclear energy re-
17 search programs that would accomplish the goals of
18 the demonstration projects carried out under sub-
19 section (c);

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

23 “(4) facilitating the access of the private sec-
24 tor—

1 “(A) to Federal research facilities and per-
2 sonnel; and

3 “(B) to the results of research relating to
4 civil nuclear technology funded by the Federal
5 Government.

6 “(c) DEMONSTRATION PROJECTS.—

7 “(1) IN GENERAL.—The Secretary shall, to the
8 maximum extent practicable—

9 “(A) enter into agreements to complete not
10 fewer than 2 demonstration projects by not
11 later than December 31, 2025; and

12 “(B) establish a program to enter into
13 agreements to complete 1 additional operational
14 demonstration project by not later than Decem-
15 ber 31, 2035.

16 “(2) REQUIREMENTS.—In carrying out dem-
17 onstration projects under paragraph (1), the Sec-
18 retary shall—

19 “(A) include diversity in designs for the
20 advanced nuclear reactors demonstrated under
21 this section, including designs using various—

22 “(i) primary coolants;

23 “(ii) fuel types and compositions; and

24 “(iii) neutron spectra;

25 “(B) seek to ensure that—

1 “(i) the long-term cost of electricity or
2 heat for each design to be demonstrated
3 under this subsection is cost-competitive in
4 the applicable market;

5 “(ii) the selected projects can meet
6 the deadline established in paragraph (1)
7 to demonstrate first-of-a-kind advanced
8 nuclear reactor technologies, for which ad-
9 ditional information shall be considered, in-
10 cluding—

11 “(I) the technology readiness
12 level of a proposed advanced nuclear
13 reactor technology;

14 “(II) the technical abilities and
15 qualifications of teams desiring to
16 demonstrate a proposed advanced nu-
17 clear reactor technology; and

18 “(III) the capacity to meet cost-
19 share requirements of the Depart-
20 ment;

21 “(C) ensure that each evaluation of can-
22 didate technologies for the demonstration
23 projects is completed through an external re-
24 view of proposed designs, which review shall—

1 “(i) be conducted by a panel that in-
2 cludes not fewer than 1 representative of
3 each of—

4 “(I) an electric utility; and

5 “(II) an entity that uses high-
6 temperature process heat for manu-
7 facturing or industrial processing,
8 such as a petrochemical company, a
9 manufacturer of metals, or a manu-
10 facturer of concrete;

11 “(ii) include a review of cost-competi-
12 tiveness and other value streams, together
13 with the technology readiness level, of each
14 design to be demonstrated under this sub-
15 section; and

16 “(iii) not be required for a demonstra-
17 tion project that receives no financial as-
18 sistance from the Department for con-
19 struction costs;

20 “(D) for federally funded demonstration
21 projects, enter into cost-sharing agreements
22 with private sector partners in accordance with
23 section 988 for the conduct of activities relating
24 to the research, development, and demonstra-

1 tion of private-sector advanced nuclear reactor
2 designs under the program;

3 “(E) work with private sector partners to
4 identify potential sites, including Department-
5 owned sites, for demonstrations, as appropriate;

6 “(F) align specific activities carried out
7 under demonstration projects carried out under
8 this subsection with priorities identified through
9 direct consultations between—

10 “(i) the Department;

11 “(ii) National Laboratories;

12 “(iii) institutions of higher education;

13 “(iv) traditional end-users (such as
14 electric utilities);

15 “(v) potential end-users of new tech-
16 nologies (such as users of high-tempera-
17 ture process heat for manufacturing proc-
18 essing, including petrochemical companies,
19 manufacturers of metals, or manufacturers
20 of concrete); and

21 “(vi) developers of advanced nuclear
22 reactor technology; and

23 “(G) seek to ensure that the demonstration
24 projects carried out under paragraph (1) do not
25 cause any delay in a deployment of an advanced

1 reactor by private industry and the Department
2 that is underway as of the date of enactment of
3 this section.

4 “(3) ADDITIONAL REQUIREMENTS.—In car-
5 rying out demonstration projects under paragraph
6 (1), the Secretary shall—

7 “(A) identify candidate technologies that—

8 “(i) are not developed sufficiently for
9 demonstration within the initial required
10 timeframe described in paragraph (1)(A);
11 but

12 “(ii) could be demonstrated within the
13 timeframe described in paragraph (1)(B);

14 “(B) identify technical challenges to the
15 candidate technologies identified in subpara-
16 graph (A);

17 “(C) support near-term research and devel-
18 opment to address the highest-risk technical
19 challenges to the successful demonstration of a
20 selected advanced reactor technology, in accord-
21 ance with—

22 “(i) subparagraph (B); and

23 “(ii) the research and development ac-
24 tivities under sections 952 and 958;

1 “(D) establish such technology advisory
2 working groups as the Secretary determines to
3 be appropriate to advise the Secretary regard-
4 ing the technical challenges identified under
5 subparagraph (B) and the scope of research
6 and development programs to address the chal-
7 lenges, in accordance with subparagraph (C), to
8 be comprised of—

9 “(i) private-sector advanced nuclear
10 reactor technology developers;

11 “(ii) technical experts with respect to
12 the relevant technologies at institutions of
13 higher education; and

14 “(iii) technical experts at the National
15 Laboratories.

16 “(d) GOALS.—

17 “(1) IN GENERAL.—The Secretary shall estab-
18 lish goals for research relating to advanced nuclear
19 reactors facilitated by the Department that support
20 the objectives of the program for demonstration
21 projects established under subsection (c).

22 “(2) COORDINATION.—In developing the goals
23 under paragraph (1), the Secretary shall coordinate,
24 on an ongoing basis, with members of private indus-

1 try to advance the demonstration of various designs
2 of advanced nuclear reactors.

3 “(3) REQUIREMENTS.—In developing the goals
4 under paragraph (1), the Secretary shall ensure
5 that—

6 “(A) research activities facilitated by the
7 Department to meet the goals developed under
8 this subsection are focused on key areas of nu-
9 clear research and deployment ranging from
10 basic science to full-design development, safety
11 evaluation, and licensing;

12 “(B) research programs designed to meet
13 the goals emphasize—

14 “(i) resolving materials challenges re-
15 lating to extreme environments, including
16 extremely high levels of—

17 “(I) radiation fluence;

18 “(II) temperature;

19 “(III) pressure; and

20 “(IV) corrosion; and

21 “(ii) qualification of advanced fuels;

22 “(C) activities are carried out that address
23 near-term challenges in modeling and simula-
24 tion to enable accelerated design and licensing;

1 “(D) related technologies, such as tech-
2 nologies to manage, reduce, or reuse nuclear
3 waste, are developed;

4 “(E) nuclear research infrastructure is
5 maintained or constructed, such as—

6 “(i) currently operational research re-
7 actors at the National Laboratories and in-
8 stitutions of higher education;

9 “(ii) hot cell research facilities;

10 “(iii) a versatile fast neutron source;

11 and

12 “(iv) a molten salt testing facility;

13 “(F) basic knowledge of non-light water
14 coolant physics and chemistry is improved;

15 “(G) advanced sensors and control systems
16 are developed; and

17 “(H) advanced manufacturing and ad-
18 vanced construction techniques and materials
19 are investigated to reduce the cost of advanced
20 nuclear reactors.”.

21 (b) TABLE OF CONTENTS.—The table of contents of
22 the Energy Policy Act of 2005 (Public Law 109–58; 119
23 Stat. 594; 132 Stat. 3160) is amended—

24 (1) in the item relating to section 917, by strik-
25 ing “Efficiency”;

1 (2) in the items relating to each of sections
2 957, 958, and 959 by inserting “Sec.” before the
3 item number; and

4 (3) by inserting after the item relating to sec-
5 tion 959 the following:

“Sec. 959A. Advanced nuclear reactor research and development goals.”.

6 **SEC. 1508. NUCLEAR ENERGY STRATEGIC PLAN.**

7 (a) IN GENERAL.—Subtitle E of title IX of the En-
8 ergy Policy Act of 2005 (42 U.S.C. 16271 et seq.) (as
9 amended by section 1507(a)) is amended by adding at the
10 end the following:

11 **“SEC. 959B. NUCLEAR ENERGY STRATEGIC PLAN.**

12 “(a) IN GENERAL.—Not later than 180 days after
13 the date of enactment of this section, the Secretary shall
14 submit to the Committee on Energy and Natural Re-
15 sources of the Senate and the Committees on Energy and
16 Commerce and Science, Space, and Technology of the
17 House of Representatives a 10-year strategic plan for the
18 Office of Nuclear Energy of the Department, in accord-
19 ance with this section.

20 “(b) REQUIREMENTS.—

21 “(1) COMPONENTS.—The strategic plan under
22 this section shall designate—

23 “(A) programs that support the planned
24 accomplishment of—

1 “(i) the goals established under sec-
2 tion 959A; and

3 “(ii) the demonstration programs
4 identified under subsection (c) of that sec-
5 tion; and

6 “(B) programs that—

7 “(i) do not support the planned ac-
8 complishment of demonstration programs,
9 or the goals, referred to in subparagraph
10 (A); but

11 “(ii) are important to the mission of
12 the Office of Nuclear Energy, as deter-
13 mined by the Secretary.

14 “(2) PROGRAM PLANNING.—In developing the
15 strategic plan under this section, the Secretary shall
16 specify expected timelines for, as applicable—

17 “(A) the accomplishment of relevant objec-
18 tives under current programs of the Depart-
19 ment; or

20 “(B) the commencement of new programs
21 to accomplish those objectives.

22 “(c) UPDATES.—Not less frequently than once every
23 2 years, the Secretary shall submit to the Committee on
24 Energy and Natural Resources of the Senate and the
25 Committees on Energy and Commerce and Science, Space,

1 and Technology of the House of Representatives an up-
2 dated 10-year strategic plan in accordance with subsection
3 (b), which shall identify, and provide a justification for,
4 any major deviation from a previous strategic plan sub-
5 mitted under this section.”.

6 (b) TABLE OF CONTENTS.—The table of contents of
7 the Energy Policy Act of 2005 (Public Law 109–58; 119
8 Stat. 594; 132 Stat. 3160) (as amended by section
9 1507(b)(3)) is amended by inserting after the item relat-
10 ing to section 959A the following:

“Sec. 959B. Nuclear energy strategic plan.”.

11 **SEC. 1509. ADVANCED NUCLEAR FUEL SECURITY PRO-**
12 **GRAM.**

13 (a) IN GENERAL.—Subtitle E of title IX of the En-
14 ergy Policy Act of 2005 (42 U.S.C. 16271 et seq.) (as
15 amended by section 1508(a)) is amended by adding at the
16 end the following:

17 **“SEC. 960. ADVANCED NUCLEAR FUEL SECURITY PRO-**
18 **GRAM.**

19 “(a) DEFINITIONS.—In this section:

20 “(1) HALEU TRANSPORTATION PACKAGE.—
21 The term ‘HALEU transportation package’ means a
22 transportation package that is suitable for trans-
23 porting high-assay, low-enriched uranium.

24 “(2) HIGH-ASSAY, LOW-ENRICHED URANIUM.—
25 The term ‘high-assay, low-enriched uranium’ means

1 uranium with an assay greater than 5 weight per-
2 cent, but less than 20 weight percent, of the ura-
3 nium-235 isotope.

4 “(3) HIGH-ENRICHED URANIUM.—The term
5 ‘high-enriched uranium’ means uranium with an
6 assay of 20 weight percent or more of the uranium-
7 235 isotope.

8 “(b) HIGH-ASSAY, LOW-ENRICHED URANIUM PRO-
9 GRAM FOR ADVANCED REACTORS.—

10 “(1) ESTABLISHMENT.—Not later than 1 year
11 after the date of enactment of this section, the Sec-
12 retary shall establish a program to make available
13 high-assay, low-enriched uranium, through contracts
14 for sale, resale, transfer, or lease, for use in com-
15 mercial or noncommercial advanced nuclear reactors.

16 “(2) NUCLEAR FUEL OWNERSHIP.—Each lease
17 under this subsection shall include a provision estab-
18 lishing that the high-assay, low-enriched uranium
19 that is the subject of the lease shall remain the
20 property of the Department, including with respect
21 to responsibility for the storage, use, or final disposi-
22 tion of all radioactive waste created by the irradiation,
23 processing, or purification of any leased high-
24 assay, low-enriched uranium.

1 “(3) QUANTITY.—In carrying out the program
2 under this subsection, the Secretary shall make
3 available—

4 “(A) by December 31, 2022, high-assay,
5 low-enriched uranium containing not less than
6 2 metric tons of the uranium-235 isotope; and

7 “(B) by December 31, 2025, high-assay,
8 low-enriched uranium containing not less than
9 10 metric tons of the uranium-235 isotope (as
10 determined including the quantities of the ura-
11 nium-235 isotope made available before Decem-
12 ber 31, 2022).

13 “(4) FACTORS FOR CONSIDERATION.—In car-
14 rying out the program under this subsection, the
15 Secretary shall take into consideration—

16 “(A) options for providing the high-assay,
17 low-enriched uranium under this subsection
18 from a stockpile of uranium owned by the De-
19 partment (including the National Nuclear Secu-
20 rity Administration), including—

21 “(i) fuel that—

22 “(I) directly meets the needs of
23 an end-user; but

24 “(II) has been previously used or
25 fabricated for another purpose;

1 “(ii) fuel that can meet the needs of
2 an end-user after removing radioactive or
3 other contaminants that resulted from a
4 previous use or fabrication of the fuel for
5 research, development, demonstration, or
6 deployment activities of the Department
7 (including activities of the National Nu-
8 clear Security Administration); and

9 “(iii) fuel from a high-enriched ura-
10 nium stockpile, which can be blended with
11 lower-assay uranium to become high-assay,
12 low-enriched uranium to meet the needs of
13 an end-user; and

14 “(B) requirements to support molyb-
15 denum-99 production under the American Med-
16 ical Isotopes Production Act of 2012 (Public
17 Law 112–239; 126 Stat. 2211).

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

23 “(6) SUNSET.—The program under this sub-
24 section shall terminate on the earlier of—

25 “(A) January 1, 2035; and

1 “(B) the date on which uranium enriched
2 up to, but not equal to, 20 weight percent can
3 be obtained in the commercial market from do-
4 mestic suppliers.

5 “(c) REPORT.—

6 “(1) IN GENERAL.—Not later than 180 days
7 after the date of enactment of this section, the Sec-
8 retary shall submit to the appropriate committees of
9 Congress a report that describes actions proposed to
10 be carried out by the Secretary—

11 “(A) under the program under subsection
12 (b); or

13 “(B) otherwise to enable the commercial
14 use of high-assay, low-enriched uranium.

15 “(2) COORDINATION AND STAKEHOLDER
16 INPUT.—In developing the report under this sub-
17 section, the Secretary shall seek input from—

18 “(A) the Nuclear Regulatory Commission;

19 “(B) the National Laboratories;

20 “(C) institutions of higher education;

21 “(D) producers of medical isotopes;

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

24 “(F) a diverse group of technology devel-
25 opers.

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

5 “(4) REQUIRED EVALUATIONS.—The report
6 under this subsection shall evaluate—

7 “(A) the costs and actions required to es-
8 tablish and carry out the program under sub-
9 section (b), including with respect to—

10 “(i) proposed preliminary terms for
11 the sale, resale, transfer, and leasing of
12 high-assay, low-enriched uranium (includ-
13 ing guidelines defining the roles and re-
14 sponsibilities between the Department and
15 the purchaser, transfer recipient, or les-
16 see); and

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

20 “(I) fuel fabrication; and

21 “(II) fuel transport;

22 “(B) the potential sources and fuel forms
23 available to provide uranium for the program
24 under subsection (b);

1 “(C) options to coordinate the program
2 under subsection (b) with the operation of the
3 versatile, reactor-based fast neutron source
4 under section 959A;

5 “(D) the ability of the domestic uranium
6 market to provide materials for advanced nu-
7 clear reactor fuel; and

8 “(E) any associated legal, regulatory, and
9 policy issues that should be addressed to en-
10 able—

11 “(i) the program under subsection (b);
12 and

13 “(ii) the establishment of a domestic
14 industry capable of providing high-assay,
15 low-enriched uranium for commercial and
16 noncommercial purposes, including with re-
17 spect to the needs of—

18 “(I) the Department;

19 “(II) the Department of Defense;

20 and

21 “(III) the National Nuclear Se-
22 curity Administration.

23 “(d) HALEU TRANSPORTATION PACKAGE RE-
24 SEARCH PROGRAM.—

1 “(1) IN GENERAL.—As soon as practicable
2 after the date of enactment of this section, the Sec-
3 retary shall establish a research, development, and
4 demonstration program under which the Secretary
5 shall provide financial assistance, on a competitive
6 basis, to establish the capability to transport high-
7 assay, low-enriched uranium.

8 “(2) REQUIREMENT.—The focus of the pro-
9 gram under this subsection shall be to establish 1 or
10 more HALEU transportation packages that can be
11 certified by the Nuclear Regulatory Commission to
12 transport high-assay, low-enriched uranium to the
13 various facilities involved in producing or using nu-
14 clear fuel containing high-assay, low-enriched ura-
15 nium, such as—

16 “(A) enrichment facilities;

17 “(B) fuel processing facilities;

18 “(C) fuel fabrication facilities; and

19 “(D) nuclear reactors.”.

20 (b) CLERICAL AMENDMENT.—The table of contents
21 of the Energy Policy Act of 2005 (Public Law 109–58;
22 119 Stat. 594; 132 Stat. 3160) (as amended by section
23 1508(b)) is amended by inserting after the item relating
24 to section 959B the following:

“Sec. 960. Advanced nuclear fuel security program.”.

1 **SEC. 1510. INTERNATIONAL NUCLEAR ENERGY COOPERA-**
2 **TION.**

3 (a) IN GENERAL.—Subtitle H of Title IX of the En-
4 ergy Policy Act of 2005 (42 U.S.C. 16341 et seq.) is
5 amended by adding at the end the following:

6 **“SEC. 986B. INTERNATIONAL NUCLEAR ENERGY COOPERA-**
7 **TION.**

8 “(a) IN GENERAL.—The Secretary shall carry out a
9 program to develop bilateral collaboration initiatives with
10 a variety of countries through—

11 “(1) research and development agreements;

12 “(2) other relevant arrangements and action
13 plan updates; and

14 “(3) maintaining existing multilateral coopera-
15 tion commitments of—

16 “(A) the International Framework for Nu-
17 clear Energy Cooperation;

18 “(B) the Generation IV International
19 Forum;

20 “(C) the International Atomic Energy
21 Agency; and

22 “(D) any other international collaborative
23 effort with respect to advanced nuclear reactor
24 operations and safety.

25 “(b) SUBPROGRAM.—

1 “(1) IN GENERAL.—In carrying out the pro-
2 gram under subsection (a), the Secretary shall es-
3 tablish a subprogram that shall—

4 “(A) support diplomatic, nonproliferation,
5 climate, and international economic objectives
6 for the safe, secure, and peaceful use of nuclear
7 technology in countries developing nuclear en-
8 ergy programs, with a focus on countries that
9 have increased civil nuclear cooperation with
10 Russia and China; and

11 “(B) be modeled after the International
12 Military Education and Training program of
13 the Department of State.

14 “(2) AUTHORIZATION OF APPROPRIATIONS.—
15 There is authorized to be appropriated to the Sec-
16 retary to carry out the subprogram under this sub-
17 section \$5,500,000 for each of fiscal years 2021
18 through 2025.

19 “(c) REQUIREMENTS.—The program under sub-
20 section (a) shall be carried out—

21 “(1) to facilitate, to the maximum extent prac-
22 ticable, workshops and expert-based exchanges to en-
23 gage industry, stakeholders, and foreign govern-
24 ments regarding international civil nuclear issues,
25 such as training, financing, safety, and options for

1 multinational cooperation on used nuclear fuel dis-
2 posal; and

3 “(2) in coordination with—

4 “(A) the National Security Council;

5 “(B) the Secretary of State;

6 “(C) the Secretary of Commerce; and

7 “(D) the Nuclear Regulatory Commis-
8 sion.”.

9 (b) CONFORMING AMENDMENT.—The table of con-
10 tents of the Energy Policy Act of 2005 (Public Law 109–
11 58; 119 Stat. 600) is amended by inserting after the item
12 relating to section 986A the following:

“Sec. 986B. International nuclear energy cooperation.”.

13 **SEC. 1511. INTEGRATED ENERGY SYSTEMS PROGRAM.**

14 (a) PROGRAM.—

15 (1) ESTABLISHMENT.—

16 (A) IN GENERAL.—The Secretary shall es-
17 tablish a program, to be known as the “Inte-
18 grated Energy Systems Program” (referred to
19 in this subsection as the “program”)—

20 (i) to maximize energy production and
21 efficiency;

22 (ii) to develop energy systems involv-
23 ing the integration of nuclear energy with
24 renewable energy, fossil energy, and energy
25 storage; and

1 (iii) to expand the use of emissions-re-
2 ducing energy technologies into nonelectric
3 sectors to achieve significant reductions in
4 environmental emissions.

5 (B) PROGRAM ADMINISTRATION; PART-
6 NERS.—The program shall be carried out by
7 the Under Secretary of Energy, in partnership
8 with—

9 (i) relevant offices within the Depart-
10 ment;

11 (ii) National Laboratories;

12 (iii) institutions of higher education;

13 and

14 (iv) the private sector.

15 (C) GOALS AND MILESTONES.—The Sec-
16 retary shall establish quantitative goals and
17 milestones for the program.

18 (2) RESEARCH AREAS.—Research areas under
19 the program may include—

20 (A) technology innovation to further the
21 expansion of emissions-reducing energy tech-
22 nologies to accommodate a modern, resilient
23 grid system by—

24 (i) effectively leveraging multiple en-
25 ergy sources;

1 (ii) enhancing and streamlining engi-
2 neering design;

3 (iii) carrying out process demonstra-
4 tions to optimize performance; and

5 (iv) streamlining regulatory review;

6 (B) advanced power cycles, energy extrac-
7 tion, and processing of complex hydrocarbons to
8 produce high-value chemicals;

9 (C) efficient use of emissions-reducing en-
10 ergy technologies for hydrogen production to
11 support transportation and industrial needs;

12 (D) enhancement and acceleration of do-
13 mestic manufacturing and desalinization tech-
14 nologies and processes by optimally using clean
15 energy sources;

16 (E) more effective thermal energy use,
17 transport, and storage;

18 (F) the demonstration of nuclear energy
19 delivery for—

20 (i) the production of chemicals, met-
21 als, and fuels;

22 (ii) the capture, use, and storage of
23 carbon;

24 (iii) renewable integration with an in-
25 tegrated energy system; and

1 (iv) conversion of carbon feedstock,
2 such as coal, biomass, natural gas, and
3 refuse waste, to higher value nonelectric
4 commodities;

5 (G) the development of new analysis capa-
6 bilities to identify the best ways—

7 (i) to leverage multiple energy sources
8 in a given region; and

9 (ii) to quantify the benefits of inte-
10 grated energy systems; and

11 (H) any other area that, as determined by
12 the Secretary, meets the purpose and goals of
13 the program.

14 (3) GRANTS.—The Secretary may award grants
15 under the program to support the goals of the pro-
16 gram.

17 (b) REPORT ON DUPLICATIVE PROGRAMS.—Not later
18 than 1 year after the date of enactment of this Act, and
19 annually thereafter, the Secretary shall submit to Con-
20 gress a report identifying any program that is duplicative
21 of the program established under subsection (a)(1)(A).

1 **Subtitle F—Industrial Technologies**

2 **PART I—INNOVATION**

3 **SEC. 1601. PURPOSE.**

4 The purpose of this part and the amendments made
5 by this part is to encourage the development and evalua-
6 tion of innovative technologies aimed at increasing—

7 (1) the technological and economic competitive-
8 ness of industry and manufacturing in the United
9 States; and

10 (2) the emissions reduction of nonpower indus-
11 trial sectors.

12 **SEC. 1602. COORDINATION OF RESEARCH AND DEVELOP-** 13 **MENT OF ENERGY EFFICIENT TECH-** 14 **NOLOGIES FOR INDUSTRY.**

15 Section 6(a) of the American Energy Manufacturing
16 Technical Corrections Act (42 U.S.C. 6351(a)) is amend-
17 ed—

18 (1) by striking “Industrial Technologies Pro-
19 gram” each place it appears and inserting “Ad-
20 vanced Manufacturing Office”; and

21 (2) in the matter preceding paragraph (1), by
22 striking “Office of Energy” and all that follows
23 through “Office of Science” and inserting “Depart-
24 ment of Energy”.

1 **SEC. 1603. INDUSTRIAL EMISSIONS REDUCTION TECH-**
2 **NOLOGY DEVELOPMENT PROGRAM.**

3 (a) IN GENERAL.—The Energy Independence and
4 Security Act of 2007 is amended by inserting after section
5 454 (as added by section 1022(b)) the following:

6 **“SEC. 455. INDUSTRIAL EMISSIONS REDUCTION TECH-**
7 **NOLOGY DEVELOPMENT PROGRAM.**

8 “(a) DEFINITIONS.—In this section:

9 “(1) DIRECTOR.—The term ‘Director’ means
10 the Director of the Office of Science and Technology
11 Policy.

12 “(2) ELIGIBLE ENTITY.—The term ‘eligible en-
13 tity’ means—

14 “(A) a scientist or other individual with
15 knowledge and expertise in emissions reduction;

16 “(B) an institution of higher education;

17 “(C) a nongovernmental organization;

18 “(D) a National Laboratory;

19 “(E) a private entity; and

20 “(F) a partnership or consortium of 2 or
21 more entities described in subparagraphs (B)
22 through (E).

23 “(3) EMISSIONS REDUCTION.—

24 “(A) IN GENERAL.—The term ‘emissions
25 reduction’ means the reduction, to the max-
26 imum extent practicable, of net nonwater green-

1 house gas emissions to the atmosphere by en-
2 ergy services and industrial processes.

3 “(B) EXCLUSION.—The term ‘emissions
4 reduction’ does not include the elimination of
5 carbon embodied in the principal products of in-
6 dustrial manufacturing.

7 “(4) INSTITUTION OF HIGHER EDUCATION.—
8 The term ‘institution of higher education’ has the
9 meaning given the term in section 101 of the Higher
10 Education Act of 1965 (20 U.S.C. 1001).

11 “(5) PROGRAM.—The term ‘program’ means
12 the program established under subsection (b)(1).

13 “(b) INDUSTRIAL EMISSIONS REDUCTION TECH-
14 NOLOGY DEVELOPMENT PROGRAM.—

15 “(1) IN GENERAL.—Not later than 1 year after
16 the date of enactment of the American Energy Inno-
17 vation Act of 2020, the Secretary, in consultation
18 with the Director, the heads of relevant Federal
19 agencies, National Laboratories, industry, and insti-
20 tutions of higher education, shall establish a cross-
21 cutting industrial emissions reduction technology de-
22 velopment program of research, development, dem-
23 onstration, and commercial application to further
24 the development and commercialization of innovative
25 technologies that—

1 “(A) increase the technological and eco-
2 nomic competitiveness of industry and manufac-
3 turing in the United States;

4 “(B) increase the viability and competitive-
5 ness of United States industrial technology ex-
6 ports; and

7 “(C) achieve emissions reduction in
8 nonpower industrial sectors.

9 “(2) COORDINATION.—In carrying out the pro-
10 gram, the Secretary shall—

11 “(A) coordinate with each relevant office in
12 the Department and any other Federal agency;

13 “(B) coordinate and collaborate with the
14 Industrial Technology Innovation Advisory
15 Committee established under section 456; and

16 “(C) coordinate and seek to avoid duplica-
17 tion with the energy-intensive industries pro-
18 gram established under section 452.

19 “(3) LEVERAGE OF EXISTING RESOURCES.—In
20 carrying out the program, the Secretary shall lever-
21 age, to the maximum extent practicable—

22 “(A) existing resources and programs of
23 the Department and other relevant Federal
24 agencies; and

25 “(B) public-private partnerships.

1 “(c) FOCUS AREAS.—The program shall focus on—

2 “(1) industrial production processes, including
3 technologies and processes that—

4 “(A) achieve emissions reduction in high-
5 emissions industrial materials production pro-
6 cesses, including production processes for iron,
7 steel, steel mill products, aluminum, cement,
8 glass, pulp, paper, and industrial ceramics;

9 “(B) achieve emissions reduction in
10 medium- and high-temperature heat generation,
11 including—

12 “(i) through electrification of heating
13 processes;

14 “(ii) through renewable heat genera-
15 tion technology;

16 “(iii) through combined heat and
17 power; and

18 “(iv) by switching to alternative fuels,
19 including hydrogen and nuclear energy;

20 “(C) achieve emissions reduction in chem-
21 ical production processes, including by incor-
22 porating, if appropriate and practicable, prin-
23 ciples, practices, and methodologies of sustain-
24 able, green chemistry and engineering;

1 “(D) leverage smart manufacturing tech-
2 nologies and principles, digital manufacturing
3 technologies, and advanced data analytics to de-
4 velop advanced technologies and practices in in-
5 formation, automation, monitoring, computa-
6 tion, sensing, modeling, and networking to—

7 “(i) model and simulate manufac-
8 turing production lines;

9 “(ii) monitor and communicate pro-
10 duction line status;

11 “(iii) manage and optimize energy
12 productivity and cost throughout produc-
13 tion; and

14 “(iv) model, simulate, and optimize
15 the energy efficiency of manufacturing
16 processes;

17 “(E) minimize the negative environmental
18 impacts of manufacturing and sustainable
19 chemistry while conserving energy and re-
20 sources, including—

21 “(i) by designing products that enable
22 reuse, refurbishment, remanufacturing,
23 and recycling;

24 “(ii) by minimizing waste from indus-
25 trial processes, including through the reuse

1 of waste as other resources in other indus-
2 trial processes for mutual benefit; and
3 “(iii) by increasing resource efficiency;
4 and
5 “(F) increase the energy efficiency of in-
6 dustrial processes;
7 “(2) alternative materials that produce fewer
8 emissions during production and result in fewer
9 emissions during use;
10 “(3) development of net-zero emissions liquid
11 and gaseous fuels;
12 “(4) emissions reduction in shipping, aviation,
13 and long distance transportation;
14 “(5) carbon capture technologies for industrial
15 processes;
16 “(6) other technologies that achieve net-zero
17 emissions in nonpower industrial sectors, as deter-
18 mined by the Secretary, in consultation with the Di-
19 rector; and
20 “(7) high-performance computing to develop ad-
21 vanced materials and manufacturing processes con-
22 tributing to the focus areas described in paragraphs
23 (1) through (6), including—

1 “(A) modeling, simulation, and optimiza-
2 tion of the design of energy efficient and sus-
3 tainable products; and

4 “(B) the use of digital prototyping and ad-
5 ditive manufacturing to enhance product de-
6 sign.

7 “(d) GRANTS, CONTRACTS, COOPERATIVE AGREE-
8 MENTS, AND DEMONSTRATION PROJECTS.—

9 “(1) GRANTS.—In carrying out the program,
10 the Secretary shall award grants on a competitive
11 basis to eligible entities for projects that the Sec-
12 retary determines would best achieve the goals of the
13 program.

14 “(2) CONTRACTS AND COOPERATIVE AGREE-
15 MENTS.—In carrying out the program, the Secretary
16 may enter into contracts and cooperative agreements
17 with eligible entities and Federal agencies for
18 projects that the Secretary determines would further
19 the purposes of the program.

20 “(3) DEMONSTRATION PROJECTS.—In sup-
21 porting technologies developed under this section,
22 the Secretary shall fund demonstration projects that
23 test and validate technologies described in subsection
24 (c).

1 “(4) APPLICATION.—An entity seeking funding
 2 or a contract or agreement under this subsection
 3 shall submit to the Secretary an application at such
 4 time, in such manner, and containing such informa-
 5 tion as the Secretary may require.

6 “(5) COST SHARING.—In awarding funds under
 7 this section, the Secretary shall require cost sharing
 8 in accordance with section 988 of the Energy Policy
 9 Act of 2005 (42 U.S.C. 16352).”.

10 (b) TECHNICAL AMENDMENT.—The table of contents
 11 of the Energy Independence and Security Act of 2007
 12 (Public Law 110–140; 121 Stat. 1494) (as amended by
 13 section 1022(e)) is amended by inserting after the item
 14 relating to section 454 the following:

 “Sec. 455. Industrial emissions reduction technology development program.”.

15 **SEC. 1604. INDUSTRIAL TECHNOLOGY INNOVATION ADVI-**
 16 **SORY COMMITTEE.**

17 (a) IN GENERAL.—The Energy Independence and
 18 Security Act of 2007 is amended by inserting after section
 19 455 (as added by section 1603(a)) the following:

20 **“SEC. 456. INDUSTRIAL TECHNOLOGY INNOVATION ADVI-**
 21 **SORY COMMITTEE.**

22 “(a) DEFINITIONS.—In this section:

23 “(1) COMMITTEE.—The term ‘Committee’
 24 means the Industrial Technology Innovation Advi-
 25 sory Committee established under subsection (b).

1 “(2) DIRECTOR.—The term ‘Director’ means
2 the Director of the Office of Science and Technology
3 Policy.

4 “(3) EMISSIONS REDUCTION.—The term ‘emis-
5 sions reduction’ has the meaning given the term in
6 section 455(a).

7 “(4) PROGRAM.—The term ‘program’ means
8 the industrial emissions reduction technology devel-
9 opment program established under section
10 455(b)(1).

11 “(b) ESTABLISHMENT.—Not later than 180 days
12 after the date of enactment of the American Energy Inno-
13 vation Act of 2020, the Secretary, in consultation with the
14 Director, shall establish an advisory committee, to be
15 known as the ‘Industrial Technology Innovation Advisory
16 Committee’.

17 “(c) MEMBERSHIP.—

18 “(1) APPOINTMENT.—The Committee shall be
19 comprised of not fewer than 14 members and not
20 more than 18 members, who shall be appointed by
21 the Secretary, in consultation with the Director.

22 “(2) REPRESENTATION.—Members appointed
23 pursuant to paragraph (1) shall include—

1 “(A) not less than 1 representative of each
2 relevant Federal agency, as determined by the
3 Secretary;

4 “(B) the Chair of the Secretary of Energy
5 Advisory Board, if that position is filled;

6 “(C) not less than 2 representatives of
7 labor groups;

8 “(D) not less than 3 representatives of the
9 research community, which shall include aca-
10 demia and National Laboratories;

11 “(E) not less than 2 representatives of
12 nongovernmental organizations;

13 “(F) not less than 6 representatives of
14 small- and large-scale industry, the collective
15 expertise of which shall cover every focus area
16 described in section 455(c); and

17 “(G) any other individuals the Secretary,
18 in coordination with the Director, determines to
19 be necessary to ensure that the Committee is
20 comprised of a diverse group of representatives
21 of industry, academia, independent researchers,
22 and public and private entities.

23 “(3) CHAIR.—The Secretary shall designate a
24 member of the Committee to serve as Chair.

25 “(d) DUTIES.—

1 “(1) IN GENERAL.—The Committee shall—

2 “(A) in consultation with the Secretary
3 and the Director, propose missions and goals
4 for the program, which shall be consistent with
5 the purposes of the program described in sec-
6 tion 455(b)(1); and

7 “(B) advise the Secretary with respect to
8 the program—

9 “(i) by identifying and evaluating any
10 technologies being developed by the private
11 sector relating to the focus areas described
12 in section 455(c);

13 “(ii) by identifying technology gaps in
14 the private sector in those focus areas, and
15 making recommendations to address those
16 gaps;

17 “(iii) by surveying and analyzing fac-
18 tors that prevent the adoption of emissions
19 reduction technologies by the private sec-
20 tor; and

21 “(iv) by recommending technology
22 screening criteria for technology developed
23 under the program to encourage adoption
24 of the technology by the private sector; and

1 “(C) develop the strategic plan described
2 in paragraph (2).

3 “(2) STRATEGIC PLAN.—

4 “(A) PURPOSE.—The purpose of the stra-
5 tegic plan developed under paragraph (1)(C) is
6 to achieve the goals of the program in the focus
7 areas described in section 455(c).

8 “(B) CONTENTS.—The strategic plan de-
9 veloped under paragraph (1)(C) shall—

10 “(i) specify near-term and long-term
11 qualitative and quantitative objectives re-
12 lating to each focus area described in sec-
13 tion 455(c), including research, develop-
14 ment, demonstration, and commercial ap-
15 plication objectives;

16 “(ii) specify the anticipated timeframe
17 for achieving the objectives specified under
18 clause (i);

19 “(iii) include plans for developing
20 emissions reduction technologies that are
21 globally cost-competitive;

22 “(iv) identify the public and private
23 costs of achieving the objectives specified
24 under clause (i); and

1 “(v) estimate the economic and em-
2 ployment impact in the United States of
3 achieving those objectives.

4 “(e) MEETINGS.—

5 “(1) FREQUENCY.—The Committee shall meet
6 not less frequently than 2 times per year, at the call
7 of the Chair.

8 “(2) INITIAL MEETING.—Not later than 30
9 days after the date on which the members are ap-
10 pointed under subsection (b), the Committee shall
11 hold its first meeting.

12 “(f) COMMITTEE REPORT.—

13 “(1) IN GENERAL.—Not later than 2 years
14 after the date of enactment of the American Energy
15 Innovation Act of 2020, and not less frequently than
16 once every 3 years thereafter, the Committee shall
17 submit to the Secretary a report on the progress of
18 achieving the purposes of the program.

19 “(2) CONTENTS.—The report under paragraph
20 (1) shall include—

21 “(A) a description of any technology inno-
22 vation opportunities identified by the Com-
23 mittee;

1 “(B) a description of any technology gaps
2 identified by the Committee under subsection
3 (d)(1)(B)(ii);

4 “(C) recommendations for improving tech-
5 nology screening criteria and management of
6 the program;

7 “(D) an evaluation of the progress of the
8 program and the research and development
9 funded under the program;

10 “(E) any recommended changes to the
11 focus areas of the program described in section
12 455(c);

13 “(F) a description of the manner in which
14 the Committee has carried out the duties de-
15 scribed in subsection (d)(1) and any relevant
16 findings as a result of carrying out those duties;

17 “(G) if necessary, an update to the stra-
18 tegic plan developed by the Committee under
19 subsection (d)(1)(C);

20 “(H) the progress made in achieving the
21 goals set out in that strategic plan;

22 “(I) a review of the management, coordina-
23 tion, and industry utility of the program;

24 “(J) an assessment of the extent to which
25 progress has been made under the program in

1 developing commercial, cost-competitive tech-
2 nologies in each focus area described in section
3 455(c); and

4 “(K) an assessment of the effectiveness of
5 the program in coordinating efforts within the
6 Department and with other Federal agencies to
7 achieve the purposes of the program.

8 “(g) REPORT TO CONGRESS.—Not later than 60 days
9 after receiving a report from the Committee under sub-
10 section (f), the Secretary shall submit a copy of that re-
11 port to the Committees on Appropriations and Science,
12 Space, and Technology of the House of Representatives,
13 the Committees on Appropriations and Energy and Nat-
14 ural Resources of the Senate, and any other relevant Com-
15 mittee of Congress.

16 “(h) APPLICABILITY OF FEDERAL ADVISORY COM-
17 MITTEE ACT.—Except as otherwise provided in this sec-
18 tion, the Federal Advisory Committee Act (5 U.S.C. App.)
19 shall apply to the Committee.”.

20 (b) TECHNICAL AMENDMENT.—The table of contents
21 of the Energy Independence and Security Act of 2007
22 (Public Law 110–140; 121 Stat. 1494) (as amended by
23 section 1603(b)) is amended by inserting after the item
24 relating to section 455 the following:

“Sec. 456. Industrial Technology Innovation Advisory Committee.”.

1 **SEC. 1605. TECHNICAL ASSISTANCE PROGRAM TO IMPLE-**
2 **MENT INDUSTRIAL EMISSIONS REDUCTION.**

3 (a) IN GENERAL.—The Energy Independence and
4 Security Act of 2007 is amended by inserting after section
5 456 (as added by section 1604(a)) the following:

6 **“SEC. 457. TECHNICAL ASSISTANCE PROGRAM TO IMPLE-**
7 **MENT INDUSTRIAL EMISSIONS REDUCTION.**

8 “(a) DEFINITIONS.—In this section:

9 “(1) ELIGIBLE ENTITY.—The term ‘eligible en-
10 tity’ means—

11 “(A) a State;

12 “(B) a unit of local government;

13 “(C) a territory or possession of the
14 United States;

15 “(D) a relevant State or local office, in-
16 cluding an energy office;

17 “(E) a tribal organization (as defined in
18 section 3765 of title 38, United States Code);

19 “(F) an institution of higher education;

20 and

21 “(G) a private entity.

22 “(2) EMISSIONS REDUCTION.—The term ‘emis-
23 sions reduction’ has the meaning given the term in
24 section 455(a).

25 “(3) INSTITUTION OF HIGHER EDUCATION.—

26 The term ‘institution of higher education’ has the

1 meaning given the term in section 101 of the Higher
2 Education Act of 1965 (20 U.S.C. 1001).

3 “(4) PROGRAM.—The term ‘program’ means
4 the program established under subsection (b).

5 “(b) ESTABLISHMENT.—Not later than 180 days
6 after the date of enactment of the American Energy Inno-
7 vation Act of 2020, the Secretary shall establish a pro-
8 gram to provide technical assistance to eligible entities to
9 carry out an activity described in subsection (c).

10 “(c) ACTIVITIES DESCRIBED.—An activity referred
11 to in subsection (b) is any of the following activities car-
12 ried out for the purpose of achieving emissions reduction
13 in nonpower industrial sectors:

14 “(1) Adopting emissions reduction technologies.

15 “(2) Establishing goals and priorities to accel-
16 erate the development and evaluation of relevant
17 technologies.

18 “(3) Developing collaborations across States,
19 local governments, and territories and possessions of
20 the United States.

21 “(4) Reviewing the appropriate emissions re-
22 duction technologies available for a particular eligi-
23 ble entity.

1 “(5) Developing a roadmap for implementing
2 emissions reduction technologies for a particular eli-
3 gible entity.

4 “(6) Any other activity determined appropriate
5 by the Secretary.

6 “(d) APPLICATIONS.—

7 “(1) IN GENERAL.—An eligible entity desiring
8 technical assistance under the program shall submit
9 to the Secretary an application at such time, in such
10 manner, and containing such information as the Sec-
11 retary may require.

12 “(2) APPLICATION PROCESS.—The Secretary
13 shall seek applications for technical assistance under
14 the program on a periodic basis, but not less fre-
15 quently than once every 12 months.

16 “(3) FACTORS FOR CONSIDERATION.—In select-
17 ing eligible entities for technical assistance under the
18 program, the Secretary shall—

19 “(A) give priority to—

20 “(i) activities carried out with tech-
21 nical assistance under the program that
22 have the greatest potential for achieving
23 emissions reduction in nonpower industrial
24 sectors;

1 “(ii) activities carried out in a State
2 in which there are active or inactive indus-
3 trial facilities that may be used or retro-
4 fitted to carry out activities under the
5 focus areas described in section 455(c);
6 and

7 “(iii) activities carried out in an eco-
8 nomically distressed area (as described in
9 section 301(a) of the Public Works and
10 Economic Development Act of 1965 (42
11 U.S.C. 3161(a)); and

12 “(B) ensure that—

13 “(i) there is geographic diversity
14 among the eligible entities selected; and

15 “(ii) the activities carried out with
16 technical assistance under the program re-
17 flect a majority of the focus areas de-
18 scribed in section 455(c).”.

19 (b) TECHNICAL AMENDMENT.—The table of contents
20 of the Energy Independence and Security Act of 2007
21 (Public Law 110–140; 121 Stat. 1494) (as amended by
22 section 1604(b)) is amended by inserting after the item
23 relating to section 456 the following:

“Sec. 457. Technical assistance program to implement industrial emissions re-
duction.”.

1 **PART II—SMART MANUFACTURING**

2 **SEC. 1611. DEFINITIONS.**

3 In this part:

4 (1) **ENERGY MANAGEMENT SYSTEM.**—The term
5 “energy management system” means a business
6 management process based on standards of the
7 American National Standards Institute that enables
8 an organization to follow a systematic approach in
9 achieving continual improvement of energy perform-
10 ance, including energy efficiency, security, use, and
11 consumption.

12 (2) **INDUSTRIAL ASSESSMENT CENTER.**—The
13 term “industrial assessment center” means a center
14 located at an institution of higher education that—

15 (A) receives funding from the Department;

16 (B) provides an in-depth assessment of
17 small- and medium-size manufacturer plant
18 sites to evaluate the facilities, services, and
19 manufacturing operations of the plant site; and

20 (C) identifies opportunities for potential
21 savings for small- and medium-size manufac-
22 turer plant sites from energy efficiency improve-
23 ments, waste minimization, pollution preven-
24 tion, and productivity improvement.

25 (3) **INFORMATION AND COMMUNICATION TECH-**
26 **NOLOGY.**—The term “information and communica-

1 tion technology” means any electronic system or
2 equipment (including the content contained in the
3 system or equipment) used to create, convert, com-
4 municate, or duplicate data or information, including
5 computer hardware, firmware, software, communica-
6 tion protocols, networks, and data interfaces.

7 (4) INSTITUTION OF HIGHER EDUCATION.—The
8 term “institution of higher education” has the
9 meaning given the term in section 101(a) of the
10 Higher Education Act of 1965 (20 U.S.C. 1001(a)).

11 (5) NORTH AMERICAN INDUSTRY CLASSIFICA-
12 TION SYSTEM.—The term “North American Indus-
13 try Classification System” means the standard used
14 by Federal statistical agencies in classifying business
15 establishments for the purpose of collecting, ana-
16 lyzing, and publishing statistical data relating to the
17 business economy of the United States.

18 (6) SMALL AND MEDIUM MANUFACTURERS.—
19 The term “small and medium manufacturers”
20 means manufacturing firms—

21 (A) classified in the North American In-
22 dustry Classification System as any of sectors
23 31 through 33;

24 (B) with gross annual sales of less than
25 \$100,000,000;

1 (C) with fewer than 500 employees at the
2 plant site; and

3 (D) with annual energy bills totaling more
4 than \$100,000 and less than \$2,500,000.

5 (7) SMART MANUFACTURING.—The term
6 “smart manufacturing” means advanced tech-
7 nologies in information, automation, monitoring,
8 computation, sensing, modeling, artificial intel-
9 ligence, analytics, and networking that—

10 (A) digitally—

11 (i) simulate manufacturing production
12 lines;

13 (ii) operate computer-controlled man-
14 ufacturing equipment;

15 (iii) monitor and communicate pro-
16 duction line status; and

17 (iv) manage and optimize energy pro-
18 ductivity and cost throughout production;

19 (B) model, simulate, and optimize the en-
20 ergy efficiency of a factory building;

21 (C) monitor and optimize building energy
22 performance;

23 (D) model, simulate, and optimize the de-
24 sign of energy efficient and sustainable prod-
25 ucts, including the use of digital prototyping

1 and additive manufacturing to enhance product
2 design;

3 (E) connect manufactured products in net-
4 works to monitor and optimize the performance
5 of the networks, including automated network
6 operations; and

7 (F) digitally connect the supply chain net-
8 work.

9 **SEC. 1612. DEVELOPMENT OF NATIONAL SMART MANUFAC-**
10 **TURING PLAN.**

11 (a) IN GENERAL.—Not later than 3 years after the
12 date of enactment of this Act, the Secretary, in consulta-
13 tion with the National Academies, shall develop and com-
14 plete a national plan for smart manufacturing technology
15 development and deployment to improve the productivity
16 and energy efficiency of the manufacturing sector of the
17 United States.

18 (b) CONTENT.—

19 (1) IN GENERAL.—The plan developed under
20 subsection (a) shall identify areas in which agency
21 actions by the Secretary and other heads of relevant
22 Federal agencies would—

23 (A) facilitate quicker development, deploy-
24 ment, and adoption of smart manufacturing
25 technologies and processes;

1 (B) result in greater energy efficiency and
2 lower environmental impacts for all American
3 manufacturers; and

4 (C) enhance competitiveness and strength-
5 en the manufacturing sectors of the United
6 States.

7 (2) INCLUSIONS.—Agency actions identified
8 under paragraph (1) shall include—

9 (A) an assessment of previous and current
10 actions of the Department relating to smart
11 manufacturing;

12 (B) the establishment of voluntary inter-
13 connection protocols and performance stand-
14 ards;

15 (C) the use of smart manufacturing to im-
16 prove energy efficiency and reduce emissions in
17 supply chains across multiple companies;

18 (D) actions to increase cybersecurity in
19 smart manufacturing infrastructure;

20 (E) deployment of existing research re-
21 sults;

22 (F) the leveraging of existing high-per-
23 formance computing infrastructure; and

1 (G) consideration of the impact of smart
2 manufacturing on existing manufacturing jobs
3 and future manufacturing jobs.

4 (c) BIENNIAL REVISIONS.—Not later than 2 years
5 after the date on which the Secretary completes the plan
6 under subsection (a), and not less frequently than once
7 every 2 years thereafter, the Secretary shall revise the
8 plan to account for advancements in information and com-
9 munication technology and manufacturing needs.

10 (d) REPORT.—Annually until the completion of the
11 plan under subsection (a), the Secretary shall submit to
12 Congress a report on the progress made in developing the
13 plan.

14 (e) FUNDING.—The Secretary shall use unobligated
15 funds of the Department to carry out this section.

16 **SEC. 1613. LEVERAGING EXISTING AGENCY PROGRAMS TO**
17 **ASSIST SMALL AND MEDIUM MANUFACTUR-**
18 **ERS.**

19 (a) EXPANSION OF TECHNICAL ASSISTANCE PRO-
20 GRAMS.—The Secretary shall expand the scope of tech-
21 nologies covered by the Industrial Assessment Centers of
22 the Department—

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

1 (2) to equip the directors of the Industrial As-
2 sessment Centers with the training and tools nec-
3 essary to provide technical assistance in smart man-
4 ufacturing technologies and practices, including en-
5 ergy management systems, to manufacturers.

6 (b) FUNDING.—The Secretary shall use unobligated
7 funds of the Department to carry out this section.

8 **SEC. 1614. LEVERAGING SMART MANUFACTURING INFRA-**
9 **STRUCTURE AT NATIONAL LABORATORIES.**

10 (a) STUDY.—

11 (1) IN GENERAL.—Not later than 180 days
12 after the date of enactment of this Act, the Sec-
13 retary shall conduct a study on how the Department
14 can increase access to existing high-performance
15 computing resources in the National Laboratories,
16 particularly for small and medium manufacturers.

17 (2) INCLUSIONS.—In identifying ways to in-
18 crease access to National Laboratories under para-
19 graph (1), the Secretary shall—

20 (A) focus on increasing access to the com-
21 puting facilities of the National Laboratories;
22 and

23 (B) ensure that—

24 (i) the information from the manufac-
25 turer is protected; and

1 (ii) the security of the National Lab-
2 oratory facility is maintained.

3 (3) REPORT.—Not later than 1 year after the
4 date of enactment of this Act, the Secretary shall
5 submit to Congress a report describing the results of
6 the study.

7 (b) ACTIONS FOR INCREASED ACCESS.—The Sec-
8 retary shall facilitate access to the National Laboratories
9 studied under subsection (a) for small and medium manu-
10 facturers so that small and medium manufacturers can
11 fully use the high-performance computing resources of the
12 National Laboratories to enhance the manufacturing com-
13 petitiveness of the United States.

14 **SEC. 1615. STATE MANUFACTURING LEADERSHIP.**

15 (a) FINANCIAL ASSISTANCE AUTHORIZED.—The
16 Secretary may provide financial assistance on a competi-
17 tive basis to States for the establishment of programs to
18 be used as models for supporting the implementation of
19 smart manufacturing technologies.

20 (b) APPLICATIONS.—

21 (1) IN GENERAL.—To be eligible to receive fi-
22 nancial assistance under this section, a State shall
23 submit to the Secretary an application at such time,
24 in such manner, and containing such information as
25 the Secretary may require.

1 (2) CRITERIA.—The Secretary shall evaluate an
2 application for financial assistance under this section
3 on the basis of merit using criteria identified by the
4 Secretary, including—

5 (A) technical merit, innovation, and im-
6 pact;

7 (B) research approach, workplan, and
8 deliverables;

9 (C) academic and private sector partners;
10 and

11 (D) alternate sources of funding.

12 (c) REQUIREMENTS.—

13 (1) TERM.—The term of an award of financial
14 assistance under this section shall not exceed 3
15 years.

16 (2) MAXIMUM AMOUNT.—The amount of an
17 award of financial assistance under this section shall
18 be not more than \$2,000,000.

19 (3) MATCHING REQUIREMENT.—Each State
20 that receives financial assistance under this section
21 shall contribute matching funds in an amount equal
22 to not less than 30 percent of the amount of the fi-
23 nancial assistance.

24 (d) USE OF FUNDS.—

1 (1) IN GENERAL.—A State may use financial
2 assistance provided under this section—

3 (A) to facilitate access to high-performance
4 computing resources for small and medium
5 manufacturers; and

6 (B) to provide assistance to small and me-
7 dium manufacturers to implement smart manu-
8 facturing technologies and practices.

9 (e) EVALUATION.—The Secretary shall conduct semi-
10 annual evaluations of each award of financial assistance
11 under this section—

12 (1) to determine the impact and effectiveness of
13 programs funded with the financial assistance; and

14 (2) to provide guidance to States on ways to
15 better execute the program of the State.

16 (f) AUTHORIZATION.—There is authorized to be ap-
17 propriated to the Secretary to carry out this section
18 \$10,000,000 for each of fiscal years 2021 through 2024.

19 **SEC. 1616. REPORT.**

20 The Secretary annually shall submit to Congress and
21 make publicly available a report on the progress made in
22 advancing smart manufacturing in the United States.

23 **Subtitle G—Vehicles**

24 **SEC. 1701. OBJECTIVES.**

25 The objectives of this subtitle are—

1 (1) to establish a consistent and consolidated
2 authority for the vehicle technology program at the
3 Department;

4 (2) to develop United States technologies and
5 practices that—

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

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

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

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

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

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

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

1 (8) to ensure a proper balance and diversity of
2 Federal investment in vehicle technologies; and
3 (9) to strengthen partnerships between Federal
4 and State governmental agencies and the private
5 and academic sectors.

6 **SEC. 1702. COORDINATION AND NONDUPLICATION.**

7 The Secretary shall ensure, to the maximum extent
8 practicable, that the activities authorized by this subtitle
9 do not duplicate those of other programs within the De-
10 partment or other relevant research agencies.

11 **SEC. 1703. AUTHORIZATION OF APPROPRIATIONS.**

12 There are authorized to be appropriated to the Sec-
13 retary for research, development, engineering, demonstra-
14 tion, and commercial application of vehicles and related
15 technologies in the United States, including activities au-
16 thorized under this subtitle—

- 17 (1) for fiscal year 2021, \$313,567,000;
18 (2) for fiscal year 2022, \$326,109,000;
19 (3) for fiscal year 2023, \$339,154,000;
20 (4) for fiscal year 2024, \$352,720,000; and
21 (5) for fiscal year 2025, \$366,829,000.

22 **SEC. 1704. REPORTING.**

23 (a) **TECHNOLOGIES DEVELOPED.**—Not later than 18
24 months after the date of enactment of this Act and annu-
25 ally thereafter through 2025, the Secretary shall submit

1 to Congress a report regarding the technologies developed
2 as a result of the activities authorized by this subtitle, with
3 a particular emphasis on whether the technologies were
4 successfully adopted for commercial applications, and if
5 so, whether products relying on those technologies are
6 manufactured in the United States.

7 (b) **ADDITIONAL MATTERS.**—At the end of each fis-
8 cal year through 2025, the Secretary shall submit to the
9 relevant Congressional committees of jurisdiction an an-
10 nual report describing activities undertaken in the pre-
11 vious year under this subtitle, active industry participants,
12 the status of public-private partnerships, progress of the
13 program in meeting goals and timelines, and a strategic
14 plan for funding of activities across agencies.

15 **SEC. 1705. VEHICLE RESEARCH AND DEVELOPMENT.**

16 (a) **PROGRAM.**—

17 (1) **ACTIVITIES.**—The Secretary shall conduct a
18 program of basic and applied research, development,
19 engineering, demonstration, and commercial applica-
20 tion activities on materials, technologies, and proc-
21 esses with the potential to substantially reduce or
22 eliminate petroleum use and the emissions of the
23 passenger and commercial vehicles of the United
24 States, including activities in the areas of—

25 (A) electrification of vehicle systems;

- 1 (B) batteries, ultracapacitors, and other
2 energy storage devices;
- 3 (C) power electronics;
- 4 (D) vehicle, component, and subsystem
5 manufacturing technologies and processes;
- 6 (E) engine efficiency and combustion opti-
7 mization;
- 8 (F) waste heat recovery;
- 9 (G) transmission and drivetrains;
- 10 (H) hydrogen vehicle technologies, includ-
11 ing fuel cells and internal combustion engines,
12 and hydrogen infrastructure, including hydro-
13 gen energy storage to enable renewables and
14 provide hydrogen for fuel and power;
- 15 (I) natural gas vehicle technologies;
- 16 (J) aerodynamics, rolling resistance (in-
17 cluding tires and wheel assemblies), and acces-
18 sory power loads of vehicles and associated
19 equipment;
- 20 (K) vehicle weight reduction, including
21 lightweighting materials and the development of
22 manufacturing processes to fabricate, assemble,
23 and use dissimilar materials;
- 24 (L) friction and wear reduction;
- 25 (M) engine and component durability;

- 1 (N) innovative propulsion systems;
- 2 (O) advanced boosting systems;
- 3 (P) hydraulic hybrid technologies;
- 4 (Q) engine compatibility with and optimi-
- 5 zation for a variety of transportation fuels in-
- 6 cluding natural gas and other liquid and gas-
- 7 eous fuels;
- 8 (R) predictive engineering, modeling, and
- 9 simulation of vehicle and transportation sys-
- 10 tems;
- 11 (S) refueling and charging infrastructure
- 12 for alternative fueled and electric or plug-in
- 13 electric hybrid vehicles, including the unique
- 14 challenges facing rural areas;
- 15 (T) gaseous fuels storage systems and sys-
- 16 tem integration and optimization;
- 17 (U) sensing, communications, and actu-
- 18 ation technologies for vehicle, electrical grid,
- 19 and infrastructure;
- 20 (V) efficient use, substitution, and recy-
- 21 cling of potentially critical materials in vehicles,
- 22 including rare earth elements and precious met-
- 23 als, at risk of supply disruption;
- 24 (W) aftertreatment technologies;

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

3 (Y) retrofitting advanced vehicle tech-
4 nologies to existing vehicles;

5 (Z) development of common standards,
6 specifications, and architectures for both trans-
7 portation and stationary battery applications;

8 (AA) advanced internal combustion en-
9 gines;

10 (BB) mild hybrid;

11 (CC) engine down speeding;

12 (DD) vehicle-to-vehicle, vehicle-to-pedes-
13 trian, and vehicle-to-infrastructure technologies;
14 and

15 (EE) other research areas as determined
16 by the Secretary.

17 (2) TRANSFORMATIONAL TECHNOLOGY.—The
18 Secretary shall ensure that the Department con-
19 tinues to support research, development, engineer-
20 ing, demonstration, and commercial application ac-
21 tivities and maintains competency in mid- to long-
22 term transformational vehicle technologies with po-
23 tential to achieve reductions in emissions, including
24 activities in the areas of—

1 (A) hydrogen vehicle technologies, includ-
2 ing fuel cells, hydrogen storage, infrastructure,
3 and activities in hydrogen technology validation
4 and safety codes and standards;

5 (B) multiple battery chemistries and novel
6 energy storage devices, including nonchemical
7 batteries and electromechanical storage tech-
8 nologies such as hydraulics, flywheels, and com-
9 pressed air storage;

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

13 (D) other innovative technologies research
14 and development, as determined by the Sec-
15 retary.

16 (3) INDUSTRY PARTICIPATION.—

17 (A) IN GENERAL.—To the maximum ex-
18 tent practicable, activities under this subtitle
19 shall be carried out in partnership or collabora-
20 tion with automotive manufacturers, heavy com-
21 mercial, vocational, and transit vehicle manu-
22 facturers, qualified plug-in electric vehicle man-
23 ufacturers, compressed natural gas vehicle man-
24 ufacturers, vehicle and engine equipment and
25 component manufacturers, manufacturing

1 equipment manufacturers, advanced vehicle
2 service providers, fuel producers and energy
3 suppliers, electric utilities, universities, National
4 Laboratories, and independent research labora-
5 tories.

6 (B) REQUIREMENTS.—In carrying out this
7 subtitle, the Secretary shall—

8 (i) determine whether a wide range of
9 companies that manufacture or assemble
10 vehicles or components in the United
11 States are represented in ongoing public-
12 private partnership activities, including
13 firms that have not traditionally partici-
14 pated in federally sponsored research and
15 development activities, and where possible,
16 partner with such firms that conduct sig-
17 nificant and relevant research and develop-
18 ment activities in the United States;

19 (ii) leverage the capabilities and re-
20 sources of, and formalize partnerships
21 with, industry-led stakeholder organiza-
22 tions, nonprofit organizations, industry
23 consortia, and trade associations with ex-
24 pertise in the research and development of,
25 and education and outreach activities in,

1 advanced automotive and commercial vehi-
2 cle technologies;

3 (iii) develop more effective processes
4 for transferring research findings and tech-
5 nologies to industry;

6 (iv) support public-private partner-
7 ships, dedicated to overcoming barriers in
8 commercial application of transformational
9 vehicle technologies, that use such indus-
10 try-led technology development facilities of
11 entities with demonstrated expertise in
12 successfully designing and engineering pre-
13 commercial generations of such trans-
14 formational technology; and

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

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

1 (A) relevant programs within the Depart-
2 ment, including—

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

5 (ii) the Office of Science;

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

8 (iv) the Office of Fossil Energy;

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

11 (vi) other offices as determined by the
12 Secretary; and

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

16 (5) FEDERAL DEMONSTRATION OF TECH-
17 NOLOGIES.—The Secretary shall make information
18 available to procurement programs of Federal agen-
19 cies regarding the potential to demonstrate tech-
20 nologies resulting from activities funded through
21 programs under this subtitle.

22 (6) INTERGOVERNMENTAL COORDINATION.—
23 The Secretary shall seek opportunities to leverage
24 resources and support initiatives of State and local
25 governments in developing and promoting advanced

1 vehicle technologies, manufacturing, and infrastruc-
2 ture.

3 (7) CRITERIA.—In awarding grants under the
4 program under this subsection, the Secretary shall
5 give priority to those technologies (either individually
6 or as part of a system) that—

7 (A) provide the greatest aggregate fuel
8 savings based on the reasonable projected sales
9 volumes of the technology; and

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

12 (8) SECONDARY USE APPLICATIONS.—

13 (A) IN GENERAL.—The Secretary shall
14 carry out a research, development, and dem-
15 onstration program that—

16 (i) builds on any work carried out
17 under section 915 of the Energy Policy Act
18 of 2005 (42 U.S.C. 16195);

19 (ii) identifies possible uses of a vehicle
20 battery after the useful life of the battery
21 in a vehicle has been exhausted;

22 (iii) conducts long-term testing to
23 verify performance and degradation pre-
24 dictions and lifetime valuations for sec-
25 ondary uses;

1 (iv) evaluates innovative approaches to
2 recycling materials from plug-in electric
3 drive vehicles and the batteries used in
4 plug-in electric drive vehicles;

5 (v)(I) assesses the potential for mar-
6 kets for uses described in clause (ii) to de-
7 velop; and

8 (II) identifies any barriers to the de-
9 velopment of those markets; and

10 (vi) identifies the potential uses of a
11 vehicle battery—

12 (I) with the most promise for
13 market development; and

14 (II) for which market develop-
15 ment would be aided by a demonstra-
16 tion project.

17 (B) REPORT.—Not later than 1 year after
18 the date of enactment of this Act, the Secretary
19 shall submit to the appropriate committees of
20 Congress an initial report on the findings of the
21 program described in subparagraph (A), includ-
22 ing recommendations for stationary energy stor-
23 age and other potential applications for bat-
24 teries used in plug-in electric drive vehicles.

25 (C) SECONDARY USE DEMONSTRATION.—

1 (i) IN GENERAL.—Based on the re-
2 sults of the program described in subpara-
3 graph (A), the Secretary shall develop
4 guidelines for projects that demonstrate
5 the secondary uses and innovative recycling
6 of vehicle batteries.

7 (ii) PUBLICATION OF GUIDELINES.—
8 Not later than 18 months after the date of
9 enactment of this Act, the Secretary
10 shall—

11 (I) publish the guidelines de-
12 scribed in clause (i); and

13 (II) solicit applications for fund-
14 ing for demonstration projects.

15 (iii) PILOT DEMONSTRATION PRO-
16 GRAM.—Not later than 21 months after
17 the date of enactment of this Act, the Sec-
18 retary shall select proposals for grant
19 funding under this subsection, based on an
20 assessment of which proposals are mostly
21 likely to contribute to the development of
22 a secondary market for batteries.

23 (b) MANUFACTURING.—The Secretary shall carry out
24 a research, development, engineering, demonstration, and
25 commercial application program of advanced vehicle man-

1 manufacturing technologies and practices, including innovative
2 processes—

3 (1) to increase the production rate and decrease
4 the cost of advanced battery and fuel cell manufac-
5 turing;

6 (2) to vary the capability of individual manufac-
7 turing facilities to accommodate different battery
8 chemistries and configurations;

9 (3) to reduce waste streams, emissions, and en-
10 ergy intensity of vehicle, engine, advanced battery,
11 and component manufacturing processes;

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

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

20 (6) to produce lightweight high pressure storage
21 systems for gaseous fuels;

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

24 (8) to improve the calendar life and cycle life of
25 advanced batteries; and

1 (9) to produce permanent magnets for advanced
2 vehicles.

3 **SEC. 1706. MEDIUM- AND HEAVY-DUTY COMMERCIAL AND**
4 **TRANSIT VEHICLES PROGRAM.**

5 The Secretary, in partnership with relevant research
6 and development programs in other Federal agencies, and
7 a range of appropriate industry stakeholders, shall carry
8 out a program of cooperative research, development, dem-
9 onstration, and commercial application activities on ad-
10 vanced technologies for medium- to heavy-duty commer-
11 cial, vocational, recreational, and transit vehicles, includ-
12 ing activities in the areas of—

13 (1) engine efficiency and combustion research;

14 (2) onboard storage technologies for compressed
15 and liquefied natural gas;

16 (3) development and integration of engine tech-
17 nologies designed for natural gas operation of a vari-
18 ety of vehicle platforms;

19 (4) waste heat recovery and conversion;

20 (5) improved aerodynamics and tire rolling re-
21 sistance;

22 (6) energy and space-efficient emissions control
23 systems;

- 1 (7) mild hybrid, heavy hybrid, hybrid hydraulic,
- 2 plug-in hybrid, and electric platforms, and energy
- 3 storage technologies;
- 4 (8) drivetrain optimization;
- 5 (9) friction and wear reduction;
- 6 (10) engine idle and parasitic energy loss reduc-
- 7 tion;
- 8 (11) electrification of accessory loads;
- 9 (12) onboard sensing and communications tech-
- 10 nologies;
- 11 (13) advanced lightweighting materials and ve-
- 12 hicle designs;
- 13 (14) increasing load capacity per vehicle;
- 14 (15) thermal management of battery systems;
- 15 (16) recharging infrastructure;
- 16 (17) compressed natural gas infrastructure;
- 17 (18) advanced internal combustion engines;
- 18 (19) complete vehicle and power pack modeling,
- 19 simulation, and testing;
- 20 (20) hydrogen vehicle technologies, including
- 21 fuel cells and internal combustion engines, and hy-
- 22 drogen infrastructure, including hydrogen energy
- 23 storage to enable renewables and provide hydrogen
- 24 for fuel and power;

- 1 (21) retrofitting advanced technologies onto ex-
2 isting truck fleets;
3 (22) advanced boosting systems;
4 (23) engine down speeding; and
5 (24) integration of these and other advanced
6 systems onto a single truck and trailer platform.

7 **SEC. 1707. CLASS 8 TRUCK AND TRAILER SYSTEMS DEM-**
8 **ONSTRATION.**

9 (a) IN GENERAL.—The Secretary shall conduct a
10 competitive grant program to demonstrate the integration
11 of multiple advanced technologies on Class 8 truck and
12 trailer platforms, including a combination of technologies
13 listed in section 1706.

14 (b) APPLICANT TEAMS.—Applicant teams may be
15 comprised of truck and trailer manufacturers, engine and
16 component manufacturers, fleet customers, university re-
17 searchers, and other applicants as appropriate for the de-
18 velopment and demonstration of integrated Class 8 truck
19 and trailer systems.

20 **SEC. 1708. TECHNOLOGY TESTING AND METRICS.**

21 The Secretary, in coordination with the partners of
22 the interagency research program described in section
23 1706—

- 24 (1) shall develop standard testing procedures
25 and technologies for evaluating the performance of

1 advanced heavy vehicle technologies under a range of
2 representative duty cycles and operating conditions,
3 including for heavy hybrid propulsion systems;

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

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

12 **SEC. 1709. NONROAD SYSTEMS PILOT PROGRAM.**

13 The Secretary shall undertake a pilot program of re-
14 search, development, demonstration, and commercial ap-
15 plications of technologies to improve total machine or sys-
16 tem efficiency for nonroad mobile equipment including ag-
17 ricultural, construction, air, and sea port equipment, and
18 shall seek opportunities to transfer relevant research find-
19 ings and technologies between the nonroad and on-high-
20 way equipment and vehicle sectors.

21 **SEC. 1710. REPEAL OF EXISTING AUTHORITIES.**

22 (a) IN GENERAL.—Sections 706, 711, 712, and 933
23 of the Energy Policy Act of 2005 (42 U.S.C. 16051,
24 16061, 16062, 16233) are repealed.

1 (b) ENERGY EFFICIENCY.—Section 911 of the En-
2 ergy Policy Act of 2005 (42 U.S.C. 16191) is amended—

3 (1) in subsection (a)—

4 (A) in paragraph (1)(A), by striking “vehi-
5 cles, buildings,” and inserting “buildings”; and

6 (B) in paragraph (2)—

7 (i) by striking subparagraph (A); and

8 (ii) by redesignating subparagraphs

9 (B) through (E) as subparagraphs (A)
10 through (D), respectively; and

11 (2) in subsection (c)—

12 (A) by striking paragraph (3);

13 (B) by redesignating paragraph (4) as
14 paragraph (3); and

15 (C) in paragraph (3) (as so redesignated),
16 by striking “(a)(2)(D)” and inserting
17 “(a)(2)(C)”.

18 **Subtitle H—Department of Energy**

19 **SEC. 1801. VETERANS’ HEALTH INITIATIVE.**

20 (a) PURPOSES.—The purposes of this section are to
21 advance Department expertise in artificial intelligence and
22 high-performance computing in order to improve health
23 outcomes for veteran populations by—

24 (1) supporting basic research through the appli-
25 cation of artificial intelligence, high-performance

1 computing, modeling and simulation, machine learn-
2 ing, and large-scale data analytics to identify and
3 solve outcome-defined challenges in the health
4 sciences;

5 (2) maximizing the impact of the Department
6 of Veterans Affairs' health and genomics data
7 housed at the National Laboratories, as well as data
8 from other sources, on science, innovation, and
9 health care outcomes through the use and advance-
10 ment of artificial intelligence and high-performance
11 computing capabilities of the Department;

12 (3) promoting collaborative research through
13 the establishment of partnerships to improve data
14 sharing between Federal agencies, National Labora-
15 tories, institutions of higher education, and non-
16 profit institutions;

17 (4) establishing multiple scientific computing
18 user facilities to house and provision available data
19 to foster transformational outcomes; and

20 (5) driving the development of technology to im-
21 prove artificial intelligence, high-performance com-
22 puting, and networking relevant to mission applica-
23 tions of the Department, including modeling, simula-
24 tion, machine learning, and advanced data analytics.

1 (b) VETERANS HEALTH RESEARCH AND DEVELOP-
2 MENT.—

3 (1) IN GENERAL.—The Secretary shall establish
4 and carry out a research program in artificial intel-
5 ligence and high-performance computing, focused on
6 the development of tools to solve large-scale data
7 analytics and management challenges associated
8 with veteran’s healthcare, and to support the efforts
9 of the Department of Veterans Affairs to identify
10 potential health risks and challenges utilizing data
11 on long-term healthcare, health risks, and genomic
12 data collected from veteran populations. The Sec-
13 retary shall carry out this program through a com-
14 petitive, merit-reviewed process, and consider appli-
15 cations from National Laboratories, institutions of
16 higher education, multi-institutional collaborations,
17 and other appropriate entities.

18 (2) PROGRAM COMPONENTS.—In carrying out
19 the program established under paragraph (1), the
20 Secretary may—

21 (A) conduct basic research in modeling and
22 simulation, machine learning, large-scale data
23 analytics, and predictive analysis in order to de-
24 velop novel or optimized algorithms for pre-
25 diction of disease treatment and recovery;

1 (B) develop methods to accommodate large
2 data sets with variable quality and scale, and to
3 provide insight and models for complex systems;

4 (C) develop new approaches and maximize
5 the use of algorithms developed through artifi-
6 cial intelligence, machine learning, data ana-
7 lytics, natural language processing, modeling
8 and simulation, and develop new algorithms
9 suitable for high-performance computing sys-
10 tems and large biomedical data sets;

11 (D) advance existing and construct new
12 data enclaves capable of securely storing data
13 sets provided by the Department of Veterans
14 Affairs, Department of Defense, and other
15 sources; and

16 (E) promote collaboration and data shar-
17 ing between National Laboratories, research en-
18 tities, and user facilities of the Department by
19 providing the necessary access and secure data
20 transfer capabilities.

21 (3) COORDINATION.—In carrying out the pro-
22 gram established under paragraph (1), the Secretary
23 is authorized—

24 (A) to enter into memoranda of under-
25 standing in order to carry out reimbursable

1 agreements with the Department of Veterans
2 Affairs and other entities in order to maximize
3 the effectiveness of Department research and
4 development to improve veterans' healthcare;

5 (B) to consult with the Department of Vet-
6 erans Affairs and other Federal agencies as ap-
7 propriate; and

8 (C) to ensure that data storage meets all
9 privacy and security requirements established
10 by the Department of Veterans Affairs, and
11 that access to data is provided in accordance
12 with relevant Department of Veterans Affairs
13 data access policies, including informed consent.

14 (4) REPORT.—Not later than 2 years after the
15 date of enactment of this Act, the Secretary shall
16 submit to the Committee on Energy and Natural
17 Resources and the Committee on Veterans' Affairs
18 of the Senate, and the Committee on Science, Space,
19 and Technology and the Committee on Veterans' Af-
20 fairs of the House of Representatives, a report de-
21 tailing the effectiveness of—

22 (A) the interagency coordination between
23 each Federal agency involved in the research
24 program carried out under this subsection;

1 (B) collaborative research achievements of
2 the program; and

3 (C) potential opportunities to expand the
4 technical capabilities of the Department.

5 (5) FUNDING.—There is authorized to be ap-
6 propriated to the Secretary of Veterans Affairs to
7 carry out this subsection \$27,000,000 during the pe-
8 riod of fiscal years 2021 through 2025.

9 (c) INTERAGENCY COLLABORATION.—

10 (1) IN GENERAL.—The Secretary is authorized
11 to carry out research, development, and demonstra-
12 tion activities to develop tools to apply to big data
13 that enable Federal agencies, institutions of higher
14 education, nonprofit research organizations, and in-
15 dustry to better leverage the capabilities of the De-
16 partment to solve complex, big data challenges. The
17 Secretary shall carry out these activities through a
18 competitive, merit-reviewed process, and consider ap-
19 plications from National Laboratories, institutions of
20 higher education, multi-institutional collaborations,
21 and other appropriate entities.

22 (2) ACTIVITIES.—In carrying out the research,
23 development, and demonstration activities authorized
24 under paragraph (1), the Secretary may—

1 (A) utilize all available mechanisms to pre-
2 vent duplication and coordinate research efforts
3 across the Department;

4 (B) establish multiple user facilities to
5 serve as data enclaves capable of securely stor-
6 ing data sets created by Federal agencies, insti-
7 tutions of higher education, nonprofit organiza-
8 tions, or industry at National Laboratories; and

9 (C) promote collaboration and data sharing
10 between National Laboratories, research enti-
11 ties, and user facilities of the Department by
12 providing the necessary access and secure data
13 transfer capabilities.

14 (3) REPORT.—Not later than 2 years after the
15 date of enactment of this Act, the Secretary shall
16 submit to the Committee on Energy and Natural
17 Resources of the Senate and the Committee on
18 Science, Space, and Technology of the House of
19 Representatives a report evaluating the effectiveness
20 of the activities authorized under paragraph (1).

21 (4) FUNDING.—There are authorized to be ap-
22 propriated to the Secretary to carry out this sub-
23 section \$15,000,000 for each of fiscal years 2021
24 through 2025.

1 **SEC. 1802. SMALL SCALE LNG ACCESS.**

2 Section 3 of the Natural Gas Act (15 U.S.C. 717b)
3 is amended by striking subsection (c) and inserting the
4 following:

5 “(c) **EXPEDITED APPLICATION AND APPROVAL**
6 **PROCESS.**—

7 “(1) **IN GENERAL.**—For purposes of subsection
8 (a), the following shall be deemed to be consistent
9 with the public interest, and applications for such
10 importation or exportation shall be granted without
11 modification or delay:

12 “(A) The importation of the natural gas
13 referred to in subsection (b).

14 “(B) Subject to the last sentence of sub-
15 section (a), the exportation of natural gas in a
16 volume up to and including 51,750,000,000
17 cubic feet per year.

18 “(C) The exportation of natural gas to a
19 nation with which there is in effect a free trade
20 agreement requiring national treatment for
21 trade in natural gas.

22 “(2) **EXCLUSION.**—Subparagraphs (B) and (C)
23 of paragraph (1) shall not apply to any nation sub-
24 ject to sanctions imposed by the United States.”.

1 **SEC. 1803. APPALACHIAN ENERGY FOR NATIONAL SECUR-**
2 **RITY.**

3 (a) STUDY ON BUILDING ETHANE AND OTHER NAT-
4 URAL-GAS-LIQUIDS-RELATED PETROCHEMICAL INFRA-
5 STRUCTURE.—

6 (1) IN GENERAL.—Not later than 1 year after
7 the date of enactment of this Act, the Secretary, in
8 consultation with the Secretary of Defense, the Sec-
9 retary of the Treasury, and the heads of other rel-
10 evant Federal departments and agencies and stake-
11 holders, shall conduct a study assessing the potential
12 national and economic security impacts of building
13 ethane and other natural-gas-liquids-related petro-
14 chemical infrastructure in the geographical vicinity
15 of the Marcellus, Utica, and Rogersville shale plays
16 in the United States.

17 (2) CONTENTS.—The study conducted under
18 paragraph (1) shall include—

19 (A) the identification of potential benefits
20 of the proposed infrastructure to national and
21 economic security, including the identification
22 of potential risks to national and economic se-
23 curity of significant foreign ownership and con-
24 trol of United States domestic petrochemical re-
25 sources; and

1 (B) an examination of, with respect to the
2 proposed infrastructure—

3 (i) types of additional infrastructure
4 needed to fully optimize the potential na-
5 tional security benefits;

6 (ii) whether geopolitical diversity in
7 areas to which the ethane and other nat-
8 ural gas liquids will be exported from the
9 producing region would undermine or bol-
10 ster national security;

11 (iii) the necessity of evaluating the
12 public interest with respect to exports of
13 ethane, propane, butane, and other natural
14 gas liquids, to ensure the potential stra-
15 tegic national and economic security bene-
16 fits are preserved within the United States;
17 and

18 (iv) the potential benefits, with re-
19 spect to significant weather impacts, com-
20 pared to other regions, of locating the pro-
21 posed infrastructure in the geographical vi-
22 cinity of the Marcellus, Utica, and
23 Rogersville shale plays.

24 (b) REPORTS.—

1 (1) STATUS REPORTS.—Prior to completion of
2 the study under subsection (a), the Committees on
3 Energy and Natural Resources and Armed Services
4 of the Senate and the Committees on Energy and
5 Commerce and Armed Services of the House of Rep-
6 resentatives, from time to time, may request and re-
7 ceive from the Secretary status reports with respect
8 to the study, including any findings.

9 (2) SUBMISSION AND PUBLICATION OF RE-
10 REPORT.—On completion of the study under subsection
11 (a), the Secretary shall—

12 (A) submit to the Committees on Energy
13 and Natural Resources and Armed Services of
14 the Senate and the Committees on Energy and
15 Commerce and Armed Services of the House of
16 Representatives a report describing the results
17 of the study; and

18 (B) publish the report on the website of
19 the Department.

20 **SEC. 1804. ENERGY AND WATER FOR SUSTAINABILITY.**

21 (a) NEXUS OF ENERGY AND WATER FOR SUSTAIN-
22 ABILITY.—

23 (1) DEFINITIONS.—In this subsection:

1 (A) ENERGY-WATER NEXUS.—The term
2 “energy-water nexus” means the links be-
3 tween—

4 (i) the water needed to produce fuels,
5 electricity, and other forms of energy; and

6 (ii) the energy needed to transport,
7 reclaim, and treat water and wastewater.

8 (B) INTERAGENCY COORDINATION COM-
9 MITTEE.—The term “Interagency Coordination
10 Committee” means the Committee on the
11 Nexus of Energy and Water for Sustainability
12 (or the “NEWS Committee”) established under
13 paragraph (2)(A).

14 (C) NEXUS OF ENERGY AND WATER SUS-
15 TAINABILITY OFFICE; NEWS OFFICE.—The term
16 “Nexus of Energy and Water Sustainability Of-
17 fice” or the “NEWS Office” means an office lo-
18 cated at the Department and managed in co-
19 operation with the Department of the Interior
20 pursuant to an agreement between the 2 agen-
21 cies to carry out leadership and administrative
22 functions for the Interagency Coordination
23 Committee.

24 (D) RD&D.—The term “RD&D” means
25 research, development, and demonstration.

1 (2) INTERAGENCY COORDINATION COM-
2 MITTEE.—

3 (A) ESTABLISHMENT.—Not later than 180
4 days after the date of enactment of this Act,
5 the Secretary and the Secretary of the Interior
6 shall establish the joint NEWS Office and
7 Interagency Coordination Committee on the
8 Nexus of Energy and Water for Sustainability
9 (or the “NEWS Committee”) to carry out the
10 duties described in subparagraph (C).

11 (B) ADMINISTRATION.—

12 (i) CHAIRS.—The Secretary and the
13 Secretary of the Interior shall jointly man-
14 age the NEWS Office and serve as co-
15 chairs of the Interagency Coordination
16 Committee.

17 (ii) MEMBERSHIP; STAFFING.—Mem-
18 bership and staffing shall be determined by
19 the co-chairs.

20 (C) DUTIES.—The Interagency Coordina-
21 tion Committee shall—

22 (i) serve as a forum for developing
23 common Federal goals and plans on en-
24 ergy-water nexus RD&D activities in co-

1 ordination with the National Science and
2 Technology Council;

3 (ii) not later than 1 year after the
4 date of enactment of this Act, and bienni-
5 ally thereafter, issue a strategic plan on
6 energy-water nexus RD&D activities prior-
7 ities and objectives;

8 (iii) convene and promote coordination
9 of the activities of Federal departments
10 and agencies on energy-water nexus RD&D
11 activities, including the activities of—

12 (I) the Department;

13 (II) the Department of the Inte-
14 rior;

15 (III) the Corps of Engineers;

16 (IV) the Department of Agri-
17 culture;

18 (V) the Department of Defense;

19 (VI) the Department of State;

20 (VII) the Environmental Protec-
21 tion Agency;

22 (VIII) the Council on Environ-
23 mental Quality;

24 (IX) the National Institute of
25 Standards and Technology;

- 1 (X) the National Oceanic and At-
2 mospheric Administration;
- 3 (XI) the National Science Foun-
4 dation;
- 5 (XII) the Office of Management
6 and Budget;
- 7 (XIII) the Office of Science and
8 Technology Policy;
- 9 (XIV) the National Aeronautics
10 and Space Administration; and
- 11 (XV) such other Federal depart-
12 ments and agencies as the Inter-
13 agency Coordination Committee con-
14 siders appropriate;
- 15 (iv)(I) coordinate and develop capa-
16 bilities and methodologies for data collec-
17 tion, management, and dissemination of in-
18 formation related to energy-water nexus
19 RD&D activities from and to other Federal
20 departments and agencies; and
- 21 (II) promote information ex-
22 change between Federal departments
23 and agencies—
- 24 (aa) to identify and docu-
25 ment Federal and non-Federal

1 programs and funding opportuni-
2 ties that support basic and ap-
3 plied RD&D proposals to advance
4 energy-water nexus related
5 science and technologies;

6 (bb) to leverage existing pro-
7 grams by encouraging joint solici-
8 tations, block grants, and match-
9 ing programs with non-Federal
10 entities; and

11 (cc) to identify opportunities
12 for domestic and international
13 public-private partnerships, inno-
14 vative financing mechanisms, and
15 information and data exchange;

16 (v) promote the integration of energy-
17 water nexus considerations into existing
18 Federal water, energy, and other natural
19 resource, infrastructure, and science pro-
20 grams at the national and regional levels
21 and with programs administered in part-
22 nership with non-Federal entities; and

23 (vi) not later than 1 year after the
24 date of enactment of this Act, issue a re-
25 port on the potential benefits and feasi-

1 bility of establishing an energy-water cen-
2 ter of excellence within the National Lab-
3 oratories.

4 (D) NO REGULATION.—Nothing in this
5 paragraph grants to the Interagency Coordina-
6 tion Committee the authority to promulgate
7 regulations or set standards.

8 (E) ADDITIONAL PARTICIPATION.—In de-
9 veloping the strategic plan described in sub-
10 paragraph (C)(ii), the Secretary shall consult
11 and coordinate with a diverse group of rep-
12 resentatives from research and academic insti-
13 tutions, industry, public utility commissions,
14 and State and local governments that have ex-
15 pertise in technologies and practices relating to
16 the energy-water nexus.

17 (F) REVIEW; REPORT.—At the end of the
18 5-year period beginning on the date on which
19 the Interagency Coordination Committee and
20 NEWS Office are established, the NEWS Office
21 shall—

22 (i) review the activities, relevance, and
23 effectiveness of the Interagency Coordina-
24 tion Committee; and

1 (ii) submit to the Committee on En-
2 ergy and Natural Resources of the Senate
3 and the Committees on Science, Space,
4 and Technology, Energy and Commerce,
5 and Natural Resources of the House of
6 Representatives a report that—

7 (I) describes the results of the re-
8 view conducted under clause (i); and

9 (II) includes a recommendation
10 on whether the Interagency Coordina-
11 tion Committee should continue.

12 (3) CROSSCUT BUDGET.—Not later than 30
13 days after the President submits the budget of the
14 United States Government under section 1105 of
15 title 31, United States Code, the co-chairs of the
16 Interagency Coordination Committee (acting
17 through the NEWS Office) shall submit to the Com-
18 mittee on Energy and Natural Resources of the Sen-
19 ate and the Committees on Science, Space, and
20 Technology, Energy and Commerce, and Natural
21 Resources of the House of Representatives, an inter-
22 agency budget crosscut report that displays at the
23 program-, project-, and activity-level for each of the
24 Federal agencies that carry out or support (includ-
25 ing through grants, contracts, interagency and

1 intraagency transfers, and multiyear and no-year
2 funds) basic and applied RD&D activities to advance
3 the energy-water nexus related science and tech-
4 nologies—

5 (A) the budget proposed in the budget re-
6 quest of the President for the upcoming fiscal
7 year;

8 (B) expenditures and obligations for the
9 prior fiscal year; and

10 (C) estimated expenditures and obligations
11 for the current fiscal year.

12 (4) TERMINATION.—

13 (A) IN GENERAL.—The authority provided
14 to the NEWS Office and NEWS Committee
15 under this subsection shall terminate on the
16 date that is 7 years after the date of enactment
17 of this Act.

18 (B) EFFECT.—The termination of author-
19 ity under subparagraph (A) shall not affect on-
20 going interagency planning, coordination, or
21 other activities relating to the energy-water
22 nexus.

23 (b) INTEGRATING ENERGY AND WATER RE-
24 SEARCH.—The Secretary shall integrate water consider-

1 ations into energy research, development, and demonstra-
 2 tion programs and projects of the Department by—

3 (1) advancing energy and energy efficiency
 4 technologies and practices that meet the objectives
 5 of—

6 (A) minimizing freshwater withdrawal and
 7 consumption;

8 (B) increasing water use efficiency; and

9 (C) utilizing nontraditional water sources;

10 (2) considering the effects climate variability
 11 may have on water supplies and quality for energy
 12 generation and fuel production; and

13 (3) improving understanding of the energy-
 14 water nexus (as defined in subsection (a)(1)).

15 (c) SMART ENERGY AND WATER EFFICIENCY PILOT
 16 PROGRAM.—

17 (1) IN GENERAL.—Subtitle A of title IX of the
 18 Energy Policy Act of 2005 (42 U.S.C. 16191 et
 19 seq.) is amended by adding at the end the following:

20 **“SEC. 918. SMART ENERGY AND WATER EFFICIENCY PILOT**
 21 **PROGRAM.**

22 “(a) DEFINITIONS.—In this section:

23 “(1) ELIGIBLE ENTITY.—The term ‘eligible en-
 24 tity’ means—

25 “(A) a utility;

1 “(B) a municipality;

2 “(C) a water district;

3 “(D) an Indian tribe or Alaska Native vil-
4 lage; and

5 “(E) any other authority that provides
6 water, wastewater, or water reuse services.

7 “(2) SMART ENERGY AND WATER EFFICIENCY
8 PILOT PROGRAM.—The term ‘smart energy and
9 water efficiency pilot program’ or ‘pilot program’
10 means the pilot program established under sub-
11 section (b).

12 “(b) SMART ENERGY AND WATER EFFICIENCY
13 PILOT PROGRAM.—

14 “(1) IN GENERAL.—The Secretary shall estab-
15 lish and carry out a smart energy and water effi-
16 ciency pilot program in accordance with this section.

17 “(2) PURPOSE.—The purpose of the smart en-
18 ergy and water efficiency pilot program is to award
19 grants to eligible entities to demonstrate unique, ad-
20 vanced, or innovative technology-based solutions that
21 will—

22 “(A) improve the net energy balance of
23 water, wastewater, and water reuse systems;

24 “(B) improve the net energy balance of
25 water, wastewater, and water reuse systems to

1 help communities across the United States
2 make measurable progress in conserving water,
3 saving energy, and reducing costs;

4 “(C) support the implementation of inno-
5 vative and unique processes and the installation
6 of established advanced automated systems that
7 provide real-time data on energy and water; and

8 “(D) improve energy-water conservation
9 and quality and predictive maintenance through
10 technologies that utilize internet connected
11 technologies, including sensors, intelligent gate-
12 ways, and security embedded in hardware.

13 “(3) PROJECT SELECTION.—

14 “(A) IN GENERAL.—The Secretary shall
15 make competitive, merit-reviewed grants under
16 the pilot program to not less than 3, but not
17 more than 5, eligible entities.

18 “(B) SELECTION CRITERIA.—In selecting
19 an eligible entity to receive a grant under the
20 pilot program, the Secretary shall consider—

21 “(i) energy and cost savings;

22 “(ii) the uniqueness, commercial via-
23 bility, and reliability of the technology to
24 be used;

1 “(iii) the degree to which the project
2 integrates next-generation sensors soft-
3 ware, analytics, and management tools;

4 “(iv) the anticipated cost-effectiveness
5 of the pilot project through measurable en-
6 ergy savings, water savings or reuse, and
7 infrastructure costs averted;

8 “(v) whether the technology can be
9 deployed in a variety of geographic regions
10 and the degree to which the technology can
11 be implemented in a wide range of applica-
12 tions ranging in scale from small towns to
13 large cities, including tribal communities;

14 “(vi) whether the technology has been
15 successfully deployed elsewhere;

16 “(vii) whether the technology was
17 sourced from a manufacturer based in the
18 United States; and

19 “(viii) whether the project will be
20 completed in 5 years or less.

21 “(C) APPLICATIONS.—

22 “(i) IN GENERAL.—Subject to clause
23 (ii), an eligible entity seeking a grant
24 under the pilot program shall submit to
25 the Secretary an application at such time,

1 in such manner, and containing such infor-
2 mation as the Secretary determines to be
3 necessary.

4 “(ii) CONTENTS.—An application
5 under clause (i) shall, at a minimum, in-
6 clude—

7 “(I) a description of the project;

8 “(II) a description of the tech-
9 nology to be used in the project;

10 “(III) the anticipated results, in-
11 cluding energy and water savings, of
12 the project;

13 “(IV) a comprehensive budget for
14 the project;

15 “(V) the names of the project
16 lead organization and any partners;

17 “(VI) the number of users to be
18 served by the project;

19 “(VII) a description of the ways
20 in which the proposal would meet per-
21 formance measures established by the
22 Secretary; and

23 “(VIII) any other information
24 that the Secretary determines to be

1 necessary to complete the review and
2 selection of a grant recipient.

3 “(4) ADMINISTRATION.—

4 “(A) IN GENERAL.—Not later than 1 year
5 after the date of enactment of this section, the
6 Secretary shall select grant recipients under
7 this section.

8 “(B) EVALUATIONS.—

9 “(i) ANNUAL EVALUATIONS.—The
10 Secretary shall annually carry out an eval-
11 uation of each project for which a grant is
12 provided under this section that meets per-
13 formance measures and benchmarks devel-
14 oped by the Secretary, consistent with the
15 purposes of this section.

16 “(ii) REQUIREMENTS.—Consistent
17 with the performance measures and bench-
18 marks developed under clause (i), in car-
19 rying out an evaluation under that clause,
20 the Secretary shall—

21 “(I) evaluate the progress and
22 impact of the project; and

23 “(II) assesses the degree to
24 which the project is meeting the goals
25 of the pilot program.

1 “(C) TECHNICAL AND POLICY ASSIST-
2 ANCE.—On the request of a grant recipient, the
3 Secretary shall provide technical and policy as-
4 sistance.

5 “(D) BEST PRACTICES.—The Secretary
6 shall make available to the public through the
7 Internet and other means the Secretary con-
8 siders to be appropriate—

9 “(i) a copy of each evaluation carried
10 out under subparagraph (B); and

11 “(ii) a description of any best prac-
12 tices identified by the Secretary as a result
13 of those evaluations.

14 “(E) REPORT TO CONGRESS.—The Sec-
15 retary shall submit to Congress a report con-
16 taining the results of each evaluation carried
17 out under subparagraph (B).

18 “(c) AUTHORIZATION OF APPROPRIATIONS.—There
19 is authorized to be appropriated to the Secretary to carry
20 out this section \$15,000,000, to remain available until ex-
21 pended.”.

22 (2) CONFORMING AMENDMENT.—The table of
23 contents of the Energy Policy Act of 2005 (Public
24 Law 109–58; 119 Stat. 594) is amended by insert-

1 ing after the item relating to section 917 the fol-
2 lowing:

“Sec. 918. Smart energy and water efficiency pilot program.”.

3 **SEC. 1805. TECHNOLOGY TRANSITIONS.**

4 (a) OFFICE OF TECHNOLOGY TRANSITIONS.—Sec-
5 tion 1001 of the Energy Policy Act of 2005 (42 U.S.C.
6 16391) is amended—

7 (1) by striking subsection (a) and all that fol-
8 lows through “The Coordinator” in subsection (b)
9 and inserting the following:

10 “(a) OFFICE OF TECHNOLOGY TRANSITIONS.—

11 “(1) ESTABLISHMENT.—There is established
12 within the Department an Office of Technology
13 Transitions (referred to in this section as the ‘Of-
14 fice’).

15 “(2) MISSION.—The mission of the Office shall
16 be—

17 “(A) to expand the commercial impact of
18 the research investments of the Department;
19 and

20 “(B) to focus on commercializing tech-
21 nologies that reduce greenhouse gas emissions
22 and technologies that support other missions of
23 the Department.

24 “(3) GOALS.—

1 “(A) IN GENERAL.—In carrying out the
2 mission and activities of the Office, the Chief
3 Commercialization Officer appointed under
4 paragraph (4) shall, with respect to commer-
5 cialization activities, meet not less than two of
6 the goals described in subparagraph (B) and, to
7 the maximum extent practicable, meet all of the
8 goals described in that subparagraph.

9 “(B) GOALS DESCRIBED.—The goals re-
10 ferred to in subparagraph (A) are the following:

11 “(i) Reduction of greenhouse gas
12 emissions.

13 “(ii) Ensuring economic competitive-
14 ness.

15 “(iii) Enhancement of domestic en-
16 ergy security and national security.

17 “(iv) Enhancement of domestic jobs.

18 “(v) Any other missions of the De-
19 partment, as determined by the Secretary.

20 “(4) CHIEF COMMERCIALIZATION OFFICER.—

21 “(A) IN GENERAL.—The Office shall be
22 headed by an officer, who shall be known as the
23 ‘Chief Commercialization Officer’, and who
24 shall report directly to, and be appointed by,
25 the Secretary.

1 “(B) PRINCIPAL ADVISOR.—The Chief
2 Commercialization Officer shall be the principal
3 advisor to the Secretary on all matters relating
4 to technology transfer and commercialization.

5 “(C) QUALIFICATIONS.—The Chief Com-
6 mercialization Officer”;

7 (2) in subsection (c)—

8 (A) in paragraph (1), by striking “sub-
9 section (d)” and inserting “subsection (b)”;

10 (B) by redesignating paragraphs (1)
11 through (4) as clauses (i) through (iv), respec-
12 tively, and indenting appropriately; and

13 (C) by striking the subsection designation
14 and heading and all that follows through “The
15 Coordinator” in the matter preceding clause (i)
16 (as so redesignated) and inserting the following:

17 “(D) DUTIES.—The Chief Commercializa-
18 tion Officer”;

19 (3) by adding at the end of subsection (a) (as
20 amended by paragraph (2)(C)) the following:

21 “(5) COORDINATION.—In carrying out the mis-
22 sion and activities of the Office, the Chief Commer-
23 cialization Officer shall coordinate with the senior
24 leadership of the Department, other relevant pro-
25 gram offices of the Department, National Labora-

1 tories, the Technology Transfer Working Group es-
2 tablished under subsection (b), the Technology
3 Transfer Policy Board, and other stakeholders (in-
4 cluding private industry).”;

5 (4) by redesignating subsections (d) through (h)
6 as subsections (b) through (f), respectively; and

7 (5) in subsection (f) (as so redesignated), by
8 striking “subsection (e)” and inserting “subsection
9 (e)”.

10 (b) REVIEW OF APPLIED ENERGY PROGRAMS.—

11 (1) IN GENERAL.—Not later than 1 year after
12 the date of enactment of this Act, the Secretary
13 shall conduct a review of all applied energy research
14 and development programs under the Department
15 that focus on researching and developing tech-
16 nologies that reduce emissions.

17 (2) REQUIREMENTS.—In conducting the review
18 under paragraph (1), the Secretary shall—

19 (A) identify each program described in
20 that paragraph the mission of which is to re-
21 search and develop technologies that reduce
22 emissions;

23 (B) determine the type of services provided
24 by each program identified under subparagraph
25 (A), such as grants and technical assistance;

1 (C) determine whether there are written
2 program goals for each program identified
3 under subparagraph (A);

4 (D) examine the extent to which the pro-
5 grams identified under subparagraph (A) over-
6 lap or are duplicative; and

7 (E) develop recommendations—

8 (i) as to how any overlapping or dupli-
9 cative programs identified under subpara-
10 graph (D) should be restructured or con-
11 solidated, including by any necessary legis-
12 lation;

13 (ii) as to how to identify technologies
14 described in subparagraph (A) that—

15 (I) are not served by a single
16 program office at the Department; or

17 (II) the research and develop-
18 ment of which may require collabora-
19 tion with other Federal agencies; and

20 (iii) for methods to improve the pro-
21 grams identified under subparagraph (A),
22 including by establishing program goals,
23 assessing workforce considerations and
24 technical skills, or increasing collaboration

1 with other Federal agencies and stake-
2 holders (including private industry).

3 (3) REPORT.—Not later than 60 days after the
4 Secretary completes the review under paragraph (1),
5 the Secretary shall submit to the Committee on En-
6 ergy and Natural Resources of the Senate and the
7 Committees on Science, Space, and Technology and
8 Energy and Commerce of the House of Representa-
9 tives a report describing the results of and the rec-
10 ommendations developed under the review.

11 **SEC. 1806. ENERGY TECHNOLOGY COMMERCIALIZATION**
12 **FUND COST-SHARING.**

13 Section 1001 of the Energy Policy Act of 2005 (42
14 U.S.C. 16391) is amended in subsection (c) (as redesign-
15 nated by section 1805(a)(4))—

16 (1) in the subsection heading, by inserting “EN-
17 ERGY” before “TECHNOLOGY”; and

18 (2) by striking “matching funds with private
19 partners” and inserting “, in accordance with the
20 cost-sharing requirements under section 988, funds
21 to private partners, including National Labora-
22 tories,”.

1 **SEC. 1807. STATE LOAN ELIGIBILITY.**

2 (a) DEFINITIONS.—Section 1701 of the Energy Pol-
3 icy Act of 2005 (42 U.S.C. 16511) is amended by adding
4 at the end the following:

5 “(6) STATE.—The term ‘State’ has the mean-
6 ing given the term in section 202 of the Energy
7 Conservation and Production Act (42 U.S.C. 6802).

8 “(7) STATE ENERGY FINANCING INSTITU-
9 TION.—

10 “(A) IN GENERAL.—The term ‘State en-
11 ergy financing institution’ means a quasi-inde-
12 pendent entity or an entity within a State agen-
13 cy or financing authority established by a
14 State—

15 “(i) to provide financing support or
16 credit enhancements, including loan guar-
17 antees and loan loss reserves, for eligible
18 projects; and

19 “(ii) to create liquid markets for eligi-
20 ble projects, including warehousing and
21 securitization, or take other steps to reduce
22 financial barriers to the deployment of ex-
23 isting and new eligible projects.

24 “(B) INCLUSION.—The term ‘State energy
25 financing institution’ includes an entity or orga-
26 nization established to achieve the purposes de-

1 scribed in clauses (i) and (ii) of subparagraph
2 (A) by an Indian Tribal entity or an Alaska
3 Native Corporation.”.

4 (b) TERMS AND CONDITIONS.—Section 1702 of the
5 Energy Policy Act of 2005 (42 U.S.C. 16512) is amend-
6 ed—

7 (1) in subsection (a), by inserting “, including
8 projects receiving financial support or credit en-
9 hancements from a State energy financing institu-
10 tion,” after “for projects”;

11 (2) in subsection (d)(1), by inserting “, includ-
12 ing a guarantee for a project receiving financial sup-
13 port or credit enhancements from a State energy fi-
14 nancing institution,” after “No guarantee”; and

15 (3) by adding at the end the following:

16 “(1) STATE ENERGY FINANCING INSTITUTIONS.—

17 “(1) ELIGIBILITY.—To be eligible for a guar-
18 antee under this title, a project receiving financial
19 support or credit enhancements from a State energy
20 financing institution—

21 “(A) shall meet the requirements of section
22 1703(a)(1); and

23 “(B) shall not be required to meet the re-
24 quirements of section 1703(a)(2).

1 “(2) PARTNERSHIPS AUTHORIZED.—In car-
2 rying out a project receiving a loan guarantee under
3 this title, State energy financing institutions may
4 enter into partnerships with private entities, Tribal
5 entities, and Alaska Native corporations.

6 “(3) PROHIBITION ON USE OF APPROPRIATED
7 FUNDS.—Amounts appropriated to the Department
8 before the date of enactment of this subsection shall
9 not be available to be used for the cost of loan guar-
10 antees made to State energy financing institutions
11 under this subsection.”.

12 **SEC. 1808. ARPA-E REAUTHORIZATION.**

13 (a) GOALS.—Section 5012(c) of the America COM-
14 PETES Act (42 U.S.C. 16538(c)) is amended—

15 (1) in paragraph (1), by striking subparagraph
16 (A) and inserting the following:

17 “(A) to enhance the economic and energy
18 security of the United States through the devel-
19 opment of energy technologies that—

20 “(i) reduce imports of energy from
21 foreign sources;

22 “(ii) reduce energy-related emissions,
23 including greenhouse gases;

24 “(iii) improve the energy efficiency of
25 all economic sectors; and

1 “(iv) improve the resilience, reliability,
2 and security of infrastructure to produce,
3 deliver, and store energy; and”;

4 (2) in paragraph (2), in the matter preceding
5 subparagraph (A), by striking “energy” and insert-
6 ing “advanced”.

7 (b) RESPONSIBILITIES.—Section 5012(e)(3)(A) of
8 the America COMPETES Act (42 U.S.C.
9 16538(e)(3)(A)) is amended by striking “energy”.

10 (c) AWARDS.—Section 5012(f) of the America COM-
11 PETES Act (42 U.S.C. 16538(f)) is amended—

12 (1) by striking “In carrying” and inserting the
13 following:

14 “(1) IN GENERAL.—In carrying”; and

15 (2) by adding at the end the following:

16 “(2) CONSIDERATION OF PRIOR GRANTS.—In
17 awarding a grant under paragraph (1), the Director
18 shall take into account the satisfactory completion of
19 any project carried out by the entity applying for the
20 grant using any prior grant funds awarded to that
21 entity by the Director.”.

22 (d) REPORTS AND ROADMAPS.—Section 5012(h) of
23 the America COMPETES Act (42 U.S.C. 16538(h)) is
24 amended—

25 (1) in paragraph (1)—

1 (A) by striking “describing projects” and
2 inserting the following: “describing—

3 “(A) projects”;

4 (B) in subparagraph (A) (as so des-
5 ignated), by striking the period at the end and
6 inserting “, including projects that examine top-
7 ics and technologies closely relating to other ac-
8 tivities funded by the Department;” and

9 (C) by adding at the end the following:

10 “(B) an analysis of whether the Director is
11 in compliance with subsection (i)(1)(A) in sup-
12 porting projects that examine the topics and
13 technologies described in subparagraph (A); and

14 “(C) current, proposed, and planned
15 projects to be carried out pursuant to sub-
16 section (e)(3)(D).”; and

17 (2) in paragraph (2)—

18 (A) by striking “October 1, 2010, and Oc-
19 tober 1, 2013” and inserting “October 1, 2021,
20 and every 4 years thereafter”; and

21 (B) by striking “3” and inserting “4”.

22 (e) COORDINATION AND NONDUPLICATION.—Section
23 5012(i)(1) of the America COMPETES Act (42 U.S.C.
24 16538(i)(1)) is amended—

1 (1) by striking “that the activities” and insert-
2 ing the following: “that—

3 “(A) the activities”;

4 (2) in subparagraph (A) (as so designated), by
5 striking the period at the end and inserting “; and”;
6 and

7 (3) by adding at the end the following:

8 “(B) an award is not provided for a
9 project unless the prospective award recipient
10 demonstrates that—

11 “(i) the prospective award recipient
12 has made a sufficient attempt to secure
13 private financing, as determined by the Di-
14 rector; or

15 “(ii) the project is not independently
16 commercially viable.”.

17 (f) EVALUATION.—Section 5012(l) of the America
18 COMPETES Act (42 U.S.C. 16538(l)) is amended—

19 (1) in paragraph (1), by striking “After” and
20 all that follows through “years” and inserting “Not
21 later than 3 years after the date of enactment of the
22 American Energy Innovation Act of 2020”; and

23 (2) in paragraph (2)—

1 (A) in the matter preceding subparagraph
2 (A), by striking “shall” and inserting “may”;
3 and

4 (B) in subparagraph (A), by striking “the
5 recommendation of the National Academy of
6 Sciences” and inserting “a recommendation”.

7 (g) AUTHORIZATION OF APPROPRIATIONS.—Section
8 5012(o)(2) of the America COMPETES Act (42 U.S.C.
9 16538(o)(2)) is amended—

10 (1) in the matter preceding subparagraph (A),
11 by striking “paragraphs (4) and (5)” and inserting
12 “paragraph (4)”; and

13 (2) by striking subparagraphs (A) through (E)
14 and inserting the following:

15 “(A) \$428,000,000 for fiscal year 2021;

16 “(B) \$497,000,000 for fiscal year 2022;

17 “(C) \$567,000,000 for fiscal year 2023;

18 “(D) \$651,000,000 for fiscal year 2024;

19 and

20 “(E) \$750,000,000 for fiscal year 2025.”.

21 (h) TECHNICAL AMENDMENTS.—Section 5012 of the
22 America COMPETES Act (42 U.S.C. 16538) is amend-
23 ed—

1 (1) in subsection (g)(3)(A)(iii), by striking
2 “subpart” each place it appears and inserting “sub-
3 paragraph”; and

4 (2) in subsection (o)(4)(B), by striking
5 “(c)(2)(D)” and inserting “(c)(2)(C)”.

6 **SEC. 1809. ADJUSTING STRATEGIC PETROLEUM RESERVE**
7 **MANDATED DRAWDOWNS.**

8 (a) AMERICA’S WATER INFRASTRUCTURE ACT OF
9 2018.—Section 3009(a)(1) of the America’s Water Infra-
10 structure Act of 2018 (42 U.S.C. 6241 note; Public Law
11 115–270) is amended by striking “2028” and inserting
12 “2030.”

13 (b) BIPARTISAN BUDGET ACT OF 2018.—Section
14 30204(a)(1) of the Bipartisan Budget Act of 2018 (42
15 U.S.C. 6241 note; Public Law 115–123) is amended—

16 (1) in subparagraph (B), by striking “2026”
17 and inserting “2029”; and

18 (2) in subparagraph (C), by striking “2027”
19 and inserting “2030”.

20 (c) RECONCILIATION ON THE BUDGET FOR 2018.—
21 Section 20003(a)(1) of Public Law 115–97 (42 U.S.C.
22 6241 note) is amended by striking “2026 through 2027”
23 and inserting “2029 through 2030.”.

1 **TITLE II—SUPPLY CHAIN**
2 **SECURITY**
3 **Subtitle A—Mineral Security**

4 **SEC. 2101. MINERAL SECURITY.**

5 (a) DEFINITIONS.—In this section:

6 (1) BYPRODUCT.—The term “byproduct”
7 means a critical mineral—

8 (A) the recovery of which depends on the
9 production of a host mineral that is not des-
10 ignated as a critical mineral; and

11 (B) that exists in sufficient quantities to
12 be recovered during processing or refining.

13 (2) CRITICAL MINERAL.—

14 (A) IN GENERAL.—The term “critical min-
15 eral” means any mineral, element, substance, or
16 material designated as critical by the Secretary
17 under subsection (c).

18 (B) EXCLUSIONS.—The term “critical
19 mineral” does not include—

20 (i) fuel minerals, including oil, natural
21 gas, or any other fossil fuels; or

22 (ii) water, ice, or snow.

23 (3) INDIAN TRIBE.—The term “Indian tribe”
24 has the meaning given the term in section 4 of the

1 Indian Self-Determination and Education Assistance
2 Act (25 U.S.C. 5304).

3 (4) SECRETARY.—The term “Secretary” means
4 the Secretary of the Interior.

5 (5) STATE.—The term “State” means—

6 (A) a State;

7 (B) the District of Columbia;

8 (C) the Commonwealth of Puerto Rico;

9 (D) Guam;

10 (E) American Samoa;

11 (F) the Commonwealth of the Northern
12 Mariana Islands; and

13 (G) the United States Virgin Islands.

14 (b) POLICY.—

15 (1) IN GENERAL.—Section 3 of the National
16 Materials and Minerals Policy, Research and Devel-
17 opment Act of 1980 (30 U.S.C. 1602) is amended
18 in the second sentence—

19 (A) by striking paragraph (3) and insert-
20 ing the following:

21 “(3) establish an analytical and forecasting ca-
22 pability for identifying critical mineral demand, sup-
23 ply, and other factors to allow informed actions to
24 be taken to avoid supply shortages, mitigate price

1 volatility, and prepare for demand growth and other
2 market shifts;”;

3 (B) in paragraph (6), by striking “and”
4 after the semicolon at the end; and

5 (C) by striking paragraph (7) and insert-
6 ing the following:

7 “(7) facilitate the availability, development, and
8 environmentally responsible production of domestic
9 resources to meet national material or critical min-
10 eral needs;

11 “(8) avoid duplication of effort, prevent unnec-
12 essary paperwork, and minimize delays in the ad-
13 ministration of applicable laws (including regula-
14 tions) and the issuance of permits and authoriza-
15 tions necessary to explore for, develop, and produce
16 critical minerals and to construct critical mineral
17 manufacturing facilities in accordance with applica-
18 ble environmental and land management laws;

19 “(9) strengthen—

20 “(A) educational and research capabilities
21 at not lower than the secondary school level;
22 and

23 “(B) workforce training for exploration
24 and development of critical minerals and critical
25 mineral manufacturing;

1 “(10) bolster international cooperation through
2 technology transfer, information sharing, and other
3 means;

4 “(11) promote the efficient production, use, and
5 recycling of critical minerals;

6 “(12) develop alternatives to critical minerals;
7 and

8 “(13) establish contingencies for the production
9 of, or access to, critical minerals for which viable
10 sources do not exist within the United States.”.

11 (2) CONFORMING AMENDMENT.—Section 2(b)
12 of the National Materials and Minerals Policy, Re-
13 search and Development Act of 1980 (30 U.S.C.
14 1601(b)) is amended by striking “(b) As used in this
15 Act, the term” and inserting the following:

16 “(b) DEFINITIONS.—In this Act:

17 “(1) CRITICAL MINERAL.—The term ‘critical
18 mineral’ means any mineral, element, substance, or
19 material designated as critical by the Secretary
20 under section 2101(c) of the American Energy Inno-
21 vation Act of 2020.

22 “(2) MATERIALS.—The term”.

23 (c) CRITICAL MINERAL DESIGNATIONS.—

24 (1) DRAFT METHODOLOGY AND LIST.—The
25 Secretary, acting through the Director of the United

1 States Geological Survey (referred to in this sub-
2 section as the “Secretary”), shall publish in the Fed-
3 eral Register for public comment—

4 (A) a description of the draft methodology
5 used to identify a draft list of critical minerals;

6 (B) a draft list of minerals, elements, sub-
7 stances, and materials that qualify as critical
8 minerals; and

9 (C) a draft list of critical minerals recov-
10 ered as byproducts.

11 (2) AVAILABILITY OF DATA.—If available data
12 is insufficient to provide a quantitative basis for the
13 methodology developed under this subsection, quali-
14 tative evidence may be used to the extent necessary.

15 (3) FINAL METHODOLOGY AND LIST.—After re-
16 viewing public comments on the draft methodology
17 and the draft lists published under paragraph (1)
18 and updating the methodology and lists as appro-
19 priate, not later than 45 days after the date on
20 which the public comment period with respect to the
21 draft methodology and draft lists closes, the Sec-
22 retary shall publish in the Federal Register—

23 (A) a description of the final methodology
24 for determining which minerals, elements, sub-

1 stances, and materials qualify as critical min-
2 erals;

3 (B) the final list of critical minerals; and

4 (C) the final list of critical minerals recov-
5 ered as byproducts.

6 (4) DESIGNATIONS.—

7 (A) IN GENERAL.—For purposes of car-
8 rying out this subsection, the Secretary shall
9 maintain a list of minerals, elements, sub-
10 stances, and materials designated as critical,
11 pursuant to the final methodology published
12 under paragraph (3), that the Secretary deter-
13 mines—

14 (i) are essential to the economic or
15 national security of the United States;

16 (ii) the supply chain of which is vul-
17 nerable to disruption (including restrictions
18 associated with foreign political risk, ab-
19 rupt demand growth, military conflict, vio-
20 lent unrest, anti-competitive or protec-
21 tionist behaviors, and other risks through-
22 out the supply chain); and

23 (iii) serve an essential function in the
24 manufacturing of a product (including en-
25 ergy technology-, defense-, currency-, agri-

1 culture-, consumer electronics-, and health
2 care-related applications), the absence of
3 which would have significant consequences
4 for the economic or national security of the
5 United States.

6 (B) INCLUSIONS.—Notwithstanding the
7 criteria under paragraph (3), the Secretary may
8 designate and include on the list any mineral,
9 element, substance, or material determined by
10 another Federal agency to be strategic and crit-
11 ical to the defense or national security of the
12 United States.

13 (C) REQUIRED CONSULTATION.—The Sec-
14 retary shall consult with the Secretaries of De-
15 fense, Commerce, Agriculture, and Energy and
16 the United States Trade Representative in des-
17 ignating minerals, elements, substances, and
18 materials as critical under this paragraph.

19 (5) SUBSEQUENT REVIEW.—

20 (A) IN GENERAL.—The Secretary, in con-
21 sultation with the Secretaries of Defense, Com-
22 merce, Agriculture, and Energy and the United
23 States Trade Representative, shall review the
24 methodology and list under paragraph (3) and
25 the designations under paragraph (4) at least

1 every 3 years, or more frequently as the Sec-
2 retary considers to be appropriate.

3 (B) REVISIONS.—Subject to paragraph
4 (4)(A), the Secretary may—

5 (i) revise the methodology described in
6 this subsection;

7 (ii) determine that minerals, elements,
8 substances, and materials previously deter-
9 mined to be critical minerals are no longer
10 critical minerals; and

11 (iii) designate additional minerals, ele-
12 ments, substances, or materials as critical
13 minerals.

14 (6) NOTICE.—On finalization of the method-
15 ology and the list under paragraph (3), or any revi-
16 sion to the methodology or list under paragraph (5),
17 the Secretary shall submit to Congress written no-
18 tice of the action.

19 (d) RESOURCE ASSESSMENT.—

20 (1) IN GENERAL.—Not later than 4 years after
21 the date of enactment of this Act, in consultation
22 with applicable State (including geological surveys),
23 local, academic, industry, and other entities, the Sec-
24 retary (acting through the Director of the United
25 States Geological Survey) or a designee of the Sec-

1 retary, shall complete a comprehensive national as-
2 sessment of each critical mineral that—

3 (A) identifies and quantifies known critical
4 mineral resources, using all available public and
5 private information and datasets, including ex-
6 ploration histories; and

7 (B) provides a quantitative and qualitative
8 assessment of undiscovered critical mineral re-
9 sources throughout the United States, including
10 probability estimates of tonnage and grade,
11 using all available public and private informa-
12 tion and datasets, including exploration his-
13 tories.

14 (2) SUPPLEMENTARY INFORMATION.—In car-
15 rying out this subsection, the Secretary may carry
16 out surveys and field work (including drilling, re-
17 mote sensing, geophysical surveys, topographical and
18 geological mapping, and geochemical sampling and
19 analysis) to supplement existing information and
20 datasets available for determining the existence of
21 critical minerals in the United States.

22 (3) PUBLIC ACCESS.—Subject to applicable law,
23 to the maximum extent practicable, the Secretary
24 shall make all data and metadata collected from the
25 comprehensive national assessment carried out

1 under paragraph (1) publically and electronically ac-
2 cessible.

3 (4) TECHNICAL ASSISTANCE.—At the request of
4 the Governor of a State or the head of an Indian
5 tribe, the Secretary may provide technical assistance
6 to State governments and Indian tribes conducting
7 critical mineral resource assessments on non-Federal
8 land.

9 (5) PRIORITIZATION.—

10 (A) IN GENERAL.—The Secretary may se-
11 quence the completion of resource assessments
12 for each critical mineral such that critical min-
13 erals considered to be most critical under the
14 methodology established under subsection (c)
15 are completed first.

16 (B) REPORTING.—During the period be-
17 ginning not later than 1 year after the date of
18 enactment of this Act and ending on the date
19 of completion of all of the assessments required
20 under this subsection, the Secretary shall sub-
21 mit to Congress on an annual basis an interim
22 report that—

23 (i) identifies the sequence and sched-
24 ule for completion of the assessments if the
25 Secretary sequences the assessments; or

1 (ii) describes the progress of the as-
2 sessments if the Secretary does not se-
3 quence the assessments.

4 (6) UPDATES.—The Secretary may periodically
5 update the assessments conducted under this sub-
6 section based on—

7 (A) the generation of new information or
8 datasets by the Federal Government; or

9 (B) the receipt of new information or
10 datasets from critical mineral producers, State
11 geological surveys, academic institutions, trade
12 associations, or other persons.

13 (7) ADDITIONAL SURVEYS.—The Secretary
14 shall complete a resource assessment for each addi-
15 tional mineral or element subsequently designated as
16 a critical mineral under subsection (c)(5)(B) not
17 later than 2 years after the designation of the min-
18 eral or element.

19 (8) REPORT.—Not later than 2 years after the
20 date of enactment of this Act, the Secretary shall
21 submit to Congress a report describing the status of
22 geological surveying of Federal land for any mineral
23 commodity—

24 (A) for which the United States was de-
25 pendent on a foreign country for more than 25

1 percent of the United States supply, as depicted
2 in the report issued by the United States Geo-
3 logical Survey entitled “Mineral Commodity
4 Summaries 2020”; but

5 (B) that is not designated as a critical
6 mineral under subsection (c).

7 (e) PERMITTING.—

8 (1) SENSE OF CONGRESS.—It is the sense of
9 Congress that—

10 (A) critical minerals are fundamental to
11 the economy, competitiveness, and security of
12 the United States;

13 (B) to the maximum extent practicable,
14 the critical mineral needs of the United States
15 should be satisfied by minerals responsibly pro-
16 duced and recycled in the United States; and

17 (C) the Federal permitting process has
18 been identified as an impediment to mineral
19 production and the mineral security of the
20 United States.

21 (2) PERFORMANCE IMPROVEMENTS.—To im-
22 prove the quality and timeliness of decisions, the
23 Secretary (acting through the Director of the Bu-
24 reau of Land Management) and the Secretary of Ag-
25 riculture (acting through the Chief of the Forest

1 Service) (referred to in this subsection as the “Sec-
2 retaries”) shall, to the maximum extent practicable,
3 with respect to critical mineral production on Fed-
4 eral land, complete Federal permitting and review
5 processes with maximum efficiency and effectiveness,
6 while supporting vital economic growth, by—

7 (A) establishing and adhering to timelines
8 and schedules for the consideration of, and final
9 decisions regarding, applications, operating
10 plans, leases, licenses, permits, and other use
11 authorizations for mineral-related activities on
12 Federal land;

13 (B) establishing clear, quantifiable, and
14 temporal permitting performance goals and
15 tracking progress against those goals;

16 (C) engaging in early collaboration among
17 agencies, project sponsors, and affected stake-
18 holders—

19 (i) to incorporate and address the in-
20 terests of those parties; and

21 (ii) to minimize delays;

22 (D) ensuring transparency and account-
23 ability by using cost-effective information tech-
24 nology to collect and disseminate information

1 regarding individual projects and agency per-
2 formance;

3 (E) engaging in early and active consulta-
4 tion with State, local, and Indian tribal govern-
5 ments to avoid conflicts or duplication of effort,
6 resolve concerns, and allow for concurrent,
7 rather than sequential, reviews;

8 (F) providing demonstrable improvements
9 in the performance of Federal permitting and
10 review processes, including lower costs and
11 more timely decisions;

12 (G) expanding and institutionalizing per-
13 mitting and review process improvements that
14 have proven effective;

15 (H) developing mechanisms to better com-
16 municate priorities and resolve disputes among
17 agencies at the national, regional, State, and
18 local levels; and

19 (I) developing other practices, such as
20 preapplication procedures.

21 (3) REVIEW AND REPORT.—Not later than 1
22 year after the date of enactment of this Act, the
23 Secretaries shall submit to Congress a report that—

24 (A) identifies additional measures (includ-
25 ing regulatory and legislative proposals, as ap-

1 appropriate) that would increase the timeliness of
2 permitting activities for the exploration and de-
3 velopment of domestic critical minerals;

4 (B) identifies options (including cost recov-
5 ery paid by permit applicants) for ensuring ade-
6 quate staffing and training of Federal entities
7 and personnel responsible for the consideration
8 of applications, operating plans, leases, licenses,
9 permits, and other use authorizations for crit-
10 ical mineral-related activities on Federal land;

11 (C) quantifies the amount of time typically
12 required (including range derived from min-
13 imum and maximum durations, mean, median,
14 variance, and other statistical measures or rep-
15 resentations) to complete each step (including
16 those aspects outside the control of the execu-
17 tive branch, such as judicial review, applicant
18 decisions, or State and local government in-
19 volvement) associated with the development and
20 processing of applications, operating plans,
21 leases, licenses, permits, and other use author-
22 izations for critical mineral-related activities on
23 Federal land, which shall serve as a baseline for
24 the performance metric under paragraph (4);
25 and

1 (D) describes actions carried out pursuant
2 to paragraph (2).

3 (4) PERFORMANCE METRIC.—Not later than 90
4 days after the date of submission of the report
5 under paragraph (3), the Secretaries, after providing
6 public notice and an opportunity to comment, shall
7 develop and publish a performance metric for evalu-
8 ating the progress made by the executive branch to
9 expedite the permitting of activities that will in-
10 crease exploration for, and development of, domestic
11 critical minerals, while maintaining environmental
12 standards.

13 (5) ANNUAL REPORTS.—Beginning with the
14 first budget submission by the President under sec-
15 tion 1105 of title 31, United States Code, after pub-
16 lication of the performance metric required under
17 paragraph (4), and annually thereafter, the Secre-
18 taries shall submit to Congress a report that—

19 (A) summarizes the implementation of rec-
20 ommendations, measures, and options identified
21 in subparagraphs (A) and (B) of paragraph (3);

22 (B) using the performance metric under
23 paragraph (4), describes progress made by the
24 executive branch, as compared to the baseline
25 established pursuant to paragraph (3)(C), on

1 expediting the permitting of activities that will
2 increase exploration for, and development of,
3 domestic critical minerals; and

4 (C) compares the United States to other
5 countries in terms of permitting efficiency and
6 any other criteria relevant to the globally com-
7 petitive critical minerals industry.

8 (6) INDIVIDUAL PROJECTS.—Using data from
9 the Secretaries generated under paragraph (5), the
10 Director of the Office of Management and Budget
11 shall prioritize inclusion of individual critical mineral
12 projects on the website operated by the Office of
13 Management and Budget in accordance with section
14 1122 of title 31, United States Code.

15 (7) REPORT OF SMALL BUSINESS ADMINISTRA-
16 TION.—Not later than 1 year and 300 days after the
17 date of enactment of this Act, the Administrator of
18 the Small Business Administration shall submit to
19 the applicable committees of Congress a report that
20 assesses the performance of Federal agencies with
21 respect to—

22 (A) complying with chapter 6 of title 5,
23 United States Code (commonly known as the
24 “Regulatory Flexibility Act”), in promulgating

1 regulations applicable to the critical minerals
2 industry; and

3 (B) performing an analysis of regulations
4 applicable to the critical minerals industry that
5 may be outmoded, inefficient, duplicative, or ex-
6 cessively burdensome.

7 (f) FEDERAL REGISTER PROCESS.—

8 (1) DEPARTMENTAL REVIEW.—Absent any ex-
9 traordinary circumstance, and except as otherwise
10 required by law, the Secretary and the Secretary of
11 Agriculture shall ensure that each Federal Register
12 notice described in paragraph (2) shall be—

13 (A) subject to any required reviews within
14 the Department of the Interior or the Depart-
15 ment of Agriculture; and

16 (B) published in final form in the Federal
17 Register not later than 45 days after the date
18 of initial preparation of the notice.

19 (2) PREPARATION.—The preparation of Federal
20 Register notices required by law associated with the
21 issuance of a critical mineral exploration or mine
22 permit shall be delegated to the organizational level
23 within the agency responsible for issuing the critical
24 mineral exploration or mine permit.

1 (3) TRANSMISSION.—All Federal Register no-
2 tices regarding official document availability, an-
3 nouncements of meetings, or notices of intent to un-
4 dertake an action shall be originated in, and trans-
5 mitted to the Federal Register from, the office in
6 which, as applicable—

7 (A) the documents or meetings are held; or

8 (B) the activity is initiated.

9 (g) RECYCLING, EFFICIENCY, AND ALTERNATIVES.—

10 (1) ESTABLISHMENT.—The Secretary of En-
11 ergy (referred to in this subsection as the “Sec-
12 retary”) shall conduct a program of research and de-
13 velopment—

14 (A) to promote the efficient production,
15 use, and recycling of critical minerals through-
16 out the supply chain; and

17 (B) to develop alternatives to critical min-
18 erals that do not occur in significant abundance
19 in the United States.

20 (2) COOPERATION.—In carrying out the pro-
21 gram, the Secretary shall cooperate with appro-
22 priate—

23 (A) Federal agencies and National Labora-
24 tories;

25 (B) critical mineral producers;

- 1 (C) critical mineral processors;
- 2 (D) critical mineral manufacturers;
- 3 (E) trade associations;
- 4 (F) academic institutions;
- 5 (G) small businesses; and
- 6 (H) other relevant entities or individuals.

7 (3) ACTIVITIES.—Under the program, the Sec-
8 retary shall carry out activities that include the iden-
9 tification and development of—

10 (A) advanced critical mineral extraction,
11 production, separation, alloying, or processing
12 technologies that decrease the energy consump-
13 tion, environmental impact, and costs of those
14 activities, including—

15 (i) efficient water and wastewater
16 management strategies;

17 (ii) technologies and management
18 strategies to control the environmental im-
19 pacts of radionuclides in ore tailings;

20 (iii) technologies for separation and
21 processing; and

22 (iv) technologies for increasing the re-
23 covery rates of byproducts from host metal
24 ores;

1 (B) technologies or process improvements
2 that minimize the use, or lead to more efficient
3 use, of critical minerals across the full supply
4 chain;

5 (C) technologies, process improvements, or
6 design optimizations that facilitate the recycling
7 of critical minerals, and options for improving
8 the rates of collection of products and scrap
9 containing critical minerals from post-con-
10 sumer, industrial, or other waste streams;

11 (D) commercial markets, advanced storage
12 methods, energy applications, and other bene-
13 ficial uses of critical minerals processing by-
14 products;

15 (E) alternative minerals, metals, and mate-
16 rials, particularly those available in abundance
17 within the United States and not subject to po-
18 tential supply restrictions, that lessen the need
19 for critical minerals; and

20 (F) alternative energy technologies or al-
21 ternative designs of existing energy tech-
22 nologies, particularly those that use minerals
23 that—

24 (i) occur in abundance in the United
25 States; and

1 (ii) are not subject to potential supply
2 restrictions.

3 (4) REPORTS.—Not later than 2 years after the
4 date of enactment of this Act, and annually there-
5 after, the Secretary shall submit to Congress a re-
6 port summarizing the activities, findings, and
7 progress of the program.

8 (h) ANALYSIS AND FORECASTING.—

9 (1) CAPABILITIES.—In order to evaluate exist-
10 ing critical mineral policies and inform future ac-
11 tions that may be taken to avoid supply shortages,
12 mitigate price volatility, and prepare for demand
13 growth and other market shifts, the Secretary (act-
14 ing through the Director of the United States Geo-
15 logical Survey) or a designee of the Secretary, in
16 consultation with the Energy Information Adminis-
17 tration, academic institutions, and others in order to
18 maximize the application of existing competencies re-
19 lated to developing and maintaining computer-mod-
20 els and similar analytical tools, shall conduct and
21 publish the results of an annual report that in-
22 cludes—

23 (A) as part of the annually published Min-
24 eral Commodity Summaries from the United
25 States Geological Survey, a comprehensive re-

1 view of critical mineral production, consump-
2 tion, and recycling patterns, including—

3 (i) the quantity of each critical min-
4 eral domestically produced during the pre-
5 ceding year;

6 (ii) the quantity of each critical min-
7 eral domestically consumed during the pre-
8 ceding year;

9 (iii) market price data or other price
10 data for each critical mineral;

11 (iv) an assessment of—

12 (I) critical mineral requirements
13 to meet the national security, energy,
14 economic, industrial, technological,
15 and other needs of the United States
16 during the preceding year;

17 (II) the reliance of the United
18 States on foreign sources to meet
19 those needs during the preceding year;
20 and

21 (III) the implications of any sup-
22 ply shortages, restrictions, or disrup-
23 tions during the preceding year;

1 (v) the quantity of each critical min-
2 eral domestically recycled during the pre-
3 ceding year;

4 (vi) the market penetration during the
5 preceding year of alternatives to each crit-
6 ical mineral;

7 (vii) a discussion of international
8 trends associated with the discovery, pro-
9 duction, consumption, use, costs of produc-
10 tion, prices, and recycling of each critical
11 mineral as well as the development of al-
12 ternatives to critical minerals; and

13 (viii) such other data, analyses, and
14 evaluations as the Secretary finds are nec-
15 essary to achieve the purposes of this sub-
16 section; and

17 (B) a comprehensive forecast, entitled the
18 “Annual Critical Minerals Outlook”, of pro-
19 jected critical mineral production, consumption,
20 and recycling patterns, including—

21 (i) the quantity of each critical min-
22 eral projected to be domestically produced
23 over the subsequent 1-year, 5-year, and
24 10-year periods;

1 (ii) the quantity of each critical min-
2 eral projected to be domestically consumed
3 over the subsequent 1-year, 5-year, and
4 10-year periods;

5 (iii) an assessment of—

6 (I) critical mineral requirements
7 to meet projected national security,
8 energy, economic, industrial, techno-
9 logical, and other needs of the United
10 States;

11 (II) the projected reliance of the
12 United States on foreign sources to
13 meet those needs; and

14 (III) the projected implications of
15 potential supply shortages, restric-
16 tions, or disruptions;

17 (iv) the quantity of each critical min-
18 eral projected to be domestically recycled
19 over the subsequent 1-year, 5-year, and
20 10-year periods;

21 (v) the market penetration of alter-
22 natives to each critical mineral projected to
23 take place over the subsequent 1-year, 5-
24 year, and 10-year periods;

1 (vi) a discussion of reasonably foresee-
2 able international trends associated with
3 the discovery, production, consumption,
4 use, costs of production, and recycling of
5 each critical mineral as well as the develop-
6 ment of alternatives to critical minerals;
7 and

8 (vii) such other projections relating to
9 each critical mineral as the Secretary de-
10 termines to be necessary to achieve the
11 purposes of this subsection.

12 (2) PROPRIETARY INFORMATION.—In preparing
13 a report described in paragraph (1), the Secretary
14 shall ensure, consistent with section 5(f) of the Na-
15 tional Materials and Minerals Policy, Research and
16 Development Act of 1980 (30 U.S.C. 1604(f)),
17 that—

18 (A) no person uses the information and
19 data collected for the report for a purpose other
20 than the development of or reporting of aggre-
21 gate data in a manner such that the identity of
22 the person or firm who supplied the information
23 is not discernible and is not material to the in-
24 tended uses of the information;

1 (B) no person discloses any information or
2 data collected for the report unless the informa-
3 tion or data has been transformed into a statis-
4 tical or aggregate form that does not allow the
5 identification of the person or firm who sup-
6 plied particular information; and

7 (C) procedures are established to require
8 the withholding of any information or data col-
9 lected for the report if the Secretary determines
10 that withholding is necessary to protect propri-
11 etary information, including any trade secrets
12 or other confidential information.

13 (i) EDUCATION AND WORKFORCE.—

14 (1) WORKFORCE ASSESSMENT.—Not later than
15 1 year and 300 days after the date of enactment of
16 this Act, the Secretary of Labor (in consultation
17 with the Secretary, the Director of the National
18 Science Foundation, institutions of higher education
19 with substantial expertise in mining, institutions of
20 higher education with significant expertise in min-
21 erals research, including fundamental research into
22 alternatives, and employers in the critical minerals
23 sector) shall submit to Congress an assessment of
24 the domestic availability of technically trained per-
25 sonnel necessary for critical mineral exploration, de-

1 velopment, assessment, production, manufacturing,
2 recycling, analysis, forecasting, education, and re-
3 search, including an analysis of—

4 (A) skills that are in the shortest supply as
5 of the date of the assessment;

6 (B) skills that are projected to be in short
7 supply in the future;

8 (C) the demographics of the critical min-
9 erals industry and how the demographics will
10 evolve under the influence of factors such as an
11 aging workforce;

12 (D) the effectiveness of training and edu-
13 cation programs in addressing skills shortages;

14 (E) opportunities to hire locally for new
15 and existing critical mineral activities;

16 (F) the sufficiency of personnel within rel-
17 evant areas of the Federal Government for
18 achieving the policies described in section 3 of
19 the National Materials and Minerals Policy, Re-
20 search and Development Act of 1980 (30
21 U.S.C. 1602); and

22 (G) the potential need for new training
23 programs to have a measurable effect on the
24 supply of trained workers in the critical min-
25 erals industry.

1 (2) CURRICULUM STUDY.—

2 (A) IN GENERAL.—The Secretary and the
3 Secretary of Labor shall jointly enter into an
4 arrangement with the National Academy of
5 Sciences and the National Academy of Engi-
6 neering under which the Academies shall co-
7 ordinate with the National Science Foundation
8 on conducting a study—

9 (i) to design an interdisciplinary pro-
10 gram on critical minerals that will support
11 the critical mineral supply chain and im-
12 prove the ability of the United States to
13 increase domestic, critical mineral explo-
14 ration, development, production, manufac-
15 turing, research, including fundamental re-
16 search into alternatives, and recycling;

17 (ii) to address undergraduate and
18 graduate education, especially to assist in
19 the development of graduate level pro-
20 grams of research and instruction that
21 lead to advanced degrees with an emphasis
22 on the critical mineral supply chain or
23 other positions that will increase domestic,
24 critical mineral exploration, development,
25 production, manufacturing, research, in-

1 cluding fundamental research into alter-
2 natives, and recycling;

3 (iii) to develop guidelines for pro-
4 posals from institutions of higher edu-
5 cation with substantial capabilities in the
6 required disciplines for activities to im-
7 prove the critical mineral supply chain and
8 advance the capacity of the United States
9 to increase domestic, critical mineral explo-
10 ration, research, development, production,
11 manufacturing, and recycling; and

12 (iv) to outline criteria for evaluating
13 performance and recommendations for the
14 amount of funding that will be necessary
15 to establish and carry out the program de-
16 scribed in paragraph (3).

17 (B) REPORT.—Not later than 2 years after
18 the date of enactment of this Act, the Secretary
19 shall submit to Congress a description of the re-
20 sults of the study required under subparagraph
21 (A).

22 (3) PROGRAM.—

23 (A) ESTABLISHMENT.—The Secretary and
24 the Secretary of Labor shall jointly conduct a
25 competitive grant program under which institu-

1 tions of higher education may apply for and re-
2 ceive 4-year grants for—

3 (i) startup costs for newly designated
4 faculty positions in integrated critical min-
5 eral education, research, innovation, train-
6 ing, and workforce development programs
7 consistent with paragraph (2);

8 (ii) internships, scholarships, and fel-
9 lowships for students enrolled in programs
10 related to critical minerals;

11 (iii) equipment necessary for inte-
12 grated critical mineral innovation, training,
13 and workforce development programs; and

14 (iv) research of critical minerals and
15 their applications, particularly concerning
16 the manufacture of critical components
17 vital to national security.

18 (B) RENEWAL.—A grant under this para-
19 graph shall be renewable for up to 2 additional
20 3-year terms based on performance criteria out-
21 lined under paragraph (2)(A)(iv).

22 (j) NATIONAL GEOLOGICAL AND GEOPHYSICAL DATA
23 PRESERVATION PROGRAM.—Section 351(k) of the Energy
24 Policy Act of 2005 (42 U.S.C. 15908(k)) is amended by
25 striking “\$30,000,000 for each of fiscal years 2006

1 through 2010” and inserting “\$5,000,000 for each of fis-
2 cal years 2021 through 2029, to remain available until ex-
3 pended”.

4 (k) ADMINISTRATION.—

5 (1) IN GENERAL.—The National Critical Mate-
6 rials Act of 1984 (30 U.S.C. 1801 et seq.) is re-
7 pealed.

8 (2) CONFORMING AMENDMENT.—Section 3(d)
9 of the National Superconductivity and Competitive-
10 ness Act of 1988 (15 U.S.C. 5202(d)) is amended
11 in the first sentence by striking “, with the assist-
12 ance of the National Critical Materials Council as
13 specified in the National Critical Materials Act of
14 1984 (30 U.S.C. 1801 et seq.),”.

15 (3) SAVINGS CLAUSES.—

16 (A) IN GENERAL.—Nothing in this section
17 or an amendment made by this section modifies
18 any requirement or authority provided by—

19 (i) the matter under the heading “**GE-**
20 **OLOGICAL SURVEY**” of the first section
21 of the Act of March 3, 1879 (43 U.S.C.
22 31(a)); or

23 (ii) the first section of Public Law
24 87–626 (43 U.S.C. 31(b)).

1 (B) EFFECT ON DEPARTMENT OF DE-
2 FENSE.—Nothing in this section or an amend-
3 ment made by this section affects the authority
4 of the Secretary of Defense with respect to the
5 work of the Department of Defense on critical
6 material supplies in furtherance of the national
7 defense mission of the Department of Defense.

8 (C) SECRETARIAL ORDER NOT AF-
9 FECTED.—This section shall not apply to any
10 mineral described in Secretarial Order No.
11 3324, issued by the Secretary on December 3,
12 2012, in any area to which the order applies.

13 (4) APPLICATION OF CERTAIN PROVISIONS.—

14 (A) IN GENERAL.—Subsections (e) and (f)
15 shall apply to—

16 (i) an exploration project in which the
17 presence of a byproduct is reasonably ex-
18 pected, based on known mineral
19 companionship, geologic formation, min-
20 eralogy, or other factors; and

21 (ii) a project that demonstrates that
22 the byproduct is of sufficient grade that,
23 when combined with the production of a
24 host mineral, the byproduct is economic to
25 recover, as determined by the applicable

1 Secretary in accordance with subparagraph
2 (B).

3 (B) REQUIREMENT.—In making the deter-
4 mination under subparagraph (A)(ii), the appli-
5 cable Secretary shall consider the cost effective-
6 ness of the byproducts recovery.

7 (1) AUTHORIZATION OF APPROPRIATIONS.—There is
8 authorized to be appropriated to carry out this section
9 \$50,000,000 for each of fiscal years 2021 through 2029.

10 **SEC. 2102. RARE EARTH ELEMENT ADVANCED COAL TECH-**
11 **NOLOGIES.**

12 (a) PROGRAM FOR EXTRACTION AND RECOVERY OF
13 RARE EARTH ELEMENTS AND MINERALS FROM COAL
14 AND COAL BYPRODUCTS.—

15 (1) IN GENERAL.—The Secretary of Energy,
16 acting through the Assistant Secretary for Fossil
17 Energy (referred to in this section as the “Sec-
18 retary”), shall carry out a program under which the
19 Secretary shall develop advanced separation tech-
20 nologies for the extraction and recovery of rare earth
21 elements and minerals from coal and coal byprod-
22 ucts.

23 (2) AUTHORIZATION OF APPROPRIATIONS.—
24 There is authorized to be appropriated to the Sec-
25 retary to carry out the program described in para-

1 graph (1) \$23,000,000 for each of fiscal years 2021
2 through 2027.

3 (b) REPORT.—Not later than 1 year after the date
4 of enactment of this Act, the Secretary shall submit to
5 the Committee on Energy and Natural Resources of the
6 Senate and the Committee on Energy and Commerce of
7 the House of Representatives a report evaluating the de-
8 velopment of advanced separation technologies for the ex-
9 traction and recovery of rare earth elements and minerals
10 from coal and coal byproducts, including acid mine drain-
11 age from coal mines.

12 **Subtitle B—Cybersecurity and Grid** 13 **Security and Modernization**

14 **PART I—CYBERSECURITY AND GRID SECURITY**

15 **SEC. 2201. INCENTIVES FOR ADVANCED CYBERSECURITY** 16 **TECHNOLOGY INVESTMENT.**

17 Part II of the Federal Power Act is amended by in-
18 serting after section 219 (16 U.S.C. 824s) the following:

19 **“SEC. 219A. INCENTIVES FOR CYBERSECURITY INVEST-** 20 **MENTS.**

21 “(a) DEFINITIONS.—In this section:

22 “(1) ADVANCED CYBERSECURITY TECH-
23 NOLOGY.—The term ‘advanced cybersecurity tech-
24 nology’ means any technology, operational capability,
25 or service, including computer hardware, software,

1 or a related asset, that enhances the security posture
2 of public utilities through improvements in the abil-
3 ity to protect against, detect, respond to, or recover
4 from a cybersecurity threat (as defined in section
5 102 of the Cybersecurity Act of 2015 (6 U.S.C.
6 1501)).

7 “(2) ADVANCED CYBERSECURITY TECHNOLOGY
8 INFORMATION.—The term ‘advanced cybersecurity
9 technology information’ means information relating
10 to advanced cybersecurity technology or proposed
11 advanced cybersecurity technology that is generated
12 by or provided to the Commission or another Fed-
13 eral agency.

14 “(b) STUDY.—Not later than 180 days after the date
15 of enactment of this section, the Commission, in consulta-
16 tion with the Secretary of Energy, the North American
17 Electric Reliability Corporation, the Electricity Subsector
18 Coordinating Council, and the National Association of
19 Regulatory Utility Commissioners, shall conduct a study
20 to identify incentive-based, including performance-based,
21 rate treatments for the transmission and sale of electric
22 energy subject to the jurisdiction of the Commission that
23 could be used to encourage—

24 “(1) investment by public utilities in advanced
25 cybersecurity technology; and

1 “(2) participation by public utilities in cyberse-
2 curity threat information sharing programs.

3 “(c) INCENTIVE-BASED RATE TREATMENT.—Not
4 later than 1 year after the completion of the study under
5 subsection (b), the Commission shall establish, by rule, in-
6 centive-based, including performance-based, rate treat-
7 ments for the transmission of electric energy in interstate
8 commerce and the sale of electric energy at wholesale in
9 interstate commerce by public utilities for the purpose of
10 benefitting consumers by encouraging—

11 “(1) investments by public utilities in advanced
12 cybersecurity technology; and

13 “(2) participation by public utilities in cyberse-
14 curity threat information sharing programs.

15 “(d) FACTORS FOR CONSIDERATION.—In issuing a
16 rule pursuant to this section, the Commission may provide
17 additional incentives beyond those identified in subsection
18 (c) in any case in which the Commission determines that
19 an investment in advanced cybersecurity technology or in-
20 formation sharing program costs will reduce cybersecurity
21 risks to—

22 “(1) defense critical electric infrastructure (as
23 defined in section 215A(a)) and other facilities sub-
24 ject to the jurisdiction of the Commission that are
25 critical to public safety, national defense, or home-

1 land security, as determined by the Commission in
2 consultation with—

3 “(A) the Secretary of Energy; and

4 “(B) appropriate Federal agencies; and

5 “(2) facilities of small or medium-sized public
6 utilities with limited cybersecurity resources, as de-
7 termined by the Commission.

8 “(e) RATEPAYER PROTECTION.—

9 “(1) IN GENERAL.—Any rate approved under a
10 rule issued pursuant to this section, including any
11 revisions to that rule, shall be subject to the require-
12 ments of sections 205 and 206 that all rates,
13 charges, terms, and conditions—

14 “(A) shall be just and reasonable; and

15 “(B) shall not be unduly discriminatory or
16 preferential.

17 “(2) PROHIBITION OF DUPLICATE RECOVERY.—

18 Any rule issued pursuant to this section shall pre-
19 clude rate treatments that allow unjust and unrea-
20 sonable double recovery for advanced cybersecurity
21 technology.

22 “(f) SINGLE-ISSUE RATE FILINGS.—The Commis-
23 sion shall permit public utilities to apply for incentive-
24 based rate treatment under a rule issued under this sec-
25 tion on a single-issue basis by submitting to the Commis-

1 sion a tariff schedule under section 205 that permits re-
2 covery of costs and incentives over the depreciable life of
3 the applicable assets, without regard to changes in receipts
4 or other costs of the public utility.

5 “(g) PROTECTION OF INFORMATION.—Advanced cy-
6 bersecurity technology information that is provided to,
7 generated by, or collected by the Federal Government
8 under subsection (b), (c), or (f) shall be considered to be
9 critical electric infrastructure information under section
10 215A.”.

11 **SEC. 2202. RURAL AND MUNICIPAL UTILITY ADVANCED CY-**
12 **BERSECURITY GRANT AND TECHNICAL AS-**
13 **SISTANCE PROGRAM.**

14 (a) DEFINITIONS.—In this section:

15 (1) ADVANCED CYBERSECURITY TECH-
16 NOLOGY.—The term “advanced cybersecurity tech-
17 nology” means any technology, operational capa-
18 bility, or service, including computer hardware, soft-
19 ware, or a related asset, that enhances the security
20 posture of electric utilities through improvements in
21 the ability to protect against, detect, respond to, or
22 recover from a cybersecurity threat (as defined in
23 section 102 of the Cybersecurity Act of 2015 (6
24 U.S.C. 1501)).

1 (2) ELIGIBLE ENTITY.—The term “eligible enti-
2 ty” means—

3 (A) a rural electric cooperative;

4 (B) a utility owned by a political subdivi-
5 sion of a State, such as a municipally owned
6 electric utility;

7 (C) a utility owned by any agency, author-
8 ity, corporation, or instrumentality of 1 or more
9 political subdivisions of a State;

10 (D) a not-for-profit entity that is in a part-
11 nership with not fewer than 6 entities described
12 in subparagraph (A), (B), or (C); and

13 (E) an investor-owned electric utility that
14 sells less than 4,000,000 megawatt hours of
15 electricity per year.

16 (3) PROGRAM.—The term “Program” means
17 the Rural and Municipal Utility Advanced Cyberse-
18 curity Grant and Technical Assistance Program es-
19 tablished under subsection (b).

20 (b) ESTABLISHMENT.—Not later than 180 days after
21 the date of enactment of this Act, the Secretary, in con-
22 sultation with the Federal Energy Regulatory Commis-
23 sion, the North American Electric Reliability Corporation,
24 and the Electricity Subsector Coordinating Council, shall
25 establish a program, to be known as the “Rural and Mu-

1 nicipal Utility Advanced Cybersecurity Grant and Tech-
2 nical Assistance Program”, to provide grants and tech-
3 nical assistance to, and enter into cooperative agreements
4 with, eligible entities to protect against, detect, respond
5 to, and recover from cybersecurity threats.

6 (c) OBJECTIVES.—The objectives of the Program
7 shall be—

8 (1) to deploy advanced cybersecurity tech-
9 nologies for electric utility systems; and

10 (2) to increase the participation of eligible enti-
11 ties in cybersecurity threat information sharing pro-
12 grams.

13 (d) AWARDS.—

14 (1) IN GENERAL.—The Secretary—

15 (A) shall award grants and provide tech-
16 nical assistance under the Program to eligible
17 entities on a competitive basis;

18 (B) shall develop criteria and a formula for
19 awarding grants and providing technical assist-
20 ance under the Program;

21 (C) may enter into cooperative agreements
22 with eligible entities that can facilitate the ob-
23 jectives described in subsection (c); and

24 (D) shall establish a process to ensure that
25 all eligible entities are informed about and can

1 become aware of opportunities to receive grants
2 or technical assistance under the Program.

3 (2) PRIORITY FOR GRANTS AND TECHNICAL AS-
4 SISTANCE.—In awarding grants and providing tech-
5 nical assistance under the Program, the Secretary
6 shall give priority to an eligible entity that, as deter-
7 mined by the Secretary—

8 (A) has limited cybersecurity resources;

9 (B) owns assets critical to the reliability of
10 the bulk power system; or

11 (C) owns defense critical electric infra-
12 structure (as defined in section 215A(a) of the
13 Federal Power Act (16 U.S.C. 824o–1(a))).

14 (e) PROTECTION OF INFORMATION.—Information
15 provided to, or collected by, the Federal Government
16 under this section—

17 (1) shall be exempt from disclosure under sec-
18 tion 552(b)(3) of title 5, United States Code; and

19 (2) shall not be made available by any Federal
20 agency, State, political subdivision of a State, or
21 Tribal authority under any applicable law requiring
22 public disclosure of information or records.

23 (f) FUNDING.—There is authorized to be appro-
24 priated to carry out this section \$50,000,000 for each of

1 fiscal years 2021 through 2025, to remain available until
2 expended.

3 **SEC. 2203. STATE ENERGY SECURITY PLANS.**

4 (a) IN GENERAL.—Part D of title III of the Energy
5 Policy and Conservation Act (42 U.S.C. 6321 et seq.) is
6 amended by adding at the end the following:

7 **“SEC. 367. STATE ENERGY SECURITY PLANS.**

8 “(a) IN GENERAL.—Federal financial assistance
9 made available to a State under this part may be used
10 for the development, implementation, review, and revision
11 of a State energy security plan that assesses the State’s
12 existing circumstances and proposes methods to strength-
13 en the ability of the State, in consultation with owners
14 and operators of energy infrastructure in such State, to—

15 “(1) secure the energy infrastructure of the
16 State against all physical and cybersecurity threats;

17 “(2) mitigate the risk of energy supply disrup-
18 tions to the State and enhance the response to, and
19 recovery from, energy disruptions; and

20 “(3) ensure the State has a reliable, secure, and
21 resilient energy infrastructure.

22 “(b) CONTENTS OF PLAN.—A State energy security
23 plan described in subsection (a) shall—

24 “(1) address all energy sources and regulated
25 and unregulated energy providers;

1 “(2) provide a State energy profile, including
2 an assessment of energy production, distribution,
3 and end-use;

4 “(3) address potential hazards to each energy
5 sector or system, including physical threats and cy-
6 bersecurity threats and vulnerabilities;

7 “(4) provide a risk assessment of energy infra-
8 structure and cross-sector interdependencies;

9 “(5) provide a risk mitigation approach to en-
10 hance reliability and end-use resilience; and

11 “(6) address multi-State, Indian Tribe, and re-
12 gional coordination planning and response, and to
13 the extent practicable, encourage mutual assistance
14 in cyber and physical response plans.

15 “(c) COORDINATION.—In developing or revising a
16 State energy security plan under this section, the energy
17 office of the State shall, to the extent practicable, coordi-
18 nate with—

19 “(1) the public utility or service commission of
20 the State;

21 “(2) energy providers from the private and pub-
22 lic sectors; and

23 “(3) other entities responsible for maintaining
24 fuel or electric reliability and securing energy infra-
25 structure.

1 “(d) FINANCIAL ASSISTANCE.—A State is not eligible
2 to receive Federal financial assistance under this part, for
3 any purpose, for a fiscal year unless the Governor of such
4 State submits to the Secretary, with respect to such fiscal
5 year—

6 “(1) a State energy security plan described in
7 subsection (a) that meets the requirements of sub-
8 section (b); or

9 “(2) after an annual review of the State energy
10 security plan by the Governor—

11 “(A) any necessary revisions to such plan;

12 or

13 “(B) a certification that no revisions to
14 such plan are necessary.

15 “(e) TECHNICAL ASSISTANCE.—Upon request of the
16 Governor of a State, the Secretary may provide informa-
17 tion and technical assistance, and other assistance, in the
18 development, implementation, or revision of a State energy
19 security plan.

20 “(f) REQUIREMENT.—Each State receiving Federal
21 financial assistance under this part shall provide reason-
22 able assurance to the Secretary that the State has estab-
23 lished policies and procedures designed to assure that the
24 financial assistance will be used—

1 “(1) to supplement, and not to supplant, State
2 and local funds; and

3 “(2) to the maximum extent practicable, to in-
4 crease the amount of State and local funds that oth-
5 erwise would be available, in the absence of the fi-
6 nancial assistance, for the implementation of the
7 State energy security plan under this section.

8 “(g) PROTECTION OF INFORMATION.—Information
9 provided to, or collected by, the Federal Government
10 under this section—

11 “(1) shall be exempt from disclosure under sec-
12 tion 552(b)(3) of title 5, United States Code; and

13 “(2) shall not be made available by any Federal
14 agency, State, political subdivision of a State, or
15 Tribal authority pursuant to any Federal, State, or
16 Tribal law, as applicable, requiring public disclosure
17 of information or records.

18 “(h) SUNSET.—This section shall expire on October
19 31, 2024.”.

20 (b) AUTHORIZATION OF APPROPRIATIONS.—Section
21 365(f) of the Energy Policy and Conservation Act (42
22 U.S.C. 6325(f)) is amended—

23 (1) by striking “\$125,000,000” and inserting
24 “\$90,000,000”; and

1 (2) by striking “2007 through 2012” and in-
2 serting “2021 through 2025”.

3 (c) TECHNICAL AND CONFORMING AMENDMENTS.—

4 (1) CONFORMING AMENDMENTS.—Section 363
5 of the Energy Policy and Conservation Act (42
6 U.S.C. 6323) is amended—

7 (A) by striking subsection (e); and

8 (B) by redesignating subsection (f) as sub-
9 section (e).

10 (2) TECHNICAL AMENDMENT.—Section
11 366(3)(B)(i) of the Energy Policy and Conservation
12 Act (42 U.S.C. 6326(3)(B)(i)) is amended by strik-
13 ing “approved under section 367”.

14 (3) REFERENCE.—The matter under the head-
15 ing “ENERGY CONSERVATION” under the heading
16 “DEPARTMENT OF ENERGY” in title II of the
17 Department of the Interior and Related Agencies
18 Appropriations Act, 1985 (42 U.S.C. 6323a) is
19 amended by striking “sections 361 through 366”
20 and inserting “sections 361 through 367”.

21 (4) TABLE OF CONTENTS.—The table of con-
22 tents for part D of title III of the Energy Policy and
23 Conservation Act (Public Law 94–163; 89 Stat. 872;
24 92 Stat. 3272; 104 Stat. 1006) is amended by add-
25 ing at the end the following:

“Sec. 367. State energy security plans.”.

1 **SEC. 2204. ENHANCING GRID SECURITY THROUGH PUBLIC-**
2 **PRIVATE PARTNERSHIPS.**

3 (a) DEFINITIONS.—In this section:

4 (1) ELECTRIC RELIABILITY ORGANIZATION.—
5 The term “Electric Reliability Organization” has the
6 meaning given the term in section 215(a) of the
7 Federal Power Act (16 U.S.C. 824o(a)).

8 (2) ELECTRIC UTILITY; STATE REGULATORY
9 AUTHORITY.—The terms “electric utility” and
10 “State regulatory authority” have the meanings
11 given those terms in section 3 of the Federal Power
12 Act (16 U.S.C. 796).

13 (b) PROGRAM TO PROMOTE AND ADVANCE PHYSICAL
14 SECURITY AND CYBERSECURITY OF ELECTRIC UTILI-
15 TIES.—

16 (1) ESTABLISHMENT.—The Secretary, in con-
17 sultation with State regulatory authorities, industry
18 stakeholders, the Electric Reliability Organization,
19 and any other Federal agencies that the Secretary
20 determines to be appropriate, shall carry out a pro-
21 gram—

22 (A) to develop, and provide for voluntary
23 implementation of, maturity models, self-assess-
24 ments, and auditing methods for assessing the
25 physical security and cybersecurity of electric
26 utilities;

1 (B) to assist with threat assessment and
2 cybersecurity training for electric utilities;

3 (C) to provide technical assistance for elec-
4 tric utilities subject to the program;

5 (D) to provide training to electric utilities
6 to address and mitigate cybersecurity supply
7 chain management risks;

8 (E) to advance the cybersecurity of third-
9 party vendors in partnerships with electric utili-
10 ties; and

11 (F) to increase opportunities for sharing
12 best practices and data collection within the
13 electric sector.

14 (2) SCOPE.—In carrying out the program under
15 paragraph (1), the Secretary shall—

16 (A) take into consideration—

17 (i) the different sizes of electric utili-
18 ties; and

19 (ii) the regions that electric utilities
20 serve;

21 (B) prioritize electric utilities with fewer
22 available resources due to size or region; and

23 (C) to the maximum extent practicable,
24 use and leverage—

1 (i) existing Department programs;

2 and

3 (ii) existing programs of the Federal

4 agencies determined to be appropriate

5 under paragraph (1).

6 (3) PROTECTION OF INFORMATION.—Informa-

7 tion provided to, or collected by, the Federal Govern-

8 ment pursuant to this subsection—

9 (A) shall be exempt from disclosure under

10 section 552(b)(3) of title 5, United States Code;

11 and

12 (B) shall not be made available by any

13 Federal agency, State, political subdivision of a

14 State, or Tribal authority pursuant to any Fed-

15 eral, State, political subdivision of a State, or

16 Tribal law, respectively, requiring public disclo-

17 sure of information or records.

18 (c) REPORT ON CYBERSECURITY AND DISTRIBUTION

19 SYSTEMS.—

20 (1) IN GENERAL.—Not later than 1 year after

21 the date of enactment of this Act, the Secretary, in

22 consultation with State regulatory authorities, indus-

23 try stakeholders, and any other Federal agencies

24 that the Secretary determines to be appropriate,

25 shall submit to Congress a report that assesses—

1 (A) priorities, policies, procedures, and ac-
2 tions for enhancing the physical security and
3 cybersecurity of electricity distribution systems,
4 including behind-the-meter generation, storage,
5 and load management devices, to address
6 threats to, and vulnerabilities of, electricity dis-
7 tribution systems; and

8 (B) the implementation of the priorities,
9 policies, procedures, and actions assessed under
10 subparagraph (A), including—

11 (i) an estimate of potential costs and
12 benefits of the implementation; and

13 (ii) an assessment of any public-pri-
14 vate cost-sharing opportunities.

15 (2) PROTECTION OF INFORMATION.—Informa-
16 tion provided to, or collected by, the Federal Govern-
17 ment under this subsection—

18 (A) shall be exempt from disclosure under
19 section 552(b)(3) of title 5, United States Code;
20 and

21 (B) shall not be made available by any
22 Federal agency, State, political subdivision of a
23 State, or Tribal authority pursuant to any Fed-
24 eral, State, political subdivision of a State, or

1 Tribal law, respectively, requiring public disclo-
2 sure of information or records.

3 **SEC. 2205. ENHANCED GRID SECURITY.**

4 (a) DEFINITIONS.—In this section:

5 (1) ELECTRIC UTILITY.—The term “electric
6 utility” has the meaning given the term in section
7 3 of the Federal Power Act (16 U.S.C. 796).

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

11 (b) CYBERSECURITY FOR THE ENERGY SECTOR RE-
12 SEARCH, DEVELOPMENT, AND DEMONSTRATION PRO-
13 GRAM.—

14 (1) IN GENERAL.—The Secretary, in consulta-
15 tion with appropriate Federal agencies, the energy
16 sector, the States, and other stakeholders, shall
17 carry out a program—

18 (A) to develop advanced cybersecurity ap-
19 plications and technologies for the energy sec-
20 tor—

21 (i) to identify and mitigate
22 vulnerabilities, including—

23 (I) dependencies on other critical
24 infrastructure; and

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1 (II) impacts from weather and
2 fuel supply; and

3 (ii) to advance the security of field de-
4 vices and third-party control systems, in-
5 cluding—

6 (I) systems for generation, trans-
7 mission, distribution, end use, and
8 market functions;

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

13 (III) forensic analysis of infected
14 systems; and

15 (IV) secure communications;

16 (B) to leverage electric grid architecture as
17 a means to assess risks to the energy sector, in-
18 cluding by implementing an all-hazards ap-
19 proach to communications infrastructure, con-
20 trol systems architecture, and power systems
21 architecture;

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

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

3 (2) AUTHORIZATION OF APPROPRIATIONS.—

4 There is authorized to be appropriated to carry out
5 this subsection \$65,000,000 for each of fiscal years
6 2021 through 2029.

7 (c) ENERGY SECTOR COMPONENT TESTING FOR
8 CYBERRESILIENCE PROGRAM.—

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

11 (A) to establish a cybertesting and mitiga-
12 tion program to identify vulnerabilities of en-
13 ergy sector supply chain products to known
14 threats;

15 (B) to oversee third-party cybertesting;
16 and

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

19 (2) AUTHORIZATION OF APPROPRIATIONS.—

20 There is authorized to be appropriated to carry out
21 this subsection \$15,000,000 for each of fiscal years
22 2021 through 2029.

23 (d) ENERGY SECTOR OPERATIONAL SUPPORT FOR
24 CYBERRESILIENCE PROGRAM.—

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

3 (A) to enhance and periodically test—

4 (i) the emergency response capabilities
5 of the Department; and

6 (ii) the coordination of the Depart-
7 ment with other agencies, the National
8 Laboratories, and private industry;

9 (B) to expand cooperation of the Depart-
10 ment with the intelligence communities for en-
11 ergy sector-related threat collection and anal-
12 ysis;

13 (C) to enhance the tools of the Department
14 and E-ISAC for monitoring the status of the
15 energy sector;

16 (D) to expand industry participation in E-
17 ISAC; and

18 (E) to provide technical assistance to small
19 electric utilities for purposes of assessing
20 cybermaturity level.

21 (2) AUTHORIZATION OF APPROPRIATIONS.—

22 There is authorized to be appropriated to carry out
23 this subsection \$10,000,000 for each of fiscal years
24 2021 through 2029.

1 (e) MODELING AND ASSESSING ENERGY INFRA-
2 STRUCTURE RISK.—

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

7 (2) SECURITY AND RESILIENCY OBJECTIVE.—
8 The objective of the program developed under para-
9 graph (1) is to increase the functional preservation
10 of the electric grid operations or natural gas and oil
11 operations in the face of natural and human-made
12 threats and hazards, including electric magnetic
13 pulse and geomagnetic disturbances.

14 (3) ELIGIBLE ACTIVITIES.—In carrying out the
15 program developed under paragraph (1), the Sec-
16 retary may—

17 (A) develop capabilities to identify
18 vulnerabilities and critical components that pose
19 major risks to grid security if destroyed or im-
20 paired;

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

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

1 (D) conduct exercises and assessments to
2 identify and mitigate vulnerabilities to the elec-
3 tric grid, including providing mitigation rec-
4 ommendations;

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

7 (F) conduct research mitigation and recov-
8 ery solutions for critical components of the elec-
9 tric grid; and

10 (G) provide technical assistance to States
11 and other entities for standards and risk anal-
12 ysis.

13 (4) 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 2021 through 2029.

17 (f) LEVERAGING EXISTING PROGRAMS.—The pro-
18 grams established under this section shall be carried out
19 consistent with—

20 (1) the report of the Department entitled
21 “Roadmap to Achieve Energy Delivery Systems Cy-
22 bersecurity” and dated 2011;

23 (2) existing programs of the Department; and

24 (3) any associated strategic framework that
25 links together academic and National Laboratory re-

1 searchers, electric utilities, manufacturers, and any
2 other relevant private industry organizations, includ-
3 ing the Electricity Sub-sector Coordinating Council.

4 **PART II—GRID MODERNIZATION**

5 **SEC. 2210. GRID STORAGE PROGRAM.**

6 (a) IN GENERAL.—The Secretary shall conduct a
7 program of research, development, and demonstration of
8 electric grid energy storage that addresses the principal
9 challenges identified in the 2013 Department of Energy
10 Strategic Plan for Grid Energy Storage.

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

13 (1) materials, electric thermal, electromechani-
14 cal, and electrochemical systems research;

15 (2) power conversion technologies research;

16 (3) developing—

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

21 (B) validation and testing techniques;

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

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

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

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

11 (8) electricity storage device safety and reli-
12 ability, including potential failure modes, mitigation
13 measures, and operational guidelines;

14 (9) standards for storage device performance,
15 control interface, grid interconnection, and inter-
16 operability; and

17 (10) maintaining a public database of energy
18 storage projects, policies, codes, standards, and reg-
19 ulations.

20 (c) ASSISTANCE TO STATES.—The Secretary may
21 provide technical and financial assistance to States, Indian
22 Tribes, or units of local government to participate in or
23 use research, development, or demonstration of technology
24 developed under this section.

1 (d) AUTHORIZATION OF APPROPRIATIONS.—There is
2 authorized to be appropriated to the Secretary to carry
3 out this section \$50,000,000 for each of fiscal years 2021
4 through 2029.

5 (e) NO EFFECT ON OTHER PROVISIONS OF LAW.—
6 Nothing in this Act or an amendment made by this Act
7 authorizes regulatory actions that would duplicate or con-
8 flict with regulatory requirements, mandatory standards,
9 or related processes under section 215 of the Federal
10 Power Act (16 U.S.C. 824o).

11 (f) USE OF FUNDS.—To the maximum extent prac-
12 ticable, in carrying out this section, the Secretary shall
13 ensure that the use of funds to carry out this section is
14 coordinated among different offices within the Grid Mod-
15 ernization Initiative of the Department and other pro-
16 grams conducting energy storage research.

17 **SEC. 2211. TECHNOLOGY DEMONSTRATION ON THE DIS-**
18 **TRIBUTION SYSTEM.**

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

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

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

7 (2) demonstrate—

8 (A) secure integration and management of
9 two or more energy resources, including distrib-
10 uted energy generation, combined heat and
11 power, micro-grids, energy storage, electric ve-
12 hicles, energy efficiency, demand response, and
13 intelligent loads; and

14 (B) secure integration and interoperability
15 of communications and information tech-
16 nologies; and

17 (3) be subject to the requirements of section
18 545(a) of the Energy Security and Independence Act
19 of 2007 (42 U.S.C. 17155(a)).

20 **SEC. 2212. MICRO-GRID AND HYBRID MICRO-GRID SYSTEMS**
21 **PROGRAM.**

22 (a) DEFINITIONS.—In this section:

23 (1) HYBRID MICRO-GRID SYSTEM.—The term
24 “hybrid micro-grid system” means a stand-alone
25 electrical system that—

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

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

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

9 (3) MICRO-GRID SYSTEM.—The term “micro-
10 grid system” means a standalone electrical system
11 that uses grid-scale energy storage.

12 (4) STRATEGY.—The term “strategy” means
13 the strategy developed pursuant to subsection
14 (b)(2)(B).

15 (b) PROGRAM.—

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

18 (A) hybrid micro-grid systems for isolated
19 communities; and

20 (B) micro-grid systems to increase the re-
21 siliance of critical infrastructure.

22 (2) PHASES.—The program established under
23 paragraph (1) shall be divided into the following
24 phases:

1 (A) Phase I, which shall consist of the de-
2 velopment of a feasibility assessment for—

3 (i) hybrid micro-grid systems in iso-
4 lated communities; and

5 (ii) micro-grid systems to enhance the
6 resilience of critical infrastructure.

7 (B) Phase II, which shall consist of the de-
8 velopment of an implementation strategy, in ac-
9 cordance with paragraph (3), to promote the
10 development of hybrid micro-grid systems for
11 isolated communities, particularly for those
12 communities exposed to extreme weather condi-
13 tions and high energy costs, including elec-
14 tricity, space heating and cooling, and transpor-
15 tation.

16 (C) Phase III, which shall be carried out
17 in parallel with Phase II and consist of the de-
18 velopment of an implementation strategy to
19 promote the development of micro-grid systems
20 that increase the resilience of critical infrastruc-
21 ture.

22 (D) Phase IV, which shall consist of cost-
23 shared demonstration projects, based upon the
24 strategies developed under subparagraph (B)
25 that include the development of physical and cy-

1 bersecurity plans to take appropriate measures
2 to protect and secure the electric grid.

3 (E) Phase V, which shall establish a bene-
4 fits analysis plan to help inform regulators, pol-
5 icymakers, and industry stakeholders about the
6 affordability, environmental and resilience bene-
7 fits associated with Phases II, III, and IV.

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

11 (A) establishing future targets for the eco-
12 nomic displacement of conventional generation
13 using hybrid micro-grid systems, including dis-
14 placement of conventional generation used for
15 electric power generation, heating and cooling,
16 and transportation;

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

20 (C) opportunities for improving the effi-
21 ciency of existing hybrid micro-grid systems;

22 (D) the capacity of the local workforce to
23 operate, maintain, and repair a hybrid micro-
24 grid system;

1 (E) opportunities to develop the capacity of
2 the local workforce to operate, maintain, and
3 repair a hybrid micro-grid system;

4 (F) leveraging existing capacity within
5 local or regional research organizations, such as
6 organizations based at institutions of higher
7 education, to support development of hybrid
8 micro-grid systems, including by testing novel
9 components and systems prior to field deploy-
10 ment;

11 (G) the need for basic infrastructure to de-
12 velop, deploy, and sustain a hybrid micro-grid
13 system;

14 (H) input of traditional knowledge from
15 local leaders of isolated communities in the de-
16 velopment of a hybrid micro-grid system;

17 (I) the impact of hybrid micro-grid systems
18 on defense, homeland security, economic devel-
19 opment, and environmental interests;

20 (J) opportunities to leverage existing inter-
21 agency coordination efforts and recommenda-
22 tions for new interagency coordination efforts to
23 minimize unnecessary overhead, mobilization,
24 and other project costs; and

1 (K) any other criteria the Secretary deter-
2 mines appropriate.

3 (c) COLLABORATION.—The program established
4 under subsection (b)(1) shall be carried out in collabora-
5 tion with relevant stakeholders, including, as appro-
6 priate—

7 (1) States;

8 (2) Indian Tribes;

9 (3) regional entities and regulators;

10 (4) units of local government;

11 (5) institutions of higher education; and

12 (6) private sector entities.

13 (d) REPORT.—Not later than 180 days after the date
14 of enactment of this Act, and annually thereafter until cal-
15 endar year 2029, the Secretary shall submit to the Com-
16 mittee on Energy and Natural Resources of the Senate
17 and the Committee on Energy and Commerce of the
18 House of Representatives a report on the efforts to imple-
19 ment the program established under subsection (b)(1) and
20 the status of the strategy developed under subsection
21 (b)(2)(B).

22 **SEC. 2213. ELECTRIC GRID ARCHITECTURE, SCENARIO DE-**
23 **VELOPMENT, AND MODELING.**

24 (a) GRID ARCHITECTURE AND SCENARIO DEVELOP-
25 MENT.—

1 (1) IN GENERAL.—Subject to paragraph (2),
2 the Secretary shall establish and facilitate a collabo-
3 rative process to develop model grid architecture and
4 a set of future scenarios for the electric grid to ex-
5 amine the impacts of different combinations of re-
6 sources (including different quantities of distributed
7 energy resources and large-scale, central generation)
8 on the electric grid.

9 (2) MARKET STRUCTURE.—The grid architec-
10 ture and scenarios developed under paragraph (1)
11 shall account for differences in market structure, in-
12 cluding an examination of the potential for stranded
13 costs in each type of market structure.

14 (3) FINDINGS.—

15 (A) IN GENERAL.—Based on the findings
16 of grid architecture developed under paragraph
17 (1), the Secretary shall—

18 (i) determine whether any additional
19 standards are necessary to ensure the
20 interoperability of grid systems and associ-
21 ated communications networks; and

22 (ii) if the Secretary makes a deter-
23 mination that additional standards are
24 necessary under subparagraph (A), make
25 recommendations for additional standards,

1 including, as may be appropriate, to the
2 Electric Reliability Organization under sec-
3 tion 215 of the Federal Power Act (16
4 U.S.C. 824o).

5 (B) CONSIDERATION.—The Electric Reli-
6 ability Organization shall not be under any obli-
7 gation to establish any process to consider the
8 recommendations described in subparagraph
9 (A)(ii).

10 (b) MODELING.—Subject to subsection (c), the Sec-
11 retary shall—

12 (1) conduct modeling based on the scenarios de-
13 veloped under subsection (a); and

14 (2) analyze and evaluate the technical and fi-
15 nancial impacts of the models to assist States, utili-
16 ties, and other stakeholders in—

17 (A) enhancing strategic planning efforts;

18 (B) avoiding stranded costs; and

19 (C) maximizing the cost-effectiveness of fu-
20 ture grid-related investments.

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

25 (1) the National Laboratories;

- 1 (2) States;
- 2 (3) State regulatory authorities;
- 3 (4) transmission organizations;
- 4 (5) representatives of all sectors of the electric
- 5 power industry;
- 6 (6) academic institutions;
- 7 (7) independent research institutes; and
- 8 (8) other entities.

9 (d) EFFECT.—Nothing in this section grants any per-
10 son a right to receive or review confidential, proprietary,
11 or otherwise protected information concerning grid archi-
12 tecture or scenarios.

13 **SEC. 2214. VOLUNTARY MODEL PATHWAYS.**

14 (a) ESTABLISHMENT OF VOLUNTARY MODEL PATH-
15 WAYS.—

16 (1) ESTABLISHMENT.—Not later than 90 days
17 after the date of enactment of this Act, the Sec-
18 retary, in consultation with the steering committee
19 established under paragraph (3), shall initiate the
20 development of voluntary model pathways for mod-
21 ernizing the electric grid through a collaborative,
22 public-private effort that—

23 (A) produces illustrative policy pathways
24 encompassing a diverse range of technologies

1 that can be adapted for State and regional ap-
2 plications by regulators and policymakers;

3 (B) facilitates the modernization of the
4 electric grid and associated communications
5 networks to achieve the objectives described in
6 paragraph (2);

7 (C) ensures a reliable, resilient, affordable,
8 safe, and secure electric grid; and

9 (D) acknowledges and accounts for dif-
10 ferent priorities, electric systems, and rate
11 structures across States and regions.

12 (2) OBJECTIVES.—The pathways established
13 under paragraph (1) shall facilitate achievement of
14 as many of the following objectives as practicable:

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

17 (B) Data visualization.

18 (C) Advanced monitoring and control of
19 the advanced electric grid.

20 (D) Enhanced certainty of policies for in-
21 vestment in the electric grid.

22 (E) Increased innovation.

23 (F) Greater consumer empowerment.

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

- 1 (H) Improved—
2 (i) integration of distributed energy
3 resources;
4 (ii) interoperability of the electric sys-
5 tem; and
6 (iii) predictive modeling and capacity
7 forecasting.
8 (I) Reduced cost of service for consumers.
9 (J) Diversification of generation sources.

10 (3) STEERING COMMITTEE.—Not later than 90
11 days after the date of enactment of this Act, the
12 Secretary shall establish a steering committee to
13 help develop the pathways under paragraph (1), to
14 be composed of members appointed by the Secretary,
15 consisting of persons with appropriate expertise rep-
16 resenting a diverse range of interests in the public,
17 private, and academic sectors, including representa-
18 tives of—

- 19 (A) the Federal Energy Regulatory Com-
20 mission;
21 (B) the National Laboratories;
22 (C) States;
23 (D) State regulatory authorities;
24 (E) transmission organizations;

- 1 (F) representatives of all sectors of the
2 electric power industry;
- 3 (G) institutions of higher education;
- 4 (H) independent research institutes; and
- 5 (I) other entities.

6 (b) TECHNICAL ASSISTANCE.—The Secretary may
7 provide technical assistance to States, Indian Tribes, or
8 units of local government to adopt or implement one or
9 more elements of the pathways developed under subsection
10 (a)(1), including on a pilot basis.

11 **SEC. 2215. PERFORMANCE METRICS FOR ELECTRICITY IN-**
12 **FRASTRUCTURE PROVIDERS.**

13 (a) IN GENERAL.—Not later than 2 years after the
14 date of enactment of this Act, the Secretary, in consulta-
15 tion with the steering committee established under section
16 2214(a)(3), shall submit to the Committee on Energy and
17 Natural Resources of the Senate and the Committee on
18 Energy and Commerce of the House of Representatives
19 a report that includes—

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

22 (2) a description of the projected range of
23 measurable costs and benefits associated with the
24 changes evaluated under the scenarios developed
25 under section 2213.

1 (b) CONSIDERATIONS FOR DEVELOPMENT OF
2 METRICS.—In developing metrics for the evaluation and
3 projections under subsection (a), the Secretary shall con-
4 sider—

5 (1) standard methodologies for calculating im-
6 provements or deteriorations in the performance
7 metrics, such as reliability, grid efficiency, power
8 quality, consumer satisfaction, sustainability, and fi-
9 nancial incentives;

10 (2) standard methodologies for calculating po-
11 tential costs and measurable benefits value to rate-
12 payers, applying the performance metrics developed
13 under paragraph (1);

14 (3) identification of tools, resources, and de-
15 ployment models that may enable improved perform-
16 ance through the adoption of emerging, commer-
17 cially available or advanced grid technologies or solu-
18 tions, including—

19 (A) multicustomer micro-grids;

20 (B) distributed energy resources;

21 (C) energy storage;

22 (D) electric vehicles;

23 (E) electric vehicle charging infrastructure;

24 (F) integrated information and commu-
25 nications systems;

1 (G) transactive energy systems; and

2 (H) advanced demand management sys-
3 tems; and

4 (4) the role of States and local regulatory au-
5 thorities in enabling a robust future electric grid to
6 ensure that—

7 (A) electric utilities remain financially via-
8 ble;

9 (B) electric utilities make the needed in-
10 vestments that ensure a reliable, secure, and re-
11 siliant grid; and

12 (C) costs incurred to transform to an inte-
13 grated grid are allocated and recovered respon-
14 sibly, efficiently, and equitably.

15 **SEC. 2216. VOLUNTARY STATE, REGIONAL, AND LOCAL**
16 **ELECTRICITY DISTRIBUTION PLANNING.**

17 (a) IN GENERAL.—On the request of a State, re-
18 gional organization, or electric utility, the Secretary shall
19 provide assistance to States, regional organizations, and
20 electric utilities to facilitate the development of State, re-
21 gional, and local electricity distribution plans by—

22 (1) conducting a resource assessment and anal-
23 ysis of future demand and distribution requirements;
24 and

1 (2) developing open source tools for State, re-
2 gional, and local planning and operations.

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

5 (1) the evaluation of the physical security, cy-
6 bersecurity, and associated communications needs of
7 an advanced distribution management system and
8 the integration of distributed energy resources; and

9 (2) advanced use of grid architecture to analyze
10 risks in an all-hazards approach that includes com-
11 munications infrastructure, control systems architec-
12 ture, and power systems architecture.

13 (c) DESIGNATION.—The information collected for the
14 assessment and analysis under subsection (a)(1)—

15 (1) shall be considered to be critical electric in-
16 frastructure information under section 215A of the
17 Federal Power Act (16 U.S.C. 824o–1); and

18 (2) shall only be released in compliance with
19 regulations implementing that section.

20 (d) TECHNICAL ASSISTANCE.—For the purpose of
21 assisting in the development of State and regional elec-
22 tricity distribution plans, the Secretary shall provide tech-
23 nical assistance to—

24 (1) States;

25 (2) regional reliability entities; and

1 (3) other distribution asset owners and opera-
2 tors.

3 (e) WITHDRAWAL.—A State or any entity that has
4 requested technical assistance under this section may
5 withdraw the request for technical assistance at any time,
6 and on such withdrawal, the Secretary shall terminate all
7 assistance efforts.

8 (f) EFFECT.—Nothing in this section authorizes the
9 Secretary to require any State, regional organization, re-
10 gional reliability entity, asset owner, or asset operator to
11 adopt any model, tool, plan, analysis, or assessment.

12 **SEC. 2217. AUTHORIZATION OF APPROPRIATIONS.**

13 There is authorized to be appropriated to the Sec-
14 retary to carry out sections 2211 through 2216
15 \$200,000,000 for each of fiscal years 2021 through 2029.

16 **Subtitle C—Workforce**
17 **Development**

18 **SEC. 2301. DEFINITIONS.**

19 In this subtitle:

20 (1) WIOA TERMS.—The terms “community-
21 based organization”, “economic development agen-
22 cy”, “recognized postsecondary credential”, and
23 “State” have the meanings given the terms in sec-
24 tion 3 of the Workforce Innovation and Opportunity
25 Act (29 U.S.C. 3102).

1 (2) APPRENTICESHIP PROGRAM.—The term
2 “apprenticeship program” means an apprenticeship
3 registered under the Act of August 16, 1937 (com-
4 monly known as the “National Apprenticeship Act”)
5 (50 Stat. 664, chapter 663; 29 U.S.C. 50 et seq.),
6 including, as in effect on December 30, 2019, any
7 requirement, standard, or rule promulgated under
8 that Act.

9 (3) AREA CAREER AND TECHNICAL EDUCATION
10 SCHOOL.—The term “area career and technical edu-
11 cation school” has the meaning given the term in
12 section 3 of the Carl D. Perkins Career and Tech-
13 nical Education Act of 2006 (20 U.S.C. 2302).

14 (4) BOARD.—The term “Board” means the
15 21st Century Energy Workforce Advisory Board es-
16 tablished under section 2304(a).

17 (5) COVERED FACILITY OF THE NATIONAL NU-
18 CLEAR SECURITY ADMINISTRATION.—The term
19 “covered facility of the National Nuclear Security
20 Administration” means a national security labora-
21 tory or a nuclear weapons production facility (as
22 those terms are defined in section 4002 of the Atom-
23 ic Energy Defense Act (50 U.S.C. 2501)).

24 (6) ELIGIBLE SPONSOR.—The term “eligible
25 sponsor” means a public organization or an organi-

1 zation described in section 501(c) of the Internal
2 Revenue Code of 1986 and exempt from tax under
3 section 501(a) of that Code, that—

4 (A) with respect to an apprenticeship pro-
5 gram, administers such program through a
6 partnership that may include—

7 (i) a business;

8 (ii) an employer or industry associa-
9 tion;

10 (iii) a labor-management organization;

11 (iv) a local workforce development
12 board or State workforce development
13 board;

14 (v) a 2- or 4-year institution of higher
15 education that offers an educational pro-
16 gram leading to an associate's or bach-
17 elor's degree in conjunction with a certifi-
18 cate of completion of apprenticeship;

19 (vi) the Armed Forces (including the
20 National Guard and Reserves);

21 (vii) a community-based organization;

22 (viii) a labor organization with signifi-
23 cant energy experience; or

24 (ix) an economic development agency;

25 and

1 (B) with respect to a preapprenticeship
2 program, is a local educational agency, a sec-
3 ondary school, an area career and technical
4 education school, a State workforce develop-
5 ment board, a local workforce development
6 board, a labor organization, or a community-
7 based organization, that administers such pro-
8 gram with any required coordination and nec-
9 essary approvals from the Secretary of Labor or
10 a State department of labor.

11 (7) INDIAN TRIBE.—The term “Indian tribe”
12 has the meaning given the term in section 4 of the
13 Indian Self-Determination and Education Assistance
14 Act (25 U.S.C. 5304).

15 (8) INSTITUTION OF HIGHER EDUCATION.—The
16 term “institution of higher education” has the
17 meaning given the term in section 101 and subpara-
18 graphs (A) and (B) of section 102(a)(1) of the
19 Higher Education Act of 1965 (20 U.S.C. 1001,
20 1002(a)(1)).

21 (9) LABOR ORGANIZATION.—The term “labor
22 organization” has the meaning given the term in
23 section 2 of the National Labor Relations Act (29
24 U.S.C. 152).

1 standards related to an apprenticeship pro-
2 gram and reviewed and approved annually
3 by sponsors of the apprenticeship program
4 within the documented partnership that
5 will prepare participants by teaching the
6 skills and competencies needed to enter 1
7 or more apprenticeship programs.

8 (ii) Hands-on training and theoretical
9 education for participants that does not
10 displace a paid employee.

11 (iii) A formal agreement with a spon-
12 sor of an apprenticeship program that
13 would enable participants who successfully
14 complete the preapprenticeship program—

15 (I) to enter directly into the ap-
16 prenticeship program if a place in the
17 program is available and if the partic-
18 ipant meets the qualifications of the
19 apprenticeship program; and

20 (II) to earn credits towards the
21 apprenticeship program.

22 (14) SECONDARY SCHOOL.—The term “sec-
23 ondary school” has the meaning given the term in
24 section 8101 of the Elementary and Secondary Edu-
25 cation Act of 1965 (20 U.S.C. 7801).

1 (15) STATE WORKFORCE DEVELOPMENT
2 BOARD.—The term “State workforce development
3 board” has the meaning given the term “State
4 board” in section 3 of the Workforce Innovation and
5 Opportunity Act (29 U.S.C. 3102).

6 (16) TRIBAL ORGANIZATION.—The term “tribal
7 organization” has the meaning given the term in
8 section 3765 of title 38, United States Code.

9 **SEC. 2302. ADDRESSING INSUFFICIENT COMPENSATION OF**
10 **EMPLOYEES AND OTHER PERSONNEL OF THE**
11 **FEDERAL ENERGY REGULATORY COMMIS-**
12 **SION.**

13 (a) IN GENERAL.—Section 401 of the Department of
14 Energy Organization Act (42 U.S.C. 7171) is amended
15 by adding at the end the following:

16 “(k) ADDRESSING INSUFFICIENT COMPENSATION OF
17 EMPLOYEES AND OTHER PERSONNEL OF THE COMMIS-
18 SION.—

19 “(1) IN GENERAL.—Notwithstanding any other
20 provision of law, if the Chairman publicly certifies
21 that compensation for a category of employees or
22 other personnel of the Commission is insufficient to
23 retain or attract employees and other personnel to
24 allow the Commission to carry out the functions of
25 the Commission in a timely, efficient, and effective

1 manner, the Chairman may fix the compensation for
2 the category of employees or other personnel without
3 regard to chapter 51 and subchapter III of chapter
4 53 of title 5, United States Code, or any other civil
5 service law.

6 “(2) CERTIFICATION REQUIREMENTS.—A cer-
7 tification issued under paragraph (1) shall—

8 “(A) apply with respect to a category of
9 employees or other personnel responsible for
10 conducting work of a scientific, technological,
11 engineering, or mathematical nature;

12 “(B) specify a maximum amount of rea-
13 sonable compensation for the category of em-
14 ployees or other personnel;

15 “(C) be valid for a 5-year period beginning
16 on the date on which the certification is issued;

17 “(D) be no broader than necessary to
18 achieve the objective of retaining or attracting
19 employees and other personnel to allow the
20 Commission to carry out the functions of the
21 Commission in a timely, efficient, and effective
22 manner; and

23 “(E) include an explanation for why the
24 other approaches available to the Chairman for

1 retaining and attracting employees and other
2 personnel are inadequate.

3 “(3) RENEWAL.—

4 “(A) IN GENERAL.—Not later than 90
5 days before the date of expiration of a certifi-
6 cation issued under paragraph (1), the Chair-
7 man shall determine whether the certification
8 should be renewed for a subsequent 5-year pe-
9 riod.

10 “(B) REQUIREMENT.—If the Chairman de-
11 termines that a certification should be renewed
12 under subparagraph (A), the Chairman may
13 renew the certification, subject to the certifi-
14 cation requirements under paragraph (2) that
15 were applicable to the initial certification.

16 “(4) NEW HIRES.—

17 “(A) IN GENERAL.—An employee or other
18 personnel that is a member of a category of em-
19 ployees or other personnel that would have been
20 covered by a certification issued under para-
21 graph (1), but was hired during a period in
22 which the certification has expired and has not
23 been renewed under paragraph (3) shall not be
24 eligible for compensation at the level that would
25 have applied to the employee or other personnel

1 if the certification had been in effect on the
2 date on which the employee or other personnel
3 was hired.

4 “(B) COMPENSATION OF NEW HIRES ON
5 RENEWAL.—On renewal of a certification under
6 paragraph (3), the Chairman may fix the com-
7 pensation of the employees or other personnel
8 described in subparagraph (A) at the level es-
9 tablished for the category of employees or other
10 personnel in the certification.

11 “(5) RETENTION OF LEVEL OF FIXED COM-
12 PENSATION.—A category of employees or other per-
13 sonnel, the compensation of which was fixed by the
14 Chairman in accordance with paragraph (1), may, at
15 the discretion of the Chairman, have the level of
16 fixed compensation for the category of employees or
17 other personnel retained, regardless of whether a
18 certification described under that paragraph is in ef-
19 fect with respect to the compensation of the category
20 of employees or other personnel.

21 “(6) CONSULTATION REQUIRED.—The Chair-
22 man shall consult with the Director of the Office of
23 Personnel Management in implementing this sub-
24 section, including in the determination of the

1 amount of compensation with respect to each cat-
2 egory of employees or other personnel.

3 “(7) EXPERTS AND CONSULTANTS.—

4 “(A) IN GENERAL.—Subject to subpara-
5 graph (B), the Chairman may—

6 “(i) obtain the services of experts and
7 consultants in accordance with section
8 3109 of title 5, United States Code;

9 “(ii) compensate those experts and
10 consultants for each day (including travel
11 time) at rates not in excess of the rate of
12 pay for level IV of the Executive Schedule
13 under section 5315 of that title; and

14 “(iii) pay to the experts and consult-
15 ants serving away from the homes or reg-
16 ular places of business of the experts and
17 consultants travel expenses and per diem
18 in lieu of subsistence at rates authorized
19 by sections 5702 and 5703 of that title for
20 persons in Government service employed
21 intermittently.

22 “(B) LIMITATIONS.—The Chairman
23 shall—

24 “(i) to the maximum extent prac-
25 ticable, limit the use of experts and con-

1 sultants pursuant to subparagraph (A);
2 and

3 “(ii) ensure that the employment con-
4 tract of each expert and consultant em-
5 ployed pursuant to subparagraph (A) is
6 subject to renewal not less frequently than
7 annually.”.

8 (b) REPORTS.—

9 (1) IN GENERAL.—Not later than 1 year after
10 the date of enactment of this Act, and every 2 years
11 thereafter for 10 years, the Chairman of the Federal
12 Energy Regulatory Commission shall submit to the
13 Committee on Energy and Commerce of the House
14 of Representatives and the Committee on Energy
15 and Natural Resources of the Senate a report on in-
16 formation relating to hiring, vacancies, and com-
17 pensation at the Federal Energy Regulatory Com-
18 mission.

19 (2) INCLUSIONS.—Each report under para-
20 graph (1) shall include—

21 (A) an analysis of any trends with respect
22 to hiring, vacancies, and compensation at the
23 Federal Energy Regulatory Commission; and

24 (B) a description of the efforts to retain
25 and attract employees or other personnel re-

1 sponsible for conducting work of a scientific,
2 technological, engineering, or mathematical na-
3 ture at the Federal Energy Regulatory Com-
4 mission.

5 (c) APPLICABILITY.—The amendment made by sub-
6 section (a) shall apply beginning on the date that is 30
7 days after the date of enactment of this Act.

8 **SEC. 2303. REPORT ON THE AUTHORITY OF THE SEC-**
9 **RETARY TO IMPLEMENT FLEXIBLE COM-**
10 **PENSATION MODELS.**

11 Not later than 180 days after the date of enactment
12 of this Act, the Secretary shall submit to Congress a re-
13 port examining the full scope of the hiring authority made
14 available to the Secretary by the Office of Personnel Man-
15 agement to implement flexible compensation models, in-
16 cluding pay for performance and pay banding, throughout
17 the Department, including at the National Laboratories,
18 for the purposes of hiring, recruiting, and retaining em-
19 ployees responsible for conducting work of a scientific,
20 technological, engineering, or mathematical nature.

21 **SEC. 2304. 21ST CENTURY ENERGY WORKFORCE ADVISORY**
22 **BOARD.**

23 (a) ESTABLISHMENT.—The Secretary shall establish
24 a board, to be known as the “21st Century Energy Work-
25 force Advisory Board”, to develop a strategy for the De-

1 partment that, with respect to the role of the Department
2 in the support and development of a skilled energy work-
3 force—

4 (1) meets the current and future industry and
5 labor needs of the energy sector;

6 (2) provides opportunities for students to be-
7 come qualified for placement in traditional energy
8 sector and clean energy sector jobs;

9 (3) identifies areas in which the Department
10 can effectively utilize the technical expertise of the
11 Department to support the workforce activities of
12 other Federal agencies;

13 (4) strengthens and engages the workforce
14 training programs of the Department and the Na-
15 tional Laboratories in carrying out the Minorities in
16 Energy Initiative of the Department and other De-
17 partment workforce priorities;

18 (5) develops plans to support and retrain dis-
19 placed and unemployed energy sector workers; and

20 (6) prioritizes education and job training for
21 underrepresented groups, including racial and ethnic
22 minorities, Indian tribes, women, veterans, and
23 socioeconomically disadvantaged individuals.

24 (b) MEMBERSHIP.—

1 (1) IN GENERAL.—The Board shall be com-
2 posed of not fewer than 10 and not more than 15
3 members, with the initial members of the Board to
4 be appointed by the Secretary not later than 1 year
5 after the date of enactment of this Act.

6 (2) REQUIREMENT.—The Board shall include
7 not fewer than 1 representative of a labor organiza-
8 tion with significant energy experience who has been
9 nominated by a national labor federation.

10 (3) QUALIFICATIONS.—Each individual ap-
11 pointed to the Board under paragraph (1) shall have
12 expertise in—

13 (A) the field of economics or workforce de-
14 velopment;

15 (B) relevant traditional energy industries
16 or clean energy industries;

17 (C) secondary or postsecondary education;

18 (D) energy workforce development or ap-
19 prenticeship programs of States or units of
20 local government;

21 (E) relevant organized labor organizations;

22 or

23 (F) bringing underrepresented groups, in-
24 cluding racial and ethnic minorities, women,

1 veterans, and socioeconomically disadvantaged
2 individuals, into the workforce.

3 (4) LIMITATION.—No individual shall be ap-
4 pointed to the Board who is an employee or a board
5 member of an entity applying for a grant under sec-
6 tion 2305 or 2306.

7 (c) ADVISORY BOARD REVIEW AND RECOMMENDA-
8 TIONS.—

9 (1) DETERMINATION BY BOARD.—In developing
10 the strategy required under subsection (a), the
11 Board shall—

12 (A) determine whether there are opportuni-
13 ties to more effectively and efficiently use the
14 capabilities of the Department in the develop-
15 ment of a skilled energy workforce;

16 (B) identify ways in which the Department
17 could work with other relevant Federal agen-
18 cies, States, units of local government, institu-
19 tions of higher education, labor organizations,
20 Indian tribes and tribal organizations, and in-
21 dustry in the development of a skilled energy
22 workforce;

23 (C) identify ways in which the Department
24 and National Laboratories can—

1 (i) increase outreach to minority-serv-
2 ing institutions; and

3 (ii) make resources available to in-
4 crease the number of skilled minorities and
5 women trained to go into the energy- and
6 manufacturing-related sectors;

7 (iii) increase outreach to displaced
8 and unemployed energy sector workers;
9 and

10 (iv) make resources available to pro-
11 vide training to displaced and unemployed
12 energy sector workers to reenter the en-
13 ergy workforce; and

14 (D)(i) identify the energy sectors in great-
15 est need of workforce training; and

16 (ii) in consultation with the Secretary of
17 Labor, develop guidelines for the skills nec-
18 essary to develop a workforce trained to work in
19 those energy sectors.

20 (2) REQUIRED ANALYSIS.—In developing the
21 strategy required under subsection (a), the Board
22 shall analyze the effectiveness of—

23 (A) existing Department-directed support;
24 and

1 (B) developing energy workforce training
2 programs.

3 (3) REPORT.—

4 (A) IN GENERAL.—Not later than 1 year
5 after the date on which the Board is established
6 under this section, and biennially thereafter
7 until the date on which the Board is terminated
8 under subsection (g), the Board shall submit to
9 the Secretary a report containing, with respect
10 to the strategy required under subsection (a)—

11 (i) the findings of the Board; and

12 (ii) the proposed energy workforce
13 strategy of the Board.

14 (B) RESPONSE OF THE SECRETARY.—Not
15 later than 60 days after the date on which a re-
16 port is submitted to the Secretary under sub-
17 paragraph (A), the Secretary shall—

18 (i) submit to the Board a response to
19 the report that—

20 (I) describes whether the Sec-
21 retary approves or disapproves of each
22 recommendation of the Board under
23 subparagraph (A); and

24 (II) if the Secretary approves of
25 a recommendation, provides an imple-

1 mentation plan for the recommenda-
2 tion; and

3 (ii) submit to Congress—

4 (I) the report of the Board under
5 subparagraph (A); and

6 (II) the response of the Secretary
7 under clause (i).

8 (C) PUBLIC AVAILABILITY OF REPORT.—

9 (i) IN GENERAL.—The Board shall
10 make each report under subparagraph (A)
11 available to the public on the earlier of—

12 (I) the date on which the Board
13 receives the response of the Secretary
14 under subparagraph (B)(i); and

15 (II) the date that is 90 days
16 after the date on which the Board
17 submitted the report to the Secretary.

18 (ii) REQUIREMENT.—If the Board has
19 received a response to a report from the
20 Secretary under subparagraph (B)(i), the
21 Board shall make that response publicly
22 available with the applicable report.

23 (d) ENERGY JOBS SURVEY AND ANALYSIS.—

1 (1) IN GENERAL.—The Secretary, acting
2 through the Administrator of the Energy Informa-
3 tion Administration, shall—

4 (A) conduct a voluntary survey of employ-
5 ers in the energy, energy efficiency, and motor
6 vehicle sectors of the economy of the United
7 States; and

8 (B) perform an analysis of the employment
9 figures and demographics in those sectors, in-
10 cluding the number of personnel in each sector
11 who devote a substantial portion of working
12 hours, as determined by the Secretary, to com-
13 pliance matters.

14 (2) METHODOLOGY.—In conducting the survey
15 and analysis under paragraph (1), the Secretary
16 shall employ a methodology that—

17 (A) was approved in 2016 by the Office of
18 Management and Budget for use in the docu-
19 ment entitled “OMB Control Number 1910–
20 5179”;

21 (B) uses a representative, stratified sam-
22 pling of businesses in the United States; and

23 (C) is designed to elicit a comparable num-
24 ber of responses from businesses in each State
25 and with the same North American Industry

1 Classification System codes as were received for
2 the 2016 and 2017 reports entitled “U.S. En-
3 ergy and Employment Report”.

4 (3) CONSULTATION.—In conducting the survey
5 and analysis under paragraph (1), the Secretary
6 shall consult with key stakeholders, including—

7 (A) as the Secretary determines to be ap-
8 propriate, the heads of relevant Federal agen-
9 cies and offices, including—

10 (i) the Secretary of Commerce;

11 (ii) the Secretary of Transportation;

12 (iii) the Director of the Bureau of the
13 Census;

14 (iv) the Commissioner of the Bureau
15 of Labor Statistics; and

16 (v) the Administrator of the Environ-
17 mental Protection Agency;

18 (B) officials of State agencies responsible
19 for maintaining State employment data;

20 (C) the State Energy Advisory Board es-
21 tablished by section 365(g) of the Energy Pol-
22 icy and Conservation Act (42 U.S.C. 6325(g));

23 (D) energy industry trade associations;
24 and

1 (i) make publicly available on the
2 website of the Department a report, to be
3 entitled the “U.S. Energy and Employ-
4 ment Report”, describing the employment
5 figures and demographics in the energy,
6 energy efficiency, and motor vehicle sectors
7 of the United States based on the survey
8 and analysis conducted under subsection
9 (d); and

10 (ii) subject to the requirements of the
11 Confidential Information Protection and
12 Statistical Efficiency Act of 2002 (44
13 U.S.C. 3501 note; Public Law 107–347),
14 make the data collected under subsection
15 (d) publicly available on the website of the
16 Department.

17 (B) CONTENTS.—

18 (i) IN GENERAL.—The report under
19 subparagraph (A) shall include employ-
20 ment figures and demographic data for—

21 (I) the energy sector of the econ-
22 omy of the United States, including—

23 (aa) the electric power gen-
24 eration and fuels sectors; and

1 (bb) the transmission, stor-
2 age, and distribution sectors;

3 (II) the energy efficiency sector
4 of the economy of the United States;
5 and

6 (III) the motor vehicle sector of
7 the economy of the United States.

8 (ii) INCLUSION.—With respect to each
9 sector described in clause (i), the report
10 under subparagraph (A) shall include em-
11 ployment figures and demographic data
12 sorted by—

13 (I) each technology, subtech-
14 nology, and fuel type of those sectors;
15 and

16 (II) subject to the requirements
17 of the Confidential Information Pro-
18 tection and Statistical Efficiency Act
19 of 2002 (44 U.S.C. 3501 note; Public
20 Law 107–347)—

21 (aa) each State;

22 (bb) each territory of the
23 United States;

24 (cc) the District of Colum-
25 bia; and

1 (dd) to the maximum extent
2 practicable, each county (or
3 equivalent jurisdiction) in the
4 United States.

5 (f) OUTREACH TO MINORITY-SERVING INSTITU-
6 TIONS, VETERANS, AND DISPLACED AND UNEMPLOYED
7 ENERGY WORKERS.—In developing the strategy under
8 subsection (a), the Board shall—

9 (1) give special consideration to increasing out-
10 reach to minority-serving institutions, veterans, and
11 displaced and unemployed energy workers;

12 (2) make resources available to—

13 (A) minority-serving institutions, with the
14 objective of increasing the number of skilled mi-
15 norities and women trained to go into the en-
16 ergy and manufacturing sectors;

17 (B) institutions that serve veterans, with
18 the objective of increasing the number veterans
19 in the energy industry by ensuring that vet-
20 erans have the credentials and training nec-
21 essary to secure careers in the energy industry;
22 and

23 (C) institutions that serve displaced and
24 unemployed energy workers to increase the

1 number of individuals trained for jobs in the
2 energy industry;

3 (3) encourage the energy industry to improve
4 the opportunities for students of minority-serving in-
5 stitutions, veterans, and displaced and unemployed
6 energy workers to participate in internships,
7 preapprenticeships, and cooperative work-study pro-
8 grams in the energy industry; and

9 (4) work with the National Laboratories to in-
10 crease the participation of underrepresented groups,
11 veterans, and displaced and unemployed energy
12 workers in internships, fellowships, training pro-
13 grams, and employment at the National Labora-
14 tories.

15 (g) TERM.—

16 (1) IN GENERAL.—Subject to paragraph (2),
17 the Board shall terminate on September 30, 2025.

18 (2) EXTENSIONS.—The Secretary may renew
19 the Board for 1 or more 5-year periods by submit-
20 ting, not later than the date described in subsection
21 (e)(1), a report described in that subsection that
22 contains a determination by the Secretary that the
23 Board should be renewed.

1 **SEC. 2305. NATIONAL LABORATORY JOBS ACCESS PILOT**
2 **PROGRAM.**

3 (a) IN GENERAL.—Not later than 1 year after the
4 date of enactment of this Act, the Secretary, in consulta-
5 tion with the Secretary of Labor, shall establish a pilot
6 program to award, on a competitive basis, grants to eligi-
7 ble entities described in subsection (c) for the Federal
8 share of the costs of technical, skills-based
9 preapprenticeship and apprenticeship programs that pro-
10 vide employer-driven or recognized postsecondary creden-
11 tials.

12 (b) REQUIREMENTS.—A program funded by a grant
13 awarded under this section shall develop and deliver cus-
14 tomized and competency-based training that—

15 (1) is focused on skills and qualifications need-
16 ed to meet the immediate and on-going needs of tra-
17 ditional and emerging technician positions (including
18 machinists and cyber security technicians) at the
19 National Laboratories and covered facilities of the
20 National Nuclear Security Administration;

21 (2) creates an apprenticeship program or
22 preapprenticeship partnership with a National Lab-
23 oratory or covered facility of the National Nuclear
24 Security Administration; and

25 (3) creates an apprenticeship program or
26 preapprenticeship program with the Secretary of

1 Labor or a State department of labor in coordina-
2 tion with a National Laboratory or covered facility
3 of the National Nuclear Security Administration.

4 (c) ELIGIBLE ENTITIES.—To be eligible to receive a
5 grant under this section, an entity shall be an eligible
6 sponsor that—

7 (1) demonstrates experience in implementing
8 and operating apprenticeship programs or
9 preapprenticeship programs;

10 (2)(A) has a relationship with a National Lab-
11 oratory or covered facility of the National Nuclear
12 Security Administration;

13 (B) has knowledge of technician workforce
14 needs of such laboratory or facility and the as-
15 sociated security requirements of such labora-
16 tory or facility; and

17 (C) is eligible to enter into an agreement
18 with such laboratory or facility that would be
19 paid for in part or entirely from grant funds re-
20 ceived under this section;

21 (3) demonstrates the ability to recruit and sup-
22 port individuals who plan to work in the energy in-
23 dustry in the successful completion of relevant job
24 training and education programs;

1 (4) provides students who complete a program
2 funded by a grant awarded under this section with
3 a recognized postsecondary credential; and

4 (5) demonstrates successful outcomes con-
5 necting graduates of preapprenticeship or appren-
6 ticeship programs to careers relevant to such pro-
7 grams.

8 (d) APPLICATIONS.—An eligible entity desiring a
9 grant under this section shall submit to the Secretary an
10 application at such time, in such manner, and containing
11 such information as the Secretary may require.

12 (e) PRIORITY.—In selecting eligible entities to receive
13 grants under this section, the Secretary shall prioritize ap-
14 plicants that—

15 (1) house the preapprenticeship or apprentice-
16 ship programs in an institution of higher education
17 that includes basic science and math education in
18 the curriculum of the institution of higher education;

19 (2) work with the Secretary of Defense and the
20 Secretary of Veterans Affairs or veteran service or-
21 ganizations recognized by the Secretary of Veterans
22 Affairs under section 5902 of title 38, United States
23 Code, to transition members of the Armed Forces
24 and veterans to careers in the energy sector;

25 (3) work with—

- 1 (A) Indian tribes;
- 2 (B) tribal organizations; and
- 3 (C) Native American veterans (as defined
4 in section 3765 of title 38, United States
5 Code), including veterans who are descendants
6 of Natives (as defined in section 3 of the Alaska
7 Native Claims Settlement Act (43 U.S.C.
8 1602));
- 9 (4) apply as a State or regional consortia to le-
10 verage best practices already available in the State
11 or region in which an institution of higher education
12 is located;
- 13 (5) have a State-supported entity included in
14 the consortium applying for the grant;
- 15 (6) provide support services and career coach-
16 ing;
- 17 (7) provide introductory energy workforce devel-
18 opment training;
- 19 (8) work with minority-serving institutions to
20 provide job training to increase the number of
21 skilled minorities and women in the energy sector; or
- 22 (9) provide job training for displaced and un-
23 employed workers in the energy sector.

1 (f) ADDITIONAL CONSIDERATION.—In making grants
2 under this section, the Secretary shall consider regional
3 diversity.

4 (g) LIMITATION ON APPLICATIONS.—An eligible enti-
5 ty may not submit, either individually or as part of a joint
6 application, more than 1 application for a grant under this
7 section during any 1 fiscal year.

8 (h) LIMITATIONS ON AMOUNT OF GRANT.—The
9 amount of an individual grant for any 24-month period
10 shall not exceed \$500,000.

11 (i) FEDERAL SHARE.—The Federal share of the cost
12 of a preapprenticeship or apprenticeship program carried
13 out using a grant under this section shall be not greater
14 than 50 percent.

15 (j) REPORT.—Not later than 1 year after the date
16 on which the first grant is awarded under this section,
17 and annually thereafter for 5 years, the Secretary shall
18 submit to Congress and make publicly available on the
19 website of the Department a report on the pilot program
20 established under this section, including a description of—

21 (1) the entities receiving grants;

22 (2) the activities carried out using the grants;

23 (3) best practices used to leverage the invest-
24 ment of the Federal Government; and

1 (4) an assessment of the results achieved by the
2 pilot program, including the rate of employment at
3 the National Laboratories for participants after
4 completing a preapprenticeship or apprenticeship
5 program carried out using a grant awarded under
6 this section.

7 (k) AUTHORIZATION OF APPROPRIATIONS.—There is
8 authorized to be appropriated to carry out this section
9 \$5,000,000 for each of fiscal years 2021 through 2025.

10 **SEC. 2306. CLEAN ENERGY WORKFORCE PILOT PROGRAM.**

11 (a) DEFINITIONS.—In this section:

12 (1) ELIGIBLE ENTITY.—The term “eligible enti-
13 ty” means a business, labor organization, or labor
14 management organization that—

15 (A)(i) is directly involved with energy effi-
16 ciency, renewable energy technology, or reduc-
17 tion in greenhouse gas emissions, as determined
18 by the Secretary of Labor in consultation with
19 the Secretary; or

20 (ii) works on behalf of a business or
21 labor management organization that is di-
22 rectly involved with energy efficiency, re-
23 newable energy technology, or reduction in
24 greenhouse gas emissions, as determined

1 by the Secretary of Labor in consultation
2 with the Secretary; or

3 (B) provides services related to—

4 (i) energy efficiency and renewable en-
5 ergy technology deployment and mainte-
6 nance;

7 (ii) grid modernization; or

8 (iii) reduction in greenhouse gas emis-
9 sions through the use of other low-carbon
10 technologies.

11 (2) LABOR MANAGEMENT ORGANIZATION.—The
12 term “labor management organization” includes a
13 nonprofit organization or qualified youth or con-
14 servation corps that provides training to individuals
15 to work for an eligible entity that is a business, or
16 works on behalf of an eligible entity that is a busi-
17 ness.

18 (3) PILOT PROGRAM.—The term “pilot pro-
19 gram” means the pilot program established under
20 subsection (b).

21 (b) ESTABLISHMENT.—The Secretary of Labor, in
22 consultation with the Secretary and in accordance with
23 section 169(b) of the Workforce Innovation and Oppor-
24 tunity Act (29 U.S.C. 3224(b)), shall establish a pilot pro-

1 gram to provide competitively awarded cost-shared grants
2 to eligible entities to pay for—

3 (1) on-the-job training of a new or existing em-
4 ployee to work—

5 (A) in renewable energy, energy efficiency,
6 or grid modernization; or

7 (B) on the reduction of greenhouse gas
8 emissions; or

9 (2) preapprenticeship programs that provide a
10 direct pathway to a career working—

11 (A) in renewable energy, energy efficiency,
12 or grid modernization; or

13 (B) on the reduction of greenhouse gas
14 emissions.

15 (c) GRANTS.—

16 (1) IN GENERAL.—An eligible entity desiring a
17 grant under the pilot program shall submit to the
18 Secretary of Labor an application at such time, in
19 such manner, and containing such information as
20 the Secretary of Labor may require.

21 (2) PRIORITY FOR TARGETED COMMUNITIES.—

22 In providing grants under the pilot program, the
23 Secretary of Labor, in consultation with the Sec-
24 retary shall give priority to an eligible entity that—

25 (A) recruits employees—

1 (i) from the 1 or more communities
2 that are served by the eligible entity; and

3 (ii) that are minorities, women, vet-
4 erans, or individuals who are transitioning
5 from fossil energy sector jobs;

6 (B) provides trainees with the opportunity
7 to obtain real-world experience;

8 (C) has fewer than 100 employees; and

9 (D) in the case of a preapprenticeship pro-
10 gram, demonstrates—

11 (i) a multi-year record of—

12 (I) successfully recruiting minori-
13 ties, women, and veterans for train-
14 ing; and

15 (II) supporting those individuals
16 in the successful completion of the
17 preapprenticeship program; and

18 (ii) a successful multi-year record of
19 placing the majority of the graduates of
20 the preapprenticeship program into ap-
21 prenticeship programs.

22 (3) USE OF GRANT FOR FEDERAL SHARE.—

23 (A) IN GENERAL.—An eligible entity shall
24 use a grant received under the pilot program to
25 pay the Federal share of the cost of—

1 (i) providing on-the-job training for
2 an employee, in accordance with subpara-
3 graph (B); or

4 (ii) in the case of a preapprenticeship
5 program—

6 (I) recruiting minorities, women,
7 and veterans for training;

8 (II) supporting those individuals
9 in the successful completion of the
10 preapprenticeship program; and

11 (III) carrying out any other ac-
12 tivity of the preapprenticeship pro-
13 gram, as determined to be appropriate
14 by the Secretary of Labor, in con-
15 sultation with the Secretary.

16 (B) FEDERAL SHARE AMOUNT.—The Fed-
17 eral share described in subparagraph (A) shall
18 not exceed—

19 (i) for activities described in clause (i)
20 of that subparagraph—

21 (I) in the case of an eligible enti-
22 ty with 20 or fewer employees, 45 per-
23 cent of the cost of on-the-job-training
24 for an employee;

1 (II) in the case of an eligible en-
2 tity with not fewer than 21 employees
3 and not more than 99 employees, 37.5
4 percent of the cost of on-the-job-train-
5 ing for an employee; and

6 (III) in the case of an eligible en-
7 tity with not fewer than 100 employ-
8 ees, 25 percent of the cost of on-the-
9 job-training for an employee; and

10 (ii) for activities described in clause
11 (ii) of that subparagraph, 50 percent.

12 (4) EMPLOYER PAYMENT OF NON-FEDERAL
13 SHARE.—

14 (A) IN GENERAL.—The non-Federal share
15 of the cost of providing on-the-job training for
16 an employee under a grant received under the
17 pilot program shall be paid in cash or in kind
18 by the employer of the employee receiving the
19 training.

20 (B) INCLUSIONS.—The non-Federal share
21 described in subparagraph (A)(i) may include
22 the amount of wages paid by the employer to
23 the employee during the time that the employee
24 is receiving on-the-job training, as fairly evalu-
25 ated by the Secretary of Labor.

1 (5) GRANT AMOUNT.—An eligible entity may
 2 not receive more than \$100,000 per fiscal year in
 3 grant funds under the pilot program.

4 (d) AUTHORIZATION OF APPROPRIATIONS.—There is
 5 authorized to be appropriated to carry out this section
 6 \$15,000,000 for each of fiscal years 2021 through 2023.

7 **TITLE III—CODE MAINTENANCE**

8 **SEC. 3001. REPEAL OF OFF-HIGHWAY MOTOR VEHICLES** 9 **STUDY.**

10 (a) REPEAL.—Part I of title III of the Energy Policy
 11 and Conservation Act (42 U.S.C. 6373) is repealed.

12 (b) CONFORMING AMENDMENT.—The table of con-
 13 tents for the Energy Policy and Conservation Act (Public
 14 Law 94–163; 89 Stat. 871) is amended—

15 (1) by striking the item relating to part I of
 16 title III; and

17 (2) by striking the item relating to section 385.

18 **SEC. 3002. REPEAL OF METHANOL STUDY.**

19 Section 400EE of the Energy Policy and Conserva-
 20 tion Act (42 U.S.C. 6374d) is amended—

21 (1) by striking subsection (a); and

22 (2) by redesignating subsections (b) and (c) as
 23 subsections (a) and (b), respectively.

1 **SEC. 3003. REPEAL OF STATE UTILITY REGULATORY AS-**
2 **SISTANCE.**

3 (a) REPEAL.—Section 207 of the Energy Conserva-
4 tion and Production Act (42 U.S.C. 6807) is repealed.

5 (b) CONFORMING AMENDMENT.—The table of con-
6 tents for the Energy Conservation and Production Act
7 (Public Law 94–385; 90 Stat. 1126) is amended by strik-
8 ing the item relating to section 207.

9 **SEC. 3004. REPEAL OF AUTHORIZATION OF APPROPRIA-**
10 **TIONS PROVISION.**

11 (a) REPEAL.—Section 208 of the Energy Conserva-
12 tion and Production Act (42 U.S.C. 6808) is repealed.

13 (b) CONFORMING AMENDMENT.—The table of con-
14 tents for the Energy Conservation and Production Act
15 (Public Law 94–385; 90 Stat. 1126) is amended by strik-
16 ing the item relating to section 208.

17 **SEC. 3005. REPEAL OF RESIDENTIAL ENERGY EFFICIENCY**
18 **STANDARDS STUDY.**

19 (a) REPEAL.—Section 253 of the National Energy
20 Conservation Policy Act (42 U.S.C. 8232) is repealed.

21 (b) CONFORMING AMENDMENT.—The table of con-
22 tents for the National Energy Conservation Policy Act
23 (Public Law 95–619; 92 Stat. 3206) is amended by strik-
24 ing the item relating to section 253.

1 **SEC. 3006. REPEAL OF WEATHERIZATION STUDY.**

2 (a) REPEAL.—Section 254 of the National Energy
3 Conservation Policy Act (42 U.S.C. 8233) is repealed.

4 (b) CONFORMING AMENDMENT.—The table of con-
5 tents for the National Energy Conservation Policy Act
6 (Public Law 95–619; 92 Stat. 3206) is amended by strik-
7 ing the item relating to section 254.

8 **SEC. 3007. REPEAL OF REPORT TO CONGRESS.**

9 (a) REPEAL.—Section 273 of the National Energy
10 Conservation Policy Act (42 U.S.C. 8236b) is repealed.

11 (b) CONFORMING AMENDMENT.—The table of con-
12 tents for the National Energy Conservation Policy Act
13 (Public Law 95–619; 92 Stat. 3206) is amended by strik-
14 ing the item relating to section 273.

15 **SEC. 3008. REPEAL OF SURVEY OF ENERGY SAVING POTEN-**
16 **TIAL.**

17 (a) REPEAL.—Section 550 of the National Energy
18 Conservation Policy Act (42 U.S.C. 8258b) is repealed.

19 (b) CONFORMING AMENDMENTS.—

20 (1) The table of contents for the National En-
21 ergy Conservation Policy Act (Public Law 95–619;
22 92 Stat. 3206; 106 Stat. 2851) is amended by strik-
23 ing the item relating to section 550.

24 (2) Section 543(d)(2) of the National Energy
25 Conservation Policy Act (42 U.S.C. 8253(d)(2)) is
26 amended by striking “, incorporating any relevant

1 information obtained from the survey conducted pur-
2 suant to section 550”.

3 **SEC. 3009. REPEAL OF REPORT BY GENERAL SERVICES AD-**
4 **MINISTRATION.**

5 (a) REPEAL.—Section 154 of the Energy Policy Act
6 of 1992 (42 U.S.C. 8262a) is repealed.

7 (b) CONFORMING AMENDMENTS.—

8 (1) The table of contents for the Energy Policy
9 Act of 1992 (Public Law 102–486; 106 Stat. 2776)
10 is amended by striking the item relating to section
11 154.

12 (2) Section 159 of the Energy Policy Act of
13 1992 (42 U.S.C. 8262e) is amended by striking sub-
14 section (c).

15 **SEC. 3010. REPEAL OF INTERGOVERNMENTAL ENERGY**
16 **MANAGEMENT PLANNING AND COORDINA-**
17 **TION WORKSHOPS.**

18 (a) REPEAL.—Section 156 of the Energy Policy Act
19 of 1992 (42 U.S.C. 8262b) is repealed.

20 (b) CONFORMING AMENDMENT.—The table of con-
21 tents for the Energy Policy Act of 1992 (Public Law 102–
22 486; 106 Stat. 2776) is amended by striking the item re-
23 lating to section 156.

1 **SEC. 3011. REPEAL OF INSPECTOR GENERAL AUDIT SUR-**
2 **VEY AND PRESIDENT'S COUNCIL ON INTEG-**
3 **RITY AND EFFICIENCY REPORT TO CON-**
4 **GRESS.**

5 (a) REPEAL.—Section 160 of the Energy Policy Act
6 of 1992 (42 U.S.C. 8262f) is amended by striking the sec-
7 tion designation and heading and all that follows through
8 “(c) INSPECTOR GENERAL REVIEW.—Each Inspector
9 General” and inserting the following:

10 **“SEC. 160. INSPECTOR GENERAL REVIEW.**

11 “Each Inspector General”.

12 (b) CONFORMING AMENDMENT.—The table of con-
13 tents for the Energy Policy Act of 1992 (Public Law 102–
14 486; 106 Stat. 2776) is amended by striking the item re-
15 lating to section 160 and inserting the following:

“Sec. 160. Inspector General review.”.

16 **SEC. 3012. REPEAL OF PROCUREMENT AND IDENTIFICA-**
17 **TION OF ENERGY EFFICIENT PRODUCTS PRO-**
18 **GRAM.**

19 (a) REPEAL.—Section 161 of the Energy Policy Act
20 of 1992 (42 U.S.C. 8262g) is repealed.

21 (b) CONFORMING AMENDMENTS.—

22 (1) The table of contents for the Energy Policy
23 Act of 1992 (Public Law 102–486; 106 Stat. 2776)
24 is amended by striking the item relating to section
25 161.

1 (2) Section 548(b) of the National Energy Con-
2 servation Policy Act (42 U.S.C. 8258(b)) (as amend-
3 ed by section 1033(a)) is amended—

4 (A) in paragraph (3), by inserting “and”
5 after the semicolon at the end;

6 (B) by striking paragraph (4); and

7 (C) by redesignating paragraph (5) as
8 paragraph (4).

9 **SEC. 3013. REPEAL OF PHOTOVOLTAIC ENERGY PROGRAM.**

10 (a) REPEAL.—Part 4 of title V of the National En-
11 ergy Conservation Policy Act (42 U.S.C. 8271 et seq.) is
12 repealed.

13 (b) CONFORMING AMENDMENT.—The table of con-
14 tents for the National Energy Conservation Policy Act
15 (Public Law 95–619; 92 Stat. 3206) is amended—

16 (1) by striking the item relating to part 4 of
17 title V; and

18 (2) by striking the items relating to sections
19 561 through 570.

20 **SEC. 3014. REPEAL OF NATIONAL ACTION PLAN FOR DE-**
21 **MAND RESPONSE.**

22 (a) REPEAL.—Part 5 of title V of the National En-
23 ergy Conservation Policy Act (42 U.S.C. 8279) is re-
24 pealed.

1 (b) CONFORMING AMENDMENT.—The table of con-
2 tents for the National Energy Conservation Policy Act
3 (Public Law 95–619; 92 Stat. 3206; 121 Stat. 1665) is
4 amended—

5 (1) by striking the item relating to part 5 of
6 title V; and

7 (2) by striking the item relating to section 571.

8 **SEC. 3015. REPEAL OF ENERGY AUDITOR TRAINING AND**
9 **CERTIFICATION.**

10 (a) REPEAL.—Subtitle F of title V of the Energy Se-
11 curity Act (42 U.S.C. 8285 et seq.) is repealed.

12 (b) CONFORMING AMENDMENT.—The table of con-
13 tents for the Energy Security Act (Public Law 96–294;
14 94 Stat. 611) is amended—

15 (1) by striking the item relating to subtitle F
16 of title V; and

17 (2) by striking the items relating to sections
18 581 through 584.

19 **SEC. 3016. REPEAL OF NATIONAL COAL POLICY STUDY.**

20 (a) REPEAL.—Section 741 of the Powerplant and In-
21 dustrial Fuel Use Act of 1978 (42 U.S.C. 8451) is re-
22 pealed.

23 (b) CONFORMING AMENDMENT.—The table of con-
24 tents for the Powerplant and Industrial Fuel Use Act of

1 1978 (Public Law 95–620; 92 Stat. 3289) is amended by
2 striking the item relating to section 741.

3 **SEC. 3017. REPEAL OF STUDY ON COMPLIANCE PROBLEM**
4 **OF SMALL ELECTRIC UTILITY SYSTEMS.**

5 (a) REPEAL.—Section 744 of the Powerplant and In-
6 dustrial Fuel Use Act of 1978 (42 U.S.C. 8454) is re-
7 pealed.

8 (b) CONFORMING AMENDMENT.—The table of con-
9 tents for the Powerplant and Industrial Fuel Use Act of
10 1978 (Public Law 95–620; 92 Stat. 3289) is amended by
11 striking the item relating to section 744.

12 **SEC. 3018. REPEAL OF STUDY OF SOCIOECONOMIC IM-**
13 **PACTS OF INCREASED COAL PRODUCTION**
14 **AND OTHER ENERGY DEVELOPMENT.**

15 (a) REPEAL.—Section 746 of the Powerplant and In-
16 dustrial Fuel Use Act of 1978 (42 U.S.C. 8456) is re-
17 pealed.

18 (b) CONFORMING AMENDMENT.—The table of con-
19 tents for the Powerplant and Industrial Fuel Use Act of
20 1978 (Public Law 95–620; 92 Stat. 3289) is amended by
21 striking the item relating to section 746.

1 **SEC. 3019. REPEAL OF STUDY OF THE USE OF PETROLEUM**
2 **AND NATURAL GAS IN COMBUSTORS.**

3 (a) REPEAL.—Section 747 of the Powerplant and In-
4 dustrial Fuel Use Act of 1978 (42 U.S.C. 8457) is re-
5 pealed.

6 (b) CONFORMING AMENDMENT.—The table of con-
7 tents for the Powerplant and Industrial Fuel Use Act of
8 1978 (Public Law 95–620; 92 Stat. 3289) is amended by
9 striking the item relating to section 747.

10 **SEC. 3020. REPEAL OF AUTHORIZATION OF APPROPRIA-**
11 **TIONS.**

12 (a) REPEAL.—Subtitle F of title VII of the Power-
13 plant and Industrial Fuel Use Act of 1978 (42 U.S.C.
14 8461) is repealed.

15 (b) CONFORMING AMENDMENT.—The table of con-
16 tents for the Powerplant and Industrial Fuel Use Act of
17 1978 (Public Law 95–620; 92 Stat. 3289) is amended—

18 (1) by striking the item relating to subtitle F
19 of title VII; and

20 (2) by striking the item relating to section 751.

21 **SEC. 3021. REPEAL OF SUBMISSION OF REPORTS.**

22 (a) REPEAL.—Section 807 of the Powerplant and In-
23 dustrial Fuel Use Act of 1978 (42 U.S.C. 8483) is re-
24 pealed.

25 (b) CONFORMING AMENDMENT.—The table of con-
26 tents for the Powerplant and Industrial Fuel Use Act of

1 1978 (Public Law 95–620; 92 Stat. 3289) is amended by
2 striking the item relating to section 807.

3 **SEC. 3022. REPEAL OF ELECTRIC UTILITY CONSERVATION**
4 **PLAN.**

5 (a) REPEAL.—Section 808 of the Powerplant and In-
6 dustrial Fuel Use Act of 1978 (42 U.S.C. 8484) is re-
7 pealed.

8 (b) CONFORMING AMENDMENTS.—

9 (1) TABLE OF CONTENTS.—The table of con-
10 tents for the Powerplant and Industrial Fuel Use
11 Act of 1978 (Public Law 95–620; 92 Stat. 3289) is
12 amended by striking the item relating to section
13 808.

14 (2) REPORT ON IMPLEMENTATION.—Section
15 712 of the Powerplant and Industrial Fuel Use Act
16 of 1978 (42 U.S.C. 8422) is amended—

17 (A) by striking “(a) GENERALLY.—”; and

18 (B) by striking subsection (b).

19 **SEC. 3023. EMERGENCY ENERGY CONSERVATION REPEALS.**

20 (a) REPEALS.—

21 (1) Section 201 of the Emergency Energy Con-
22 servation Act of 1979 (42 U.S.C. 8501) is amended
23 by striking the section designation and heading and
24 all that follows through “(b) PURPOSES.—The pur-
25 poses” and inserting the following:

1 **“SEC. 201. PURPOSES.**

2 “The purposes”.

3 (2) Part B of title II of the Emergency Energy
4 Conservation Act of 1979 (42 U.S.C. 8521 et seq.)
5 is repealed.

6 (3) Section 241 of the Emergency Energy Con-
7 servation Act of 1979 (42 U.S.C. 8531) is repealed.

8 (b) CONFORMING AMENDMENTS.—

9 (1) The table of contents for the Emergency
10 Energy Conservation Act of 1979 (Public Law 96–
11 102; 93 Stat. 749) is amended—

12 (A) by striking the item relating to section
13 201 and inserting the following:

“Sec. 201. Purposes.”;

14 (B) by striking the item relating to part B
15 of title II; and

16 (C) by striking the items relating to sec-
17 tions 221, 222, and 241.

18 (2) Section 251(b) of the Emergency Energy
19 Conservation Act of 1979 (42 U.S.C. 8541(b)) is
20 amended—

21 (A) by striking “or 221” each place it ap-
22 pears; and

23 (B) by striking “(as the case may be)”.

1 **SEC. 3024. ENERGY SECURITY ACT REPEALS.**

2 (a) BIOMASS ENERGY DEVELOPMENT PLANS.—Sub-
3 title A of title II of the Energy Security Act (42 U.S.C.
4 8811 et seq.) is repealed.

5 (b) MUNICIPAL WASTE BIOMASS ENERGY.—Subtitle
6 B of title II of the Energy Security Act (42 U.S.C. 8831
7 et seq.) is repealed.

8 (c) USE OF GASOHOL IN FEDERAL MOTOR VEHI-
9 CLES.—Section 271 of the Energy Security Act (42
10 U.S.C. 8871) is repealed.

11 (d) CONFORMING AMENDMENTS.—

12 (1) The table of contents for the Energy Secu-
13 rity Act (Public Law 96–294; 94 Stat. 611) is
14 amended—

15 (A) by striking the items relating to sub-
16 title A of title II;

17 (B) by striking the items relating to sub-
18 title B of title II;

19 (C) by striking the item relating to section
20 204 and inserting the following:

“Sec. 204. Funding.”;

21 and

22 (D) by striking the item relating to section
23 271.

1 (2) Section 203 of the Biomass Energy and Al-
2 cohol Fuels Act of 1980 (42 U.S.C. 8802) is amend-
3 ed—

4 (A) by striking paragraph (16); and

5 (B) by redesignating paragraphs (17)
6 through (19) as paragraphs (16) through (18),
7 respectively.

8 (3) Section 204 of the Energy Security Act (42
9 U.S.C. 8803) is amended—

10 (A) in the section heading, by striking
11 “FOR SUBTITLES A AND B”; and

12 (B) in subsection (a)—

13 (i) in paragraph (1), by adding “and”
14 after the semicolon at the end;

15 (ii) in paragraph (2), by striking “;
16 and” at the end and inserting a period;
17 and

18 (iii) by striking paragraph (3).

19 **SEC. 3025. NUCLEAR SAFETY RESEARCH, DEVELOPMENT,**
20 **AND DEMONSTRATION ACT OF 1980 REPEALS.**

21 Sections 5 and 6 of the Nuclear Safety Research, De-
22 velopment, and Demonstration Act of 1980 (42 U.S.C.
23 9704, 9705) are repealed.

1 **SEC. 3026. REPEAL OF RENEWABLE ENERGY AND ENERGY**
2 **EFFICIENCY TECHNOLOGY COMPETITIVE-**
3 **NESS ACT OF 1989.**

4 (a) REPEAL.—The Renewable Energy and Energy
5 Efficiency Technology Competitiveness Act of 1989 (42
6 U.S.C. 12001 et seq.) is repealed.

7 (b) CONFORMING AMENDMENTS.—

8 (1) Section 6(b)(3) of the Federal Nonnuclear
9 Energy Research and Development Act of 1974 (42
10 U.S.C. 5905(b)(3)) (as amended by section
11 1205(c)(2)) is amended—

12 (A) in subparagraph (P), by adding “and”
13 after the semicolon;

14 (B) by striking subparagraph (Q); and

15 (C) by redesignating subparagraph (R) as
16 subparagraph (Q).

17 (2) Section 1204 of the Energy Policy Act of
18 1992 (42 U.S.C. 13313) is amended—

19 (A) in subsection (b), in the matter pre-
20 ceding paragraph (1), in the first sentence, by
21 striking “, in consultation with” and all that
22 follows through “under section 6 of the Renew-
23 able Energy and Energy Efficiency Technology
24 Competitiveness Act of 1989,”; and

25 (B) in subsection (c), by striking “, in con-
26 sultation with the Advisory Committee,”.

1 **SEC. 3027. REPEAL OF HYDROGEN RESEARCH, DEVELOP-**
2 **MENT, AND DEMONSTRATION PROGRAM.**

3 The Spark M. Matsunaga Hydrogen Research, Devel-
4 opment, and Demonstration Act of 1990 (42 U.S.C.
5 12401 et seq.) is repealed.

6 **SEC. 3028. REPEAL OF STUDY ON ALTERNATIVE FUEL USE**
7 **IN NONROAD VEHICLES AND ENGINES.**

8 (a) IN GENERAL.—Section 412 of the Energy Policy
9 Act of 1992 (42 U.S.C. 13238) is repealed.

10 (b) CONFORMING AMENDMENT.—The table of con-
11 tents for the Energy Policy Act of 1992 (Public Law 102–
12 486; 106 Stat. 2776) is amended by striking the item re-
13 lating to section 412.

14 **SEC. 3029. REPEAL OF LOW INTEREST LOAN PROGRAM FOR**
15 **SMALL BUSINESS FLEET PURCHASES.**

16 (a) IN GENERAL.—Section 414 of the Energy Policy
17 Act of 1992 (42 U.S.C. 13239) is repealed.

18 (b) CONFORMING AMENDMENT.—The table of con-
19 tents for the Energy Policy Act of 1992 (Public Law 102–
20 486; 106 Stat. 2776) is amended by striking the item re-
21 lating to section 414.

22 **SEC. 3030. REPEAL OF TECHNICAL AND POLICY ANALYSIS**
23 **FOR REPLACEMENT FUEL DEMAND AND SUP-**
24 **PLY INFORMATION.**

25 (a) IN GENERAL.—Section 506 of the Energy Policy
26 Act of 1992 (42 U.S.C. 13256) is repealed.

1 (b) CONFORMING AMENDMENTS.—

2 (1) The table of contents for the Energy Policy
3 Act of 1992 (Public Law 102–486; 106 Stat. 2776)
4 is amended by striking the item relating to section
5 506.

6 (2) Section 507(m) of the Energy Policy Act of
7 1992 (42 U.S.C. 13257(m)) is amended by striking
8 “and section 506”.

9 **SEC. 3031. REPEAL OF 1992 REPORT ON CLIMATE CHANGE.**

10 (a) IN GENERAL.—Section 1601 of the Energy Policy
11 Act of 1992 (42 U.S.C. 13381) is repealed.

12 (b) CONFORMING AMENDMENTS.—

13 (1) The table of contents for the Energy Policy
14 Act of 1992 (Public Law 102–486; 106 Stat. 2776)
15 is amended by striking the item relating to section
16 1601.

17 (2) Section 1602(a) of the Energy Policy Act of
18 1992 (42 U.S.C. 13382(a)) is amended, in the mat-
19 ter preceding paragraph (1), in the third sentence,
20 by striking “the report required under section 1601
21 and”.

22 **SEC. 3032. REPEAL OF DIRECTOR OF CLIMATE PROTECTOR**
23 **ESTABLISHMENT.**

24 (a) IN GENERAL.—Section 1603 of the Energy Policy
25 Act of 1992 (42 U.S.C. 13383) is repealed.

1 (b) CONFORMING AMENDMENT.—The table of con-
2 tents for the Energy Policy Act of 1992 (Public Law 102–
3 486; 106 Stat. 2776) is amended by striking the item re-
4 lating to section 1603.

5 **SEC. 3033. REPEAL OF 1994 REPORT ON GLOBAL CLIMATE**
6 **CHANGE EMISSIONS.**

7 (a) IN GENERAL.—Section 1604 of the Energy Policy
8 Act of 1992 (42 U.S.C. 13384) is repealed.

9 (b) CONFORMING AMENDMENT.—The table of con-
10 tents for the Energy Policy Act of 1992 (Public Law 102–
11 486; 106 Stat. 2776) is amended by striking the item re-
12 lating to section 1604.

13 **SEC. 3034. REPEAL OF TELECOMMUTING STUDY.**

14 (a) IN GENERAL.—Section 2028 of the Energy Policy
15 Act of 1992 (42 U.S.C. 13438) is repealed.

16 (b) CONFORMING AMENDMENT.—The table of con-
17 tents for the Energy Policy Act of 1992 (Public Law 102–
18 486; 106 Stat. 2776) is amended by striking the item re-
19 lating to section 2028.

20 **SEC. 3035. REPEAL OF ADVANCED BUILDINGS FOR 2005**
21 **PROGRAM.**

22 (a) IN GENERAL.—Section 2104 of the Energy Policy
23 Act of 1992 (42 U.S.C. 13454) is repealed.

24 (b) CONFORMING AMENDMENT.—The table of con-
25 tents for the Energy Policy Act of 1992 (Public Law 102–

1 486; 106 Stat. 2776) is amended by striking the item re-
2 lating to section 2104.

3 **SEC. 3036. REPEAL OF ENERGY RESEARCH, DEVELOPMENT,**
4 **DEMONSTRATION, AND COMMERCIAL APPLI-**
5 **CATION ADVISORY BOARD.**

6 (a) IN GENERAL.—Section 2302 of the Energy Policy
7 Act of 1992 (42 U.S.C. 13522) is repealed.

8 (b) CONFORMING AMENDMENTS.—

9 (1) The table of contents for the Energy Policy
10 Act of 1992 (Public Law 102–486; 106 Stat. 2776)
11 is amended by striking the item relating to section
12 2302.

13 (2) Section 6 of the Federal Nonnuclear Energy
14 Research and Development Act of 1974 (42 U.S.C.
15 5905) is amended—

16 (A) in subsection (a), in the matter pre-
17 ceding paragraph (1), in the first sentence, by
18 striking “, in consultation with the Advisory
19 Board established under section 2302 of the
20 Energy Policy Act of 1992,”;

21 (B) in subsection (b)—

22 (i) in paragraph (1), in the first sen-
23 tence, by striking “, in consultation with
24 the Advisory Board established under sec-

1 tion 2302 of the Energy Policy Act of
2 1992,”; and

3 (ii) in paragraph (2), in the second
4 sentence, by striking “, in consultation
5 with the Advisory Board established under
6 section 2302 of the Energy Policy Act of
7 1992,”; and

8 (C) in subsection (c), in the first sentence,
9 by striking “, in consultation with the Advisory
10 Board established under section 2302 of the
11 Energy Policy Act of 1992,”.

12 (3) Section 2011(c) of the Energy Policy Act of
13 1992 (42 U.S.C. 13411(c)) is amended, in the sec-
14 ond sentence, by striking “, and with the Advisory
15 Board established under section 2302”.

16 (4) Section 2304 of the Energy Policy Act of
17 1992 (42 U.S.C. 13523), is amended—

18 (A) in subsection (a), by striking “, in con-
19 sultation with the Advisory Board established
20 under section 2302,”; and

21 (B) in subsection (c), in the matter pre-
22 ceding paragraph (1), in the first sentence, by
23 striking “, with the advice of the Advisory
24 Board established under section 2302 of this
25 Act,”.

1 **SEC. 3037. REPEAL OF STUDY ON USE OF ENERGY FUTURES**
2 **FOR FUEL PURCHASE.**

3 (a) IN GENERAL.—Section 3014 of the Energy Policy
4 Act of 1992 (42 U.S.C. 13552) is repealed.

5 (b) CONFORMING AMENDMENT.—The table of con-
6 tents for the Energy Policy Act of 1992 (Public Law 102–
7 486; 106 Stat. 2776) is amended by striking the item re-
8 lating to section 3014.

9 **SEC. 3038. REPEAL OF ENERGY SUBSIDY STUDY.**

10 (a) IN GENERAL.—Section 3015 of the Energy Policy
11 Act of 1992 (42 U.S.C. 13553) is repealed.

12 (b) CONFORMING AMENDMENT.—The table of con-
13 tents for the Energy Policy Act of 1992 (Public Law 102–
14 486; 106 Stat. 2776) is amended by striking the item re-
15 lating to section 3015.

16 **SEC. 3039. ELIMINATION AND CONSOLIDATION OF CERTAIN**
17 **AMERICA COMPETES PROGRAMS.**

18 (a) ELIMINATION OF PROGRAM AUTHORITIES.—

19 (1) NUCLEAR SCIENCE TALENT EXPANSION
20 PROGRAM FOR INSTITUTIONS OF HIGHER EDU-
21 CATION.—Section 5004 of the America COMPETES
22 Act (42 U.S.C. 16532) is repealed.

23 (2) HYDROCARBON SYSTEMS SCIENCE TALENT
24 EXPANSION PROGRAM FOR INSTITUTIONS OF HIGH-
25 ER EDUCATION.—Section 5005 of the America
26 COMPETES Act (42 U.S.C. 16533) is amended—

1 (A) by striking subsection (e); and

2 (B) in subsection (f)—

3 (i) by striking paragraph (2);

4 (ii) by striking the subsection designa-

5 tion and heading and all that follows

6 through “There are” in paragraph (1) and

7 inserting the following:

8 “(e) AUTHORIZATION OF APPROPRIATIONS.—There
9 are”; and

10 (iii) by redesignating subparagraphs

11 (A) through (F) as paragraphs (1) through

12 (6), respectively, and indenting appro-

13 priately.

14 (3) DISCOVERY SCIENCE AND ENGINEERING IN-

15 NOVATION INSTITUTES.—Section 5008 of the Amer-

16 ica COMPETES Act (42 U.S.C. 16535) is repealed.

17 (4) ELIMINATION OF DUPLICATIVE AUTHORITY

18 FOR EDUCATION PROGRAMS.—Sections 3181 and

19 3185 of the Department of Energy Science Edu-

20 cation Enhancement Act (42 U.S.C. 7381l, 42

21 U.S.C. 7381n) are repealed.

22 (5) MENTORING PROGRAM.—Section 3195 of

23 the Department of Energy Science Education En-

24 hancement Act (42 U.S.C. 7381r) is repealed.

25 (b) REPEAL OF AUTHORIZATIONS.—

1 (1) DEPARTMENT OF ENERGY EARLY CAREER
2 AWARDS FOR SCIENCE, ENGINEERING, AND MATHE-
3 MATICS RESEARCHERS.—Section 5006 of the Amer-
4 ica COMPETES Act (42 U.S.C. 16534) is amended
5 by striking subsection (h).

6 (2) PROTECTING AMERICA’S COMPETITIVE
7 EDGE (PACE) GRADUATE FELLOWSHIP PROGRAM.—
8 Section 5009 of the America COMPETES Act (42
9 U.S.C. 16536) is amended by striking subsection (f).

10 (3) DISTINGUISHED SCIENTIST PROGRAM.—
11 Section 5011 of the America COMPETES Act (42
12 U.S.C. 16537) is amended by striking subsection (j).

13 (c) CONSOLIDATION OF DUPLICATIVE PROGRAM AU-
14 THORITIES.—

15 (1) UNIVERSITY NUCLEAR SCIENCE AND ENGI-
16 NEERING SUPPORT.—Section 954 of the Energy Pol-
17 icy Act of 2005 (42 U.S.C. 16274) (as amended by
18 section 1504(a)) is amended in subsection (a)—

19 (A) in paragraph (1), by inserting “nuclear
20 chemistry,” after “nuclear engineering;” and

21 (B) in paragraph (2)—

22 (i) by redesignating subparagraphs
23 (C) through (E) as subparagraphs (D)
24 through (F), respectively; and

1 (ii) by inserting after subparagraph
2 (B) the following:

3 “(C) award grants, not to exceed 5 years
4 in duration, to institutions of higher education
5 with existing academic degree programs in nu-
6 clear sciences and related fields—

7 “(i) to increase the number of grad-
8 uates in nuclear science and related fields;

9 “(ii) to enhance the teaching and re-
10 search of advanced nuclear technologies;

11 “(iii) to undertake collaboration with
12 industry and National Laboratories; and

13 “(iv) to bolster or sustain nuclear in-
14 frastructure and research facilities of insti-
15 tutions of higher education, such as re-
16 search and training reactors and labora-
17 tories;”.

18 (2) CONSOLIDATION OF DEPARTMENT OF EN-
19 ERGY EARLY CAREER AWARDS FOR SCIENCE, ENGI-
20 NEERING, AND MATHEMATICS RESEARCHERS PRO-
21 GRAM AND DISTINGUISHED SCIENTIST PROGRAM.—

22 (A) FUNDING.—Section 971(c) of the En-
23 ergy Policy Act of 2005 (42 U.S.C. 16311(c))
24 is amended by adding at the end the following:

1 “(8) For the Department of Energy early ca-
2 reer awards for science, engineering, and mathe-
3 matics researchers program under section 5006 of
4 the America COMPETES Act (42 U.S.C. 16534)
5 and the distinguished scientist program under sec-
6 tion 5011 of that Act (42 U.S.C. 16537),
7 \$150,000,000 for each of fiscal years 2018 through
8 2022, of which not more than 65 percent of the
9 amount made available for a fiscal year under this
10 paragraph may be used to carry out section 5006 or
11 5011 of that Act.”.

12 (B) DEPARTMENT OF ENERGY EARLY CA-
13 REER AWARDS FOR SCIENCE, ENGINEERING,
14 AND MATHEMATICS RESEARCHERS.—Section
15 5006 of the America COMPETES Act (42
16 U.S.C. 16534) is amended—

17 (i) in subsection (b)(1)—

18 (I) in the matter preceding sub-
19 paragraph (A)—

20 (aa) by inserting “average”
21 before “amount”; and

22 (bb) by inserting “for each
23 year” before “shall”;

551

1 (II) in subparagraph (A), by
2 striking “\$80,000” and inserting
3 “\$190,000”; and

4 (III) in subparagraph (B), by
5 striking “\$125,000” and inserting
6 “\$490,000”;

7 (ii) in subsection (c)(1)(C)—

8 (I) in clause (i)—

9 (aa) by striking “assistant
10 professor or equivalent title” and
11 inserting “untenured assistant or
12 associate professor”; and

13 (bb) by inserting “or” after
14 the semicolon at the end;

15 (II) by striking clause (ii); and

16 (III) by redesignating clause (iii)
17 as clause (ii);

18 (iii) in subsection (d), by striking “on
19 a competitive, merit-reviewed basis” and
20 inserting “through a competitive process
21 using merit-based peer review”;

22 (iv) in subsection (e)—

23 (I) by striking the subsection
24 designation and heading and all that
25 follows through “To be eligible” in

1 paragraph (1) and inserting the fol-
2 lowing:

3 “(e) SELECTION PROCESS AND CRITERIA.—To be eli-
4 gible”; and

5 (II) by striking paragraph (2);

6 and

7 (v) in subsection (f)(1), by striking
8 “nonprofit, nondegree-granting research
9 organizations” and inserting “National
10 Laboratories”.

11 (3) SCIENCE EDUCATION PROGRAMS.—Section
12 3164 of the Department of Energy Science Edu-
13 cation Enhancement Act (42 U.S.C. 7381a) is
14 amended—

15 (A) in subsection (b)—

16 (i) by striking paragraphs (1) and (2)
17 and inserting the following:

18 “(1) IN GENERAL.—The Director of the Office
19 of Science (referred to in this subsection as the ‘Di-
20 rector’) shall provide for appropriate coordination of
21 science, technology, engineering, and mathematics
22 education programs across all functions of the De-
23 partment.

24 “(2) ADMINISTRATION.—In carrying out para-
25 graph (1), the Director shall—

1 “(A) consult with—

2 “(i) the Assistant Secretary of Energy
3 with responsibility for energy efficiency
4 and renewable energy programs; and

5 “(ii) the Deputy Administrator for
6 Defense Programs of the National Nuclear
7 Security Administration; and

8 “(B) seek to increase the participation and
9 advancement of women and underrepresented
10 minorities at every level of science, technology,
11 engineering, and mathematics education.”; and

12 (ii) in paragraph (3)—

13 (I) in subparagraph (D), by
14 striking “and” at the end;

15 (II) by redesignating subpara-
16 graph (E) as subparagraph (F); and

17 (III) by inserting after subpara-
18 graph (D) the following:

19 “(E) represent the Department as the
20 principal interagency liaison for all coordination
21 activities under the President for science, tech-
22 nology, engineering, and mathematics education
23 programs; and”;

24 (B) in subsection (d)—

1 (i) by striking “The Secretary” and
2 inserting the following:

3 “(1) IN GENERAL.—The Secretary”; and

4 (ii) by adding at the end the fol-
5 lowing:

6 “(2) REPORT.—Not later than 180 days after
7 the date of enactment of this paragraph, the Direc-
8 tor shall submit a report describing the impact of
9 the activities assisted with the Fund established
10 under paragraph (1) to—

11 “(A) the Committee on Science, Space,
12 and Technology of the House of Representa-
13 tives; and

14 “(B) the Committee on Energy and Nat-
15 ural Resources of the Senate.”.

16 (4) PROTECTING AMERICA’S COMPETITIVE
17 EDGE (PACE) GRADUATE FELLOWSHIP PROGRAM.—
18 Section 5009 of the America COMPETES Act (42
19 U.S.C. 16536) is amended—

20 (A) in subsection (c)—

21 (i) in paragraph (1) by striking “, in-
22 volving” and all that follows through “Sec-
23 retary”; and

24 (ii) in paragraph (2), by striking sub-
25 paragraph (B) and inserting the following:

1 “(B) to demonstrate excellent academic
2 performance and understanding of scientific or
3 technical subjects; and”;

4 (B) in subsection (d)(1)(B)(i), by inserting
5 “full or partial” before “graduate tuition”; and

6 (C) in subsection (e), in the matter pre-
7 ceding paragraph (1), by striking “Director of
8 Science, Engineering, and Mathematics Edu-
9 cation” and inserting “Director of the Office of
10 Science.”.

11 (d) CONFORMING AMENDMENTS.—The table of con-
12 tents for the America COMPETES ACT (Public Law
13 110–69; 121 Stat. 573) is amended by striking the items
14 relating to sections 5004 and 5008.

15 **SEC. 3040. REPEAL OF PRIOR LIMITATION ON COMPENSA-**
16 **TION OF THE SECRETARY OF THE INTERIOR.**

17 (a) IN GENERAL.—The Joint Resolution entitled
18 “Joint Resolution ensuring that the compensation and
19 other emoluments attached to the office of Secretary of
20 the Interior are those which were in effect on January 1,
21 2005”, approved January 16, 2009 (5 U.S.C. 5312 note;
22 Public Law 111–1), is repealed.

23 (b) EFFECTIVE DATE.—This section shall take effect
24 as though enacted on March 2, 2017.