

116TH CONGRESS
1ST SESSION

H. R. 2597

To amend the Public Utility Regulatory Policies Act of 1978 to establish a market-oriented standard for clean electric energy generation, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MAY 8, 2019

Mr. LUJÁN (for himself, Ms. MATSUI, Mr. CASTEN of Illinois, Ms. BLUNT ROCHESTER, and Mr. GALLEGO) introduced the following bill; which was referred to the Committee on Energy and Commerce, and in addition to the Committee on Science, Space, and Technology, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

A BILL

To amend the Public Utility Regulatory Policies Act of 1978 to establish a market-oriented standard for clean electric energy generation, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Clean Energy Stand-
5 ard Act of 2019”.

1 **SEC. 2. FEDERAL CLEAN ENERGY STANDARD.**

2 (a) IN GENERAL.—Title VI of the Public Utility Reg-
3 ulatory Policies Act of 1978 (16 U.S.C. 2601 et seq.) is
4 amended by adding at the end the following:

5 **“SEC. 610. FEDERAL CLEAN ENERGY STANDARD.**

6 “(a) PURPOSE.—The purpose of this section is to es-
7 tablish a technology-neutral, market-oriented standard for
8 electric energy generation that—

9 “(1) stimulates clean energy innovation and al-
10 lows the United States to achieve a net-zero emis-
11 sion electric sector at the lowest cost;

12 “(2) will guide power sector investment and
13 provide regulatory certainty, while helping to ensure
14 that the United States is the leader and dominant
15 competitor in the global clean energy transition; and

16 “(3) will result in—

17 “(A) hundreds of billions of dollars in do-
18 mestic health and environmental benefits by the
19 mid-21st century; and

20 “(B) save tens of thousands of lives in the
21 United States.

22 “(b) DEFINITIONS.—In this section:

23 “(1) APPLICABLE CARBON INTENSITY.—The
24 term ‘applicable carbon intensity’ means 0.4 metric
25 tons of carbon dioxide equivalent per megawatt-hour.

1 “(2) APPLICABLE CLEAN ENERGY PERCENT-
2 AGE.—The term ‘applicable clean energy percent-
3 age’, with respect to a retail electricity supplier,
4 means the clean energy percentage applicable to the
5 retail electricity supplier for the relevant calendar
6 year under subsection (c).

7 “(3) BASE QUANTITY.—

8 “(A) IN GENERAL.—The term ‘base quan-
9 tity’, with respect to a retail electricity supplier
10 for a calendar year, means the total quantity of
11 electric energy consumed by electric customers
12 of the retail electricity supplier, expressed in
13 megawatt-hours, during the calendar year, in-
14 cluding—

15 “(i) the quantity of electric energy
16 sold by the retail electricity supplier to
17 electric customers for purposes other than
18 resale; and

19 “(ii) the quantity of behind-the-meter
20 generation consumed by electric consumers
21 served by the retail electricity supplier.

22 “(B) DETERMINATION.—For purposes of
23 subparagraph (A), not later than 180 days
24 after the date of enactment of this section, the
25 Secretary shall develop appropriate processes

1 for determining the quantity of behind-the-
2 meter generation consumed by electric con-
3 sumers served by a retail electricity supplier, in-
4 cluding by requiring from the retail electricity
5 supplier relevant documentation of behind-the-
6 meter electric energy consumption, such as
7 records associated with net-metering.

8 “(4) BASELINE PERCENTAGE.—The term ‘base-
9 line percentage’ means—

10 “(A) for a retail electricity supplier in op-
11 eration on the date of enactment of this section,
12 the clean energy percentage of the retail elec-
13 tricity supplier calculated for the calendar year
14 in which this section is enacted; and

15 “(B) for a retail electricity supplier that
16 commences operation after the date of enact-
17 ment of this section, such clean energy percent-
18 age as the Secretary determines to be appro-
19 priate.

20 “(5) BEHIND-THE-METER GENERATION.—The
21 term ‘behind-the-meter generation’ means the gen-
22 eration of clean energy using a system that operates
23 on the customer side of the applicable utility meter,
24 subject to the condition that the retail electricity
25 supplier serving the generator shall submit to the

1 Secretary, not less frequently than annually,
2 verification of the quantity of that generation in
3 such form, in such manner, and containing such in-
4 formation as the Secretary may require.

5 “(6) CARBON DIOXIDE EQUIVALENT.—

6 “(A) IN GENERAL.—The term ‘carbon di-
7 oxide equivalent’ means the number of metric
8 tons of carbon dioxide emissions with the same
9 global warming potential over a 100-year period
10 as 1 metric ton of another greenhouse gas.

11 “(B) GLOBAL WARMING POTENTIAL.—For
12 purposes of subparagraph (A), global warming
13 potential shall be determined in accordance with
14 the Fifth Assessment Report of the Intergov-
15 ernmental Panel on Climate Change.

16 “(7) CARBON INTENSITY.—The term ‘carbon
17 intensity’ means the carbon dioxide equivalent emis-
18 sions associated with the generation of 1 megawatt-
19 hour of electric energy by a generator.

20 “(8) CLEAN ENERGY.—The term ‘clean energy’
21 means electric energy that is—

22 “(A) generated at a facility using—

23 “(i) renewable energy;

24 “(ii) qualified renewable biomass;

25 “(iii) hydropower;

- 1 “(iv) nuclear power;
- 2 “(v) qualified waste-to-energy;
- 3 “(vi) qualified low-carbon fuels;
- 4 “(vii) a qualified combined heat and
5 power system; or
- 6 “(viii) any other source of energy in a
7 manner that ensures that the facility does
8 not exceed the applicable carbon intensity;
- 9 “(B) generated at a facility that—
- 10 “(i) captures the carbon dioxide
11 from—
- 12 “(I) a waste stream of the facil-
13 ity;
- 14 “(II) another waste stream; or
- 15 “(III) the atmosphere directly;
- 16 and
- 17 “(ii) prevents the release of the cap-
18 tured carbon dioxide into the atmosphere;
- 19 or
- 20 “(C) dispatched from a qualified energy
21 storage system.
- 22 “(9) CLEAN ENERGY PERCENTAGE.—
- 23 “(A) IN GENERAL.—The term ‘clean en-
24 ergy percentage’ means the percentage of clean

1 energy consumed by all electric consumers of a
2 retail electricity supplier.

3 “(B) CALCULATION.—For purposes of sub-
4 paragraph (A), the clean energy percentage of
5 a retail electricity supplier shall be equal to the
6 quotient obtained by dividing—

7 “(i) the sum of—

8 “(I) the quantity of clean energy
9 sold by the retail electricity supplier
10 to electric consumers; and

11 “(II) the quantity of behind-the-
12 meter generation consumed by electric
13 consumers served by the retail elec-
14 tricity supplier; by

15 “(ii) the base quantity of the retail
16 electricity supplier.

17 “(C) DETERMINATION.—

18 “(i) IN GENERAL.—For purposes of
19 subparagraph (B), not later than 180 days
20 after the date of enactment of this section,
21 the Secretary shall develop a process for
22 determining the quantities of—

23 “(I) clean energy sold by a retail
24 electricity supplier to electric con-
25 sumers, taking into account—

1 “(aa) the need to quantify,
2 without double counting, appro-
3 priate quantities of clean en-
4 ergy—

5 “(AA) owned by the re-
6 tail electricity supplier;

7 “(BB) obtained by the
8 retail electricity supplier
9 through power purchase
10 agreements;

11 “(CC) imported by the
12 retail electricity supplier;

13 “(DD) purchased by
14 the retail electricity supplier
15 from wholesale markets; and

16 “(EE) purchased by the
17 retail electricity supplier
18 through existing renewable
19 or clean energy credits and
20 certificates; and

21 “(bb) appropriate dif-
22 ferences between—

23 “(AA) retailers oper-
24 ating in organized wholesale
25 markets; and

1 “(BB) retailers oper-
2 ating in vertically integrated
3 market contexts; and

4 “(II) behind-the-meter generation
5 consumed by electric consumers
6 served by a retail electricity supplier,
7 including by requiring from the retail
8 electricity supplier relevant docu-
9 mentation of behind-the-meter electric
10 energy consumption, such as records
11 associated with net-metering.

12 “(ii) QUANTIFYING CLEAN ENERGY.—
13 For purposes of quantifying clean energy
14 and behind-the-meter generation under
15 clause (i), the Secretary shall use the
16 methods used to assign a quantity of cred-
17 its to generators under subsection (f).

18 “(10) DISPATCHABLE LOW-EMISSION TECH-
19 NOLOGY.—The term ‘dispatchable low-emission tech-
20 nology’ means a generator that uses a technology or
21 combination of technologies that—

22 “(A) has a carbon intensity of not more
23 than 0.05 metric tons of carbon dioxide equiva-
24 lent per megawatt-hour;

1 “(B) has the ability, at any time, to start,
2 increase, decrease, and stop energy production
3 on demand;

4 “(C) is placed into service after the date of
5 enactment of this section; and

6 “(D) is not a dispatchable zero-emission
7 technology.

8 “(11) DISPATCHABLE ZERO-EMISSION TECH-
9 NOLOGY.—The term ‘dispatchable zero-emission
10 technology’ means a generator that uses a tech-
11 nology or combination of technologies that—

12 “(A) has a carbon intensity of zero;

13 “(B) has the ability, at any time, to start,
14 increase, decrease, and stop energy production
15 on demand; and

16 “(C) is placed into service after the date of
17 enactment of this section.

18 “(12) ENERGY STORAGE SYSTEM.—The term
19 ‘energy storage system’ means any equipment or fa-
20 cility relating to the electric grid that—

21 “(A) is capable of absorbing energy, stor-
22 ing the energy for a period of time, and dis-
23 patching the energy as electric energy; and

24 “(B) uses mechanical, electrochemical, bio-
25 chemical, or thermal processes—

1 “(i) to store energy generated at an
2 earlier time for use at a later time; or

3 “(ii) to store energy generated from a
4 mechanical process that would otherwise be
5 wasted for delivery at a later time.

6 “(13) FEDERAL CLEAN ENERGY CREDIT.—The
7 term ‘Federal clean energy credit’ means a credit
8 issued pursuant to subsection (e).

9 “(14) GENERATOR.—The term ‘generator’
10 means a unit or system of units that—

11 “(A) generates not fewer than 20 mega-
12 watt-hours of electric energy per calendar year;

13 “(B) delivers electric energy to the grid;
14 and

15 “(C) is located in the United States.

16 “(15) LIFECYCLE GREENHOUSE GAS EMIS-
17 SIONS.—The term ‘lifecycle greenhouse gas emis-
18 sions’ means the aggregate quantity of carbon diox-
19 ide equivalent emissions relating to the full lifecycle
20 of electric energy production, including—

21 “(A) extraction, production, and distribu-
22 tion of fuels and materials for physical capital;

23 “(B) power generation and transmission;
24 and

1 “(C) handling and disposal of waste, by-
2 products, and end-of-life materials.

3 “(16) QUALIFIED COMBINED HEAT AND POWER
4 SYSTEM.—The term ‘qualified combined heat and
5 power system’ means a system that—

6 “(A) uses the same energy source for the
7 simultaneous or sequential generation of elec-
8 trical energy and thermal energy;

9 “(B) produces at least—

10 “(i) 20 percent of the useful energy of
11 the system in the form of electricity; and

12 “(ii) 20 percent of the useful energy
13 in the form of useful thermal energy;

14 “(C) to the extent that the system uses
15 biomass, uses only qualified renewable biomass;
16 and

17 “(D) operates with an energy efficiency
18 percentage, as determined in accordance with
19 section 48(e)(3)(C)(i) of the Internal Revenue
20 Code of 1986, of greater than 50 percent.

21 “(17) QUALIFIED DISPATCHABLE.—

22 “(A) IN GENERAL.—The term ‘qualified
23 dispatchable’ means—

1 “(i) with respect to a dispatchable
2 low-emission technology, a dispatchable
3 low-emission technology that—

4 “(I) is 1 of the first 5 original
5 demonstrations in the United States
6 of a particular innovative technology
7 providing not less than 20 megawatts
8 of electric energy generation capacity;

9 “(II) generates revenue from the
10 sale of electric energy; and

11 “(III) is placed into service be-
12 fore January 1, 2030; and

13 “(ii) with respect to a dispatchable
14 zero-emission technology, means a dis-
15 patchable zero-emission technology that—

16 “(I) is 1 of the first 5 original
17 demonstrations in the United States
18 of a particular innovative technology
19 providing not less than 20 megawatts
20 of electric energy generation capacity;

21 “(II) generates revenue from the
22 sale of electric energy; and

23 “(III) is placed into service be-
24 fore January 1, 2040.

1 “(B) DETERMINATION.—For purposes of
2 determining whether a dispatchable low-emis-
3 sion technology or dispatchable zero-emission
4 technology is an original demonstration of an
5 innovative technology under clause (i)(I) or
6 (ii)(I), respectively, of subparagraph (A), the
7 Secretary shall—

8 “(i) develop a process that—

9 “(I) ensures that each innovative
10 technology exhibits a significant tech-
11 nical or economic advancement, as
12 compared to existing technologies; and

13 “(II) includes consideration of an
14 application submitted to the Secretary
15 by the owner of the dispatchable low-
16 emission technology or dispatchable
17 zero-emission technology;

18 “(ii) not later than 90 days after the
19 date of submission of an application under
20 clause (i)(II), make a determination re-
21 garding whether to approve the applica-
22 tion; and

23 “(iii) subject to subparagraph (C),
24 provide to each owner, the application of

1 which is approved under clause (ii), a cer-
2 tification—

3 “(I) that the applicable generator
4 is a qualified dispatchable low-emis-
5 sion technology or dispatchable zero-
6 emission technology; and

7 “(II) that shall be surrendered to
8 earn Federal clean energy credits
9 under subsection (f)(10).

10 “(C) TERMINATION OF CERTIFICATION.—

11 Except as otherwise provided by the Secretary,
12 a certification provided under subparagraph
13 (B)(iii) shall cease to have any force or effect
14 if the Secretary determines that construction of
15 the applicable generator—

16 “(i) does not commence by the date
17 that is 2 years after the date of certifi-
18 cation; or

19 “(ii) has been suspended indefinitely.

20 “(18) QUALIFIED ENERGY STORAGE SYSTEM.—

21 The term ‘qualified energy storage system’ means an
22 energy storage system that stores clean energy—

23 “(A) that would otherwise be wasted or
24 curtailed;

1 “(B) with verifiable carbon intensity that
2 does not exceed the applicable carbon intensity;
3 and

4 “(C) for which no Federal clean energy
5 credit is issued.

6 “(19) QUALIFIED GENERATION.—The term
7 ‘qualified generation’ means the number of mega-
8 watt-hours of electric energy that a generator—

9 “(A)(i) generates; or

10 “(ii) generates and stores using a con-
11 nected energy storage system; and

12 “(B)(i) sells for resale;

13 “(ii) if the generator is owned by a retail
14 electricity supplier, sells to electric consumers;
15 or

16 “(iii) if the generator is a behind-the-meter
17 generation system, consumes onsite for a useful
18 purpose.

19 “(20) QUALIFIED LOW-CARBON FUEL.—

20 “(A) IN GENERAL.—The term ‘qualified
21 low-carbon fuel’ means a fuel used to generate
22 electric energy that—

23 “(i) is produced through any process
24 (but not including any processes that use
25 electric energy as an input) that signifi-

1 cantly limits or avoids greenhouse gas
2 emissions; and

3 “(ii) does not release greenhouse gas
4 or other pollutant emissions during com-
5 bustion.

6 “(B) INCLUSION.—The term ‘qualified
7 low-carbon fuel’ includes—

8 “(i) ammonia; and

9 “(ii) hydrogen.

10 “(21) QUALIFIED RENEWABLE BIOMASS.—The
11 term ‘qualified renewable biomass’ means—

12 “(A) any crop byproduct or crop residue
13 harvested from actively managed or fallow agri-
14 cultural land that is cleared before the date of
15 enactment of this section, if the harvesting of
16 the residue does not lead to a net decline in soil
17 organic matter for the applicable land;

18 “(B) any planted tree, brush, slash, or res-
19 idue from an actively managed tree farm dedi-
20 cated to energy crop production and located on
21 forest land established for planted tree crop
22 production before the date of enactment of this
23 section;

1 “(C) any brush, slash, or residue from an
2 actively managed forest that is certified to
3 achieve compliance with applicable—

4 “(i) sustainability standards of the
5 Forest Stewardship Council; or

6 “(ii) standards endorsed by the Pro-
7 gramme for the Endorsement of Forest
8 Certification, including—

9 “(I) the Sustainable Forestry Ini-
10 tiative; and

11 “(II) the American Tree Farm
12 System;

13 “(D) algae;

14 “(E) nonhazardous plant matter derived
15 from landscape right-of-way trimmings; and

16 “(F) vegetative matter removed from an
17 area located not more than 200 yards from a
18 building, residence, or campground for the pur-
19 pose of hazardous fuels management.

20 “(22) QUALIFIED WASTE-TO-ENERGY.—The
21 term ‘qualified waste-to-energy’ means energy pro-
22 duced—

23 “(A) from the combustion of—

24 “(i) post-recycled municipal solid
25 waste;

1 “(ii) gas produced from the gasifi-
2 cation or pyrolyzation of post-recycled mu-
3 nicipal solid waste;

4 “(iii) biogas;

5 “(iv) landfill methane;

6 “(v) animal waste or animal byprod-
7 ucts;

8 “(vi) food waste;

9 “(vii) wood, paper products that are
10 not commonly recyclable, and vegetation
11 (including trees and trimmings, yard
12 waste, pallets, railroad ties, crates, and
13 solid-wood manufacturing and construction
14 debris), if diverted from or separated from
15 other waste out of a municipal waste
16 stream; or

17 “(viii) any byproduct of a wood or
18 paper mill operation, including lignin in
19 spent pulping liquors; and

20 “(B) at a facility that the Secretary has
21 certified, on an annual basis, is in compliance
22 with all applicable Federal and State environ-
23 mental permits, including—

24 “(i) in the case of a facility that com-
25 mences operation before the date of enact-

1 ment of this section, compliance with emis-
2 sion standards under sections 112 and, as
3 applicable, 129 of the Clean Air Act (42
4 U.S.C. 7412, 7429) that apply as of the
5 date of enactment of this section to new
6 facilities within the applicable source cat-
7 egory; and

8 “(ii) in the case of a facility that pro-
9 duces electric or thermal energy from the
10 combustion, pyrolization, or gasification of
11 municipal solid waste, certification that
12 each local government unit from which the
13 waste originates operates, participates in
14 the operation of, contracts for, or other-
15 wise provides for recycling services for resi-
16 dents of the local government unit.

17 “(23) RENEWABLE ENERGY.—The term ‘renew-
18 able energy’ means solar, wind, ocean, current, wave,
19 tidal, or geothermal energy.

20 “(24) RETAIL ELECTRICITY SUPPLIER.—

21 “(A) IN GENERAL.—The term ‘retail elec-
22 tricity supplier’, as determined for each cal-
23 endar year, means an entity in the United
24 States that sold not fewer than 20 megawatt-
25 hours of electric energy to electric consumers

1 for purposes other than resale during the pre-
2 ceding calendar year.

3 “(B) INCLUSIONS AND LIMITATIONS.—For
4 purposes of making a determination under sub-
5 paragraph (A) with respect to an entity—

6 “(i) any sale of electric energy made
7 by an affiliate of the entity to an electric
8 consumer (other than to a lessee or tenant
9 of the affiliate) for purposes other than re-
10 sale may be considered to be a sale made
11 by the entity; and

12 “(ii) any sale of electric energy made
13 by the entity to an affiliate, lessee, or ten-
14 ant of the entity shall not be considered to
15 be a sale to an electric consumer.

16 “(C) AFFILIATE.—For purposes of sub-
17 paragraph (B), the term ‘affiliate’, with respect
18 to an entity, means an individual or entity that
19 directly or indirectly owns or controls, is owned
20 or controlled by, or is under common ownership
21 or control with, the entity, as determined in ac-
22 cordance with applicable regulations of the Sec-
23 retary.

24 “(c) CLEAN ENERGY REQUIREMENT.—

1 “(1) IN GENERAL.—Beginning in the second
2 full calendar year beginning after the date of enact-
3 ment of this section, and each calendar year there-
4 after, each retail electricity supplier shall sell a
5 quantity of clean energy equal to the product ob-
6 tained by multiplying—

7 “(A) the applicable clean energy percent-
8 age determined for the retail electricity supplier
9 for the calendar year under paragraph (2); and

10 “(B) the base quantity of the retail elec-
11 tricity supplier for the applicable calendar year.

12 “(2) DETERMINATION OF APPLICABLE CLEAN
13 ENERGY PERCENTAGES.—

14 “(A) INITIAL PERCENTAGE.—

15 “(i) USE OF BASELINE PERCENT-
16 AGE.—For purposes of the determinations
17 required under subparagraphs (B) and
18 (C), the applicable clean energy percentage
19 for a retail electricity supplier for the cal-
20 endar year during which this section is en-
21 acted shall be the baseline percentage of
22 the retail electricity supplier.

23 “(ii) NEW RETAIL ELECTRICITY SUP-
24 PLIERS.—For purposes of the determina-
25 tions required under subparagraphs (B)

1 and (C), for a retail electricity supplier
2 that is established after the date of enact-
3 ment of this section, the Secretary shall
4 determine the appropriate applicable clean
5 energy percentage for the first calendar
6 year beginning after the date on which the
7 retail electricity supplier commences oper-
8 ation.

9 “(B) SUBSEQUENT DETERMINATIONS.—

10 Subject to paragraph (3), for the first calendar
11 year beginning after the date of enactment of
12 this section and each calendar year thereafter
13 until the calendar year for which the applicable
14 clean energy percentage for a retail electricity
15 supplier is 90 percent, the applicable clean en-
16 ergy percentage for the retail electricity supplier
17 under paragraph (1) shall be—

18 “(i) in the case of a retail electricity
19 supplier with not less than 2,000,000
20 megawatt-hours of retail electric energy
21 sales during the calendar year in which
22 this section is enacted, or a retail elec-
23 tricity supplier with less than 2,000,000
24 megawatt-hours of retail electric energy
25 sales during that calendar year but more

1 than 2,000,000 megawatt-hours of retail
2 electric energy sales during a subsequent
3 calendar year due to a merger or the ac-
4 quisition of additional territory, the appli-
5 cable clean energy percentage for the retail
6 electricity supplier for the preceding cal-
7 endar year, as increased—

8 “(I) for any calendar year for
9 which the applicable clean energy per-
10 centage of the retail electricity sup-
11 plier is not more than 60 percent, by
12 the fast growth rate for the calendar
13 year, as determined under paragraph
14 (3)(B); and

15 “(II) for any calendar year for
16 which the applicable clean energy per-
17 centage of the retail electricity sup-
18 plier is more than 60 percent, by the
19 slow growth rate for the calendar
20 year, as determined under paragraph
21 (3)(C), up to a maximum of 90 per-
22 cent; and

23 “(ii) in the case of a retail electricity
24 supplier not described in clause (i), the ap-
25 plicable clean energy percentage for the re-

1 tail electricity supplier for the preceding
2 calendar year, as increased by the small
3 growth rate for the calendar year, as deter-
4 mined under paragraph (3)(D), up to a
5 maximum of 90 percent.

6 “(C) FINAL TARGET PERCENTAGE.—Effec-
7 tive beginning in calendar year 2040, for each
8 calendar year beginning after the first calendar
9 year for which the applicable clean energy per-
10 centage of a retail electricity supplier under
11 subparagraph (B) is 90 percent, the applicable
12 clean energy percentage for the retail electricity
13 supplier under paragraph (1) shall be increased
14 by 1 percentage point, up to a maximum of 100
15 percent.

16 “(3) RATE INCREASE ADJUSTMENTS.—

17 “(A) DEFINITIONS.—In this paragraph:

18 “(i) RATE DECREASE-ADJUSTED CAL-
19 ENDAR YEAR.—The term ‘rate decrease-
20 adjusted calendar year’ means any cal-
21 endar year beginning after a calendar year
22 for which alternative compliance payments
23 accounted for greater than 10 percent of
24 total compliance obligations of all retail

1 electricity providers under subsection (d)
2 for that calendar year.

3 “(ii) RATE INCREASE-ADJUSTED CAL-
4 ENDAR YEAR.—The term ‘rate increase-ad-
5 justed calendar year’ means any calendar
6 year beginning after a 2-consecutive cal-
7 endar year period during which, for each of
8 those 2 consecutive calendar years, the av-
9 erage price of a Federal clean energy cred-
10 it for the 3 preceding calendar years was
11 below the rate-increased floor price.

12 “(iii) RATE-INCREASED FLOOR
13 PRICE.—The term ‘rate-increased floor
14 price’ means the difference between—

15 “(I) the alternative compliance
16 payment for the applicable calendar
17 year; and

18 “(II)(aa) during the period be-
19 ginning on the date of enactment of
20 this section and ending on December
21 31 of the second full calendar year be-
22 ginning after that date of enactment,
23 a rate of 1.5 cents per kilowatt-hour;
24 and

1 “(bb) for each calendar year
2 thereafter, the rate described in item
3 (aa) for the preceding calendar year—

4 “(AA) increased by 3 per-
5 cent; and

6 “(BB) adjusted for inflation,
7 as the Secretary determines to be
8 necessary.

9 “(B) FAST GROWTH RATE.—For purposes
10 of paragraph (2)(B)(i)(I), the fast growth rate
11 shall be—

12 “(i) for the calendar year in which
13 this section is enacted, 2.75 percentage
14 points;

15 “(ii) for the first calendar year begin-
16 ning after the date of enactment of this
17 section and each calendar year thereafter
18 that is not a rate increase-adjusted cal-
19 endar year or a rate decrease-adjusted cal-
20 endar year, the fast growth rate for the
21 preceding calendar year;

22 “(iii) for a rate increase-adjusted cal-
23 endar year, the fast growth rate for the
24 preceding calendar year, increased by 0.5
25 percentage points; and

1 “(iv) for a rate decrease-adjusted cal-
2 endar year, the fast growth rate for the
3 preceding calendar year, decreased by 0.25
4 percentage points, down to a minimum of
5 2.75 percentage points.

6 “(C) SLOW GROWTH RATE.—For purposes
7 of paragraph (2)(B)(i)(II), the slow growth rate
8 shall be—

9 “(i) for the calendar year in which
10 this section is enacted, 1.75 percentage
11 points;

12 “(ii) for the first calendar year begin-
13 ning after the date of enactment of this
14 section and each calendar year thereafter
15 that is not a rate increase-adjusted cal-
16 endar year or a rate decrease-adjusted cal-
17 endar year, the slow growth rate for the
18 preceding calendar year;

19 “(iii) for a rate increase-adjusted cal-
20 endar year, the slow growth rate for the
21 preceding calendar year, increased by 0.5
22 percentage points; and

23 “(iv) for a rate decrease-adjusted cal-
24 endar year, the slow growth rate for the
25 preceding calendar year, decreased by 0.25

1 percentage points, down to a minimum of
2 1.75 percentage points.

3 “(D) SMALL GROWTH RATE.—For pur-
4 poses of paragraph (2)(B)(ii), the small growth
5 rate shall be—

6 “(i) for the calendar year in which
7 this section is enacted, 1.5 percentage
8 points;

9 “(ii) for the first calendar year begin-
10 ning after the date of enactment of this
11 section and each calendar year thereafter
12 that is not a rate increase-adjusted cal-
13 endar year or a rate decrease-adjusted cal-
14 endar year, the small growth rate for the
15 preceding calendar year;

16 “(iii) for a rate increase-adjusted cal-
17 endar year, the small growth rate for the
18 preceding calendar year, increased by 0.5
19 percentage points; and

20 “(iv) for a rate decrease-adjusted cal-
21 endar year, the small growth rate for the
22 preceding calendar year, decreased by 0.25
23 percentage points, down to a minimum of
24 1.5 percentage points.

25 “(d) MEANS OF COMPLIANCE.—

1 “(1) IN GENERAL.—A retail electricity supplier
2 shall annually achieve compliance with subsection (e)
3 by—

4 “(A) submitting to the Secretary Federal
5 clean energy credits;

6 “(B) submitting to the Secretary docu-
7 mentation of the quantity of behind-the-meter
8 generation consumed by electric consumers
9 served by the retail electricity supplier;

10 “(C) making alternative compliance pay-
11 ments of 3 cents per kilowatt-hour in accord-
12 ance with subsection (i); or

13 “(D) taking a combination of actions de-
14 scribed in subparagraphs (A) through (C).

15 “(2) FAILURE TO ESTABLISH FEDERAL CLEAN
16 ENERGY CREDIT TRADING PROGRAM.—If the Sec-
17 retary does not establish a Federal clean energy
18 credit trading program under subsection (e), a retail
19 electricity supplier shall achieve compliance with
20 subsection (e) by—

21 “(A) submitting to the Secretary docu-
22 mentation of the clean energy percentage of the
23 retail electricity supplier;

1 “(B) making alternative compliance pay-
2 ments of 3 cents per kilowatt-hour in accord-
3 ance with subsection (i); or

4 “(C) taking a combination of actions de-
5 scribed in subparagraphs (A) and (B).

6 “(e) FEDERAL CLEAN ENERGY CREDIT TRADING
7 PROGRAM.—

8 “(1) ESTABLISHMENT.—Not later than 1 year
9 after the date of enactment of this section, the Sec-
10 retary shall establish a Federal clean energy credit
11 trading program under which—

12 “(A) 1 Federal clean energy credit rep-
13 resents 1 megawatt-hour of clean energy gen-
14 erated by a generator;

15 “(B) retail electricity suppliers may submit
16 to the Secretary Federal clean energy credits to
17 certify compliance by the retail electricity sup-
18 pliers with subsection (e); and

19 “(C) those Federal clean energy credits are
20 issued, recorded, tracked, and transferred.

21 “(2) CLEAN ENERGY CREDITS.—Except as pro-
22 vided in subparagraphs (B) and (C) of paragraph
23 (3), the Secretary shall issue to each generator and
24 qualified energy storage system a quantity of Fed-

1 eral clean energy credits determined in accordance
2 with subsections (f) and (g).

3 “(3) ADMINISTRATION.—In carrying out the
4 program under this subsection, the Secretary shall
5 ensure that—

6 “(A) a Federal clean energy credit may
7 be—

8 “(i) used only once for purposes of
9 compliance with this section; and

10 “(ii) purchased only by a retail elec-
11 tricity supplier;

12 “(B) a Federal clean energy credit issued
13 for clean energy generated and sold for resale
14 under a contract in effect on the date of enact-
15 ment of this section shall be issued to the pur-
16 chasing retail electricity supplier, unless other-
17 wise provided by the contract; and

18 “(C) with respect to clean energy gen-
19 erated in a facility outside of the United States,
20 a Federal clean energy credit may be issued
21 only—

22 “(i) if the clean energy is sold for re-
23 sale in the United States; and

24 “(ii) to the purchasing retail elec-
25 tricity supplier.

1 “(4) DELEGATION OF MARKET FUNCTION.—

2 “(A) IN GENERAL.—In carrying out the
3 program under this subsection, the Secretary
4 may delegate—

5 “(i) to 1 or more appropriate entities
6 (including any Federal entity in existence
7 on the date of enactment of this section),
8 the administration of a national Federal
9 clean energy credit market for purposes of
10 establishing a transparent national market
11 for the sale or trade of Federal clean en-
12 ergy credits; and

13 “(ii) to appropriate entities, the track-
14 ing of dispatch of clean energy generation.

15 “(B) ADMINISTRATION.—In making a del-
16 egation under subparagraph (A)(ii), the Sec-
17 retary shall ensure that the tracking and re-
18 porting of information concerning the dispatch
19 of clean energy generation is transparent,
20 verifiable, and independent of any generation or
21 load interests subject to an obligation under
22 this section.

23 “(5) BANKING OF FEDERAL CLEAN ENERGY
24 CREDITS.—

1 “(A) IN GENERAL.—Subject to subpara-
2 graph (B), for purposes of achieving compliance
3 with subsection (c), a Federal clean energy
4 credit shall be valid for—

5 “(i) the calendar year during which
6 the Federal clean energy credit is issued;
7 or

8 “(ii) either of the 2 subsequent cal-
9 endar years.

10 “(B) ADJUSTMENTS.—

11 “(i) CALENDAR YEARS 2040 THROUGH
12 2049.—For each of calendar years 2040
13 through 2049, a Federal clean energy
14 credit shall be valid for—

15 “(I) the calendar year during
16 which the Federal clean energy credit
17 is issued; or

18 “(II) the subsequent calendar
19 year.

20 “(ii) CALENDAR YEAR 2050 AND
21 THEREAFTER.—Beginning in calendar year
22 2050, a Federal clean energy credit shall
23 be valid only for the calendar year during
24 which the Federal clean energy credit is
25 issued.

1 “(f) DETERMINATION OF QUANTITY OF CREDITS.—

2 “(1) IN GENERAL.—Except as otherwise pro-
3 vided in this subsection, the quantity of Federal
4 clean energy credits issued to a generator of clean
5 energy shall be equal to the product obtained by
6 multiplying—

7 “(A) the qualified generation of the gener-
8 ator; and

9 “(B) the difference between—

10 “(i) 1.0; and

11 “(ii) the quotient obtained by divid-
12 ing—

13 “(I) the carbon intensity of the
14 generator, as determined in accord-
15 ance with subsection (g) (expressed in
16 metric tons per megawatt-hour); by

17 “(II) the applicable carbon inten-
18 sity.

19 “(2) QUALIFIED COMBINED HEAT AND POWER
20 SYSTEMS.—

21 “(A) IN GENERAL.—The quantity of Fed-
22 eral clean energy credits issued to a generator
23 that is a qualified combined heat and power
24 system shall be equal to the difference be-
25 tween—

1 “(i) the product obtained by multi-
2 plying—

3 “(I) the number of megawatt-
4 hours of electric energy generated by
5 the qualified combined heat and power
6 system; and

7 “(II) the difference between—

8 “(aa) 1.0; and

9 “(bb) the quotient obtained
10 by dividing—

11 “(AA) the carbon inten-
12 sity of the generator, as de-
13 termined in accordance with
14 subsection (g) (expressed in
15 metric tons per megawatt-
16 hour); by

17 “(BB) the applicable
18 carbon intensity; and

19 “(ii) the product obtained by multi-
20 plying—

21 “(I) the number of megawatt-
22 hours of electric energy generated by
23 the qualified combined heat and power
24 system that are consumed onsite; and

1 “(II) the national weighted aver-
2 age of the applicable clean energy per-
3 centage required for the calendar year
4 under subsection (c), as determined
5 by the Secretary.

6 “(B) ADDITIONAL CREDITS.—In addition
7 to Federal clean energy credits issued under
8 subparagraph (A), the Secretary shall issue
9 Federal clean energy credits to a generator that
10 is a qualified combined heat and power system
11 for greenhouse gas emissions avoided as a re-
12 sult of the use of the qualified combined heat
13 and power system, rather than a separate ther-
14 mal source, to meet the onsite thermal needs of
15 the generator.

16 “(3) QUALIFIED RENEWABLE BIOMASS.—

17 “(A) IN GENERAL.—Subject to subpara-
18 graph (B), the quantity of Federal clean energy
19 credits issued to each generator of clean energy
20 using qualified renewable biomass shall be equal
21 to the product obtained by multiplying—

22 “(i) the qualified generation of the
23 generator using qualified renewable bio-
24 mass; and

1 “(ii) the qualified renewable biomass
2 credit value determined under subsection
3 (g)(4)(B)(iii).

4 “(B) EXISTING GENERATORS.—For gen-
5 erators placed into service before the date of en-
6 actment of this section, the quantity of Federal
7 clean energy credits issued to each generator of
8 energy using qualified renewable biomass shall
9 be equal to the greater of—

10 “(i) the product obtained by multi-
11 plying—

12 “(I) the qualified generation of
13 the generator, not to exceed the gen-
14 eration capacity of the generator on
15 the date of enactment of this section;
16 and

17 “(II) 0.5; and

18 “(ii) the quantity of credits deter-
19 mined under subparagraph (A).

20 “(4) QUALIFIED WASTE-TO-ENERGY.—

21 “(A) IN GENERAL.—Subject to subpara-
22 graph (B), the quantity of Federal clean energy
23 credits issued to a generator that is a qualified
24 waste-to-energy facility shall be equal to the
25 product obtained by multiplying—

1 “(i) the qualified generation of the
2 generator using qualified waste-to-energy;
3 and

4 “(ii) the qualified waste-to-energy
5 credit value determined under subsection
6 (g)(4)(B)(iii).

7 “(B) EXISTING GENERATORS.—For gen-
8 erators placed into service before the date of en-
9 actment of this section, the quantity of Federal
10 clean energy credits issued to each generator of
11 energy that is a qualified waste-to-energy facil-
12 ity shall be equal to the greater of—

13 “(i) the qualified generation of the
14 generator, not to exceed the generation ca-
15 pacity of the generator on the date of en-
16 actment of this section; and

17 “(ii) the quantity of credits deter-
18 mined under subparagraph (A).

19 “(5) QUALIFIED LOW-CARBON FUELS.—The
20 quantity of Federal clean energy credits issued to a
21 generator using qualified low-carbon fuels shall be
22 equal to the product obtained by multiplying—

23 “(A) the qualified generation of the gener-
24 ator using qualified low-carbon-fuels; and

1 “(B) the qualified low-carbon fuel credit
2 value determined under subsection
3 (g)(4)(B)(iii).

4 “(6) CARBON CAPTURE, STORAGE, AND UTILI-
5 ZATION.—

6 “(A) DEFINITIONS.—In this paragraph,
7 the terms ‘qualified carbon oxide’, ‘qualified en-
8 hanced oil or natural gas recovery project’, and
9 ‘tertiary injectant’ have the meanings given
10 those terms in section 45Q of the Internal Rev-
11 enue Code of 1986.

12 “(B) QUANTITY OF CREDITS.—Except as
13 otherwise provided in this subsection, the quan-
14 tity of Federal clean energy credits issued to
15 each generator of clean energy through the cap-
16 ture and storage or utilization of qualified car-
17 bon oxide from a waste stream of the generator
18 shall be equal to the product obtained by multi-
19 plying—

20 “(i) the qualified generation of the
21 generator; and

22 “(ii) the difference between—

23 “(I) 1.0; and

24 “(II) the quotient obtained by di-
25 viding—

1 “(aa) the carbon intensity of
2 the generator, as determined in
3 accordance with subsection (g)
4 (expressed in metric tons per
5 megawatt-hour); by

6 “(bb) the applicable carbon
7 intensity.

8 “(C) ADDITIONAL CREDITS.—In addition
9 to Federal clean energy credits issued under
10 subparagraph (B), the Secretary shall issue
11 Federal clean energy credits to each generator
12 of clean energy through the capture and storage
13 or utilization of qualified carbon oxide from a
14 waste stream other than the waste stream of
15 the generator, or from the atmosphere directly,
16 in a quantity equal to the quotient obtained by
17 dividing—

18 “(i) the number of metric tons of
19 qualified carbon oxide captured and stored
20 or utilized; by

21 “(ii) the carbon intensity of the gener-
22 ator, as determined in accordance with
23 subsection (g) (expressed in metric tons
24 per megawatt-hour).

25 “(D) SPECIAL RULES.—

1 “(i) REGULATIONS.—

2 “(I) IN GENERAL.—Subject to
3 subclause (III), not later than 1 year
4 after the date of enactment of this
5 section, the Secretary, in consultation
6 with the Administrator of the Envi-
7 ronmental Protection Agency, shall
8 promulgate regulations establishing—

9 “(aa) the conditions under
10 which qualified carbon oxide may
11 be safely and permanently stored
12 for purposes of issuing Federal
13 clean energy credits to a gener-
14 ator under this paragraph; and

15 “(bb) in accordance with
16 subclause (II), the methods and
17 processes by which qualified car-
18 bon oxide may be utilized in a
19 manner that ensures the removal
20 of the qualified carbon oxide
21 safely and permanently from the
22 atmosphere.

23 “(II) REQUIREMENTS.—For pur-
24 poses of subclause (I)(bb)—

1 “(aa) utilization of qualified
2 carbon oxide may include the
3 production of substances, such as
4 plastics and chemicals; and

5 “(bb) the regulations pro-
6 mulgated pursuant to that sub-
7 clause shall minimize the escape
8 or further emission of qualified
9 carbon oxide into the atmos-
10 phere.

11 “(III) EXISTING REQUIRE-
12 MENTS.—In promulgating regulations
13 pursuant to this clause, the Secretary
14 shall incorporate any existing Federal
15 requirements for the permanent geo-
16 logic storage of carbon oxides, includ-
17 ing any requirements under section
18 45Q of the Internal Revenue Code of
19 1986.

20 “(ii) ADJUSTED QUANTITY.—

21 “(I) IN GENERAL.—Notwith-
22 standing subparagraphs (B) and (C),
23 except as provided in subclause (II),
24 the quantity of Federal clean energy
25 credits issued under this paragraph to

1 a generator at which qualified carbon
2 oxide is captured and used as a ter-
3 tiary injectant in a qualified enhanced
4 oil or natural gas recovery project
5 shall be reduced by 50 percent.

6 “(II) NO REDUCTION.—If the
7 qualified carbon oxide captured and
8 used as a tertiary injectant in a quali-
9 fied enhanced oil or natural gas recov-
10 ery project by a generator achieves
11 compliance with the conditions estab-
12 lished pursuant to clause (i)(I)(aa),
13 the quantity of Federal clean energy
14 credits issued to the generator shall
15 not be reduced.

16 “(7) QUALIFIED ENERGY STORAGE SYSTEMS.—
17 The quantity of Federal clean energy credits issued
18 to each qualified energy storage system shall be
19 equal to the product obtained by multiplying—

20 “(A) the electric energy dispatched and
21 sold by the qualified energy storage system (ex-
22 pressed in megawatt-hours); and

23 “(B) the difference between—

24 “(i) 1.0; and

1 “(ii) the quotient obtained by divid-
2 ing—

3 “(I) the average carbon intensity
4 of the clean energy stored in the
5 qualified energy storage system, as
6 determined in accordance with sub-
7 section (g) (expressed in metric tons
8 per megawatt-hour); by

9 “(II) the applicable carbon inten-
10 sity.

11 “(8) NEGATIVE CREDITS.—Notwithstanding
12 any other provision of this subsection, the Secretary
13 shall not issue a negative quantity of Federal clean
14 energy credits to any generator.

15 “(9) MAXIMUM QUANTITY OF CREDITS.—Not-
16 withstanding paragraphs (1) through (6), the total
17 quantity of Federal clean energy credits issued
18 under those paragraphs to a generator for a cal-
19 endar year shall not exceed the number of mega-
20 watt-hours of the applicable annual qualified genera-
21 tion of the generator.

22 “(10) INNOVATION MULTIPLIER.—

23 “(A) IN GENERAL.—Notwithstanding
24 paragraphs (1) through (6), until the applicable
25 date described in subparagraph (C), the quan-

1 tity of Federal clean energy credits issued
2 under this section to—

3 “(i) a generator that is a qualified
4 dispatchable low-emission technology or a
5 qualified dispatchable zero-emission tech-
6 nology shall be equal to the product ob-
7 tained by multiplying—

8 “(I) the qualified generation of
9 that generator;

10 “(II) the difference between—

11 “(aa) 1.0; and

12 “(bb) the quotient obtained
13 by dividing—

14 “(AA) the carbon inten-
15 sity of the generator, as de-
16 termined in accordance with
17 subsection (g) (expressed in
18 metric tons per megawatt-
19 hour); by

20 “(BB) the applicable
21 carbon intensity; and

22 “(III) 1.5;

23 “(ii) a generator that is a dispatch-
24 able zero-emission technology that is not
25 issued Federal clean energy credits under

1 clause (i) shall be equal to the product ob-
2 tained by multiplying—

3 “(I) the qualified generation of
4 that generator;

5 “(II) the difference between—

6 “(aa) 1.0; and

7 “(bb) the quotient obtained
8 by dividing—

9 “(AA) the carbon inten-
10 sity of the generator, as de-
11 termined in accordance with
12 subsection (g) (expressed in
13 metric tons per megawatt-
14 hour); by

15 “(BB) the applicable
16 carbon intensity; and

17 “(III) the appropriate multiplier,
18 as determined under subparagraph
19 (B)(i); and

20 “(iii) a generator that is a dispatch-
21 able low-emission technology that is not
22 issued Federal clean energy credits under
23 clause (i) shall be equal to the product ob-
24 tained by multiplying—

1 “(I) the qualified generation of
2 that generator;

3 “(II) the difference between—

4 “(aa) 1.0; and

5 “(bb) the quotient obtained
6 by dividing—

7 “(AA) the carbon inten-
8 sity of the generator, as de-
9 termined in accordance with
10 subsection (g) (expressed in
11 metric tons per megawatt-
12 hour); by

13 “(BB) the applicable
14 carbon intensity; and

15 “(III) the appropriate multiplier,
16 as determined under subparagraph
17 (B)(ii).

18 “(B) MULTIPLIERS.—The multipliers re-
19 ferred to in clauses (ii)(III) and (iii)(III) of
20 subparagraph (A) are—

21 “(i) for a dispatchable zero-emission
22 technology described in subparagraph
23 (A)(ii)—

24 “(I) for the period beginning on
25 the date of enactment of this section

1 and ending on the date on which the
2 total capacity of dispatchable zero-
3 emission technologies in the United
4 States is greater than 5 gigawatts, as
5 determined by the Secretary, 1.25;

6 “(II) for the period beginning on
7 the day after the date of expiration of
8 the period described in subclause (I)
9 and ending on the date on which the
10 total capacity of dispatchable zero-
11 emission technologies in the United
12 States is greater than 10 gigawatts,
13 as determined by the Secretary, 1.2;

14 “(III) for the period beginning on
15 the day after the date of expiration of
16 the period described in subclause (II)
17 and ending on the date on which the
18 total capacity of dispatchable zero-
19 emission technologies in the United
20 States is greater than 15 gigawatts,
21 as determined by the Secretary, 1.15;
22 and

23 “(IV) for the period beginning on
24 the day after the date of expiration of
25 the period described in subclause (III)

1 and ending on the date on which the
2 total capacity of dispatchable zero-
3 emission technologies in the United
4 States is greater than 20 gigawatts,
5 as determined by the Secretary, 1.1;
6 and

7 “(ii) for a dispatchable low-emission
8 technology described in subparagraph
9 (A)(iii)—

10 “(I) for the period beginning on
11 the date of enactment of this section
12 and ending on the date on which the
13 total capacity of dispatchable low-
14 emission technologies and
15 dispatchable zero-emission tech-
16 nologies in the United States is great-
17 er than 5 gigawatts, as determined by
18 the Secretary, 1.25;

19 “(II) for the period beginning on
20 the day after the date of expiration of
21 the period described in subclause (I)
22 and ending on the date on which the
23 total capacity of dispatchable low-
24 emission technologies and
25 dispatchable zero-emission tech-

1 nologies in the United States is great-
2 er than 10 gigawatts, as determined
3 by the Secretary, 1.2;

4 “(III) for the period beginning on
5 the day after the date of expiration of
6 the period described in subclause (II)
7 and ending on the date on which the
8 total capacity of dispatchable low-
9 emission technologies and
10 dispatchable zero-emission tech-
11 nologies in the United States is great-
12 er than 15 gigawatts, as determined
13 by the Secretary, 1.15; and

14 “(IV) for the period beginning on
15 the day after the date of expiration of
16 the period described in subclause (III)
17 and ending on the date on which the
18 total capacity of dispatchable low-
19 emission technologies and
20 dispatchable zero-emission tech-
21 nologies in the United States is great-
22 er than 20 gigawatts, as determined
23 by the Secretary, 1.1.

1 “(C) PHASE-OUT.—The quantity of Fed-
2 eral clean energy credits issued under this sec-
3 tion to—

4 “(i) a generator described in subpara-
5 graph (A)(i) that is—

6 “(I) a qualified dispatchable low-
7 emission technology shall be deter-
8 mined in accordance with subpara-
9 graph (A)(iii), effective beginning on
10 the earlier of—

11 “(aa) the date on which the
12 qualified dispatchable low-emis-
13 sion technology has been in serv-
14 ice for 10 years; and

15 “(bb) January 1, 2035; and

16 “(II) a qualified dispatchable
17 zero-emission technology shall be de-
18 termined in accordance with subpara-
19 graph (A)(ii), effective beginning on
20 the date on which the qualified
21 dispatchable zero-emission technology
22 has been in service for 10 years;

23 “(ii) a generator described in subpara-
24 graph (A)(ii) shall be determined in ac-
25 cordance with paragraphs (1) through (6),

1 effective beginning on January 1, 2050;
2 and

3 “(iii) a generator described in sub-
4 paragraph (A)(iii) shall be determined in
5 accordance with paragraphs (1) through
6 (6), effective beginning on January 1,
7 2040.

8 “(D) PROHIBITION ON DOUBLE RE-
9 CEIPTS.—A generator that receives Federal
10 clean energy credits under subparagraph (A)
11 may not receive any additional Federal clean
12 energy credit under any of paragraphs (1)
13 through (6).

14 “(g) DETERMINATION OF CARBON INTENSITY AND
15 CREDIT VALUE.—

16 “(1) IN GENERAL.—For purposes of deter-
17 mining the quantity of Federal clean energy credits
18 under subsection (f), except as otherwise provided in
19 this subsection, the Secretary shall determine the
20 carbon intensity of each generator using data and
21 methods from the Air Emission Measurement Center
22 of the Environmental Protection Agency for emission
23 testing and monitoring, including—

24 “(A) Continuous Emission Monitoring Sys-
25 tems; and

1 “(B) Predictive Emission Monitoring Sys-
2 tems.

3 “(2) NATURAL GAS ADJUSTMENT.—Except as
4 provided in paragraph (4), the Secretary shall adjust
5 the carbon intensity determined under paragraph (1)
6 for each generator using natural gas by applying the
7 methane leakage rates assumed in the 9-region
8 MARKAL Database of the Environmental Protec-
9 tion Agency (commonly known as the ‘EPAUS9R
10 database’).

11 “(3) NONEMITTING GENERATORS.—Except as
12 provided in paragraph (4), the Secretary shall assign
13 a carbon intensity of zero for any generator that
14 does not produce emissions on electric energy gen-
15 eration, including any generator that uses renewable
16 energy, hydropower, or nuclear power.

17 “(4) DETERMINATION AND NATIONAL ACADEMY
18 OF SCIENCES STUDY.—The Secretary shall—

19 “(A) not later than 180 days after the date
20 of enactment of this section, enter into an
21 agreement with the National Academy of
22 Sciences, under which the Academy shall—

23 “(i) evaluate data, models, and meth-
24 odologies for quantifying lifecycle green-
25 house gas emissions associated with gener-

1 ating electric energy from each type of sig-
2 nificant source of clean energy, including
3 the sources described in subparagraphs (A)
4 and (B) of subsection (b)(8);

5 “(ii) evaluate data, models, and meth-
6 odologies for determining the appropriate
7 credit value for use in the quantification of
8 Federal clean energy credits under sub-
9 section (f) for—

10 “(I) qualified renewable biomass,
11 taking into consideration total
12 lifecycle carbon dynamics, including—

13 “(aa) carbon absorbed
14 through the regrowth of vegeta-
15 tion;

16 “(bb) avoided decomposition
17 relating to the full fuel lifecycle;

18 “(cc) carbon sink value from
19 land use changes and temporal
20 changes in forest carbon seques-
21 tration; and

22 “(dd) lifecycle greenhouse
23 gas emissions, including—

24 “(AA) direct green-
25 house gas emissions; and

1 “(BB) significant indi-
2 rect greenhouse gas emis-
3 sions, including all stages of
4 fuel and feedstock produc-
5 tion and distribution and
6 feedstock generation or ex-
7 traction through the dis-
8 tribution and delivery of the
9 finished fuel to electric con-
10 sumers;

11 “(II) qualified waste-to-energy,
12 taking into consideration total
13 lifecycle carbon dynamics, including—

14 “(aa) avoided decomposition
15 relating to the feedstock lifecycle;
16 and

17 “(bb) lifecycle greenhouse
18 gas emissions, including—

19 “(AA) direct green-
20 house gas emissions; and

21 “(BB) indirect green-
22 house gas emissions; and

23 “(III) qualified low-carbon fuels,
24 taking into consideration lifecycle
25 greenhouse gas emissions, including—

1 “(aa) direct greenhouse gas
2 emissions; and

3 “(bb) significant indirect
4 greenhouse gas emissions, includ-
5 ing—

6 “(AA) all stages of fuel
7 and feedstock production
8 and distribution; and

9 “(BB) feedstock gen-
10 eration or extraction
11 through the distribution and
12 delivery of the finished fuel
13 to electric consumers;

14 “(iii) evaluate the appropriateness of
15 the definitions contained in subsection (b)
16 of the terms—

17 “(I) ‘qualified renewable bio-
18 mass’, taking into consideration
19 whether the definition should be ex-
20 panded or contracted;

21 “(II) ‘qualified waste-to-energy’;
22 and

23 “(III) ‘qualified low-carbon fuel’;

24 “(iv) if it is determined under clause
25 (iii)(I) that the definition of the term

1 ‘qualified renewable biomass’ should be ex-
2 panded, evaluate tools for determining the
3 allowable carbon stock removal levels dur-
4 ing defined forest management operations;
5 and

6 “(v) not later than 540 days after the
7 date of enactment of this section, publish
8 a report that includes—

9 “(I) a description of the evalua-
10 tions under clauses (i) through (iv);
11 and

12 “(II) recommendations for—

13 “(aa) determining the car-
14 bon intensity, accounting for
15 lifecycle greenhouse gas emis-
16 sions, of electric energy gen-
17 erated from each type of signifi-
18 cant source of clean energy evalu-
19 ated under clause (i);

20 “(bb) determining the credit
21 value of electric energy generated
22 from qualified renewable bio-
23 mass, qualified waste-to-energy,
24 and qualified low-carbon fuels;

1 “(cc) if applicable, changes
2 to the definitions of the terms
3 ‘qualified renewable biomass’,
4 ‘qualified waste-to-energy’, and
5 ‘qualified low-carbon fuel’; and

6 “(dd) if applicable, deter-
7 mining the allowable carbon
8 stock removal levels during de-
9 fined forest management oper-
10 ations;

11 “(B) not later than 1 year after the date
12 of publication of the report under subparagraph
13 (A)(v), after providing notice an opportunity for
14 public comment, promulgate regulations, taking
15 into consideration the report, for—

16 “(i) calculating lifecycle greenhouse
17 gas emissions of electric energy generated
18 from each type of significant source of
19 clean energy evaluated under subparagraph
20 (A)(i);

21 “(ii) determining the carbon intensity
22 of electric energy generated from each type
23 of significant source of clean energy evalu-
24 ated under subparagraph (A)(i); and

1 “(iii) determining the credit value of
2 electric energy generated from qualified re-
3 newable biomass, qualified waste-to-energy,
4 and qualified low-carbon fuels; and

5 “(C) if recommended in the report under
6 subparagraph (A)(v)(II)(cc), submit to Con-
7 gress recommendations relating to changes to
8 the definitions of the terms ‘qualified renewable
9 biomass’, ‘qualified waste-to-energy’, and ‘quali-
10 fied low-carbon fuel’ for purposes of this sec-
11 tion.

12 “(5) CONSULTATION.—The Secretary shall con-
13 sult with—

14 “(A) in determining carbon intensities of
15 generators pursuant to paragraph (1) and mak-
16 ing adjustments pursuant to paragraph (2), the
17 Administrator of the Environmental Protection
18 Agency;

19 “(B) in promulgating regulations for calcu-
20 lating lifecycle greenhouse gas emissions pursu-
21 ant to paragraph (4)(B)(i) and determining
22 carbon intensities pursuant to paragraph
23 (4)(B)(ii), the Administrator of the Environ-
24 mental Protection Agency;

1 “(C) in promulgating regulations for deter-
2 mining appropriate credit values pursuant to
3 paragraph (4)(B)(iii)—

4 “(i) the Administrator of the Environ-
5 mental Protection Agency;

6 “(ii) the Secretary of Agriculture; and

7 “(iii) the Secretary of the Interior;

8 and

9 “(D) in making recommendations to Con-
10 gress under paragraph (4)(C), the Adminis-
11 trator of the Environmental Protection Agency,
12 acting in consultation with the Scientific Advi-
13 sory Board of the Environmental Protection
14 Agency.

15 “(h) CIVIL PENALTIES.—

16 “(1) IN GENERAL.—Subject to paragraph (2), a
17 retail electricity supplier that fails to meet the re-
18 quirements of this section shall be subject to a civil
19 penalty in an amount equal to the product obtained
20 by multiplying—

21 “(A) the number of kilowatt-hours of elec-
22 tric energy sold by the retail electricity supplier
23 to electric consumers in violation of subsection
24 (c); and

1 “(B) 200 percent of the value of the alter-
2 native compliance payment, as adjusted under
3 subsection (i)(2).

4 “(2) WAIVERS AND MITIGATION.—

5 “(A) FORCE MAJEURE.—The Secretary
6 may mitigate or waive a civil penalty under
7 paragraph (1) if the applicable retail electricity
8 supplier was unable to comply with an applica-
9 ble requirement of this section for reasons out-
10 side of the reasonable control of the retail elec-
11 tricity supplier.

12 “(B) REDUCTION FOR STATE PEN-
13 ALTIES.—The Secretary shall reduce the
14 amount of a penalty determined under para-
15 graph (1) by the amount paid by the applicable
16 retail electricity supplier to a State for failure
17 to comply with the requirement of a State re-
18 newable energy program, if the State require-
19 ment is more stringent than the applicable re-
20 quirement of this section.

21 “(3) PROCEDURE FOR ASSESSING PENALTY.—

22 The Secretary shall assess a civil penalty under this
23 subsection in accordance with section 333(d) of the
24 Energy Policy and Conservation Act (42 U.S.C.
25 6303(d)).

1 “(i) ALTERNATIVE COMPLIANCE PAYMENTS.—

2 “(1) IN GENERAL.—A retail electricity supplier
3 may satisfy the requirements of subsection (c), in
4 whole or in part, by submitting, in lieu of Federal
5 clean energy credits issued under this section, a pay-
6 ment equal to the amount required under subsection
7 (d)(1)(C), in accordance with such regulations as the
8 Secretary may promulgate, subject to paragraph (2).

9 “(2) ADJUSTMENT.—Not later than December
10 1 of the second full calendar year beginning after
11 the date of enactment of this section, and annually
12 thereafter, the Secretary shall—

13 “(A) increase the rate of the alternative
14 compliance payment under subsection (d)(1)(C)
15 by—

16 “(i) during the period beginning on
17 the date of enactment of this section and
18 ending on December 31, 2029, 3 percent;
19 and

20 “(ii) beginning on January 1, 2030, 5
21 percent; and

22 “(B) additionally adjust that rate for infla-
23 tion, as the Secretary determines to be nec-
24 essary.

1 “(j) STATE ENERGY EFFICIENCY, CLEAN ENERGY
2 DEPLOYMENT, AND ELECTRIC CONSUMER BILL REDUC-
3 TION PROGRAM.—

4 “(1) ESTABLISHMENT.—Not later than Decem-
5 ber 1 of the first calendar year beginning after the
6 date of enactment of this section, the Secretary shall
7 establish a State energy efficiency, clean energy de-
8 ployment, and electric consumer bill reduction pro-
9 gram.

10 “(2) FUNDING.—All funds collected by the Sec-
11 retary as alternative compliance payments under
12 subsection (i), or as civil penalties under subsection
13 (h), shall be used solely to carry out the program
14 under this subsection.

15 “(3) DISTRIBUTION TO STATES.—

16 “(A) IN GENERAL.—Of the funds de-
17 scribed in paragraph (2), an amount equal to
18 75 percent shall be used by the Secretary, with-
19 out further appropriation or fiscal year limita-
20 tion, to provide funds to States, in an amount
21 determined proportionally based on the
22 amounts collected from each State—

23 “(i) for the implementation of State
24 energy efficiency plans under section 362

1 of the Energy Policy and Conservation Act
2 (42 U.S.C. 6322);

3 “(ii) for the conduct of clean energy
4 programs in the State; and

5 “(iii) to carry out activities to reduce
6 the amount of electricity bills for house-
7 holds in the State below 300 percent of the
8 poverty line (as defined in section 673 of
9 the Community Services Block Grant Act
10 (42 U.S.C. 9902)).

11 “(B) ACTION BY STATES.—A State that
12 receives funds under this paragraph shall main-
13 tain such records and evidence of compliance as
14 the Secretary may require.

15 “(4) GUIDELINES AND CRITERIA.—

16 “(A) BUY AMERICAN COMPLIANCE.—The
17 funds made available under the program estab-
18 lished under this subsection shall not be used
19 for a project unless the project achieves compli-
20 ance with all applicable requirements of chapter
21 83 of title 41, United States Code (formerly
22 known as the ‘Buy American Act’).

23 “(B) DAVIS-BACON COMPLIANCE.—

24 “(i) IN GENERAL.—All laborers and
25 mechanics employed on projects funded di-

1 rectly, or assisted in whole or in part, by
2 this section shall be paid wages at rates
3 not less than those prevailing on projects
4 of a character similar in the locality as de-
5 termined by the Secretary of Labor in ac-
6 cordance with subchapter IV of chapter 31
7 of part A of subtitle II of title 40, United
8 States Code (commonly referred to as the
9 ‘Davis-Bacon Act’).

10 “(ii) AUTHORITY.—With respect to
11 the labor standards specified in this sub-
12 paragraph, the Secretary of Labor shall
13 have the authority and functions set forth
14 in Reorganization Plan Numbered 14 of
15 1950 (64 Stat. 1267; 5 U.S.C. App.) and
16 section 3145 of title 40, United States
17 Code.

18 “(C) ADDITIONAL GUIDELINES AND CRI-
19 TERIA.—The Secretary may issue such addi-
20 tional guidelines and criteria for the program
21 under this subsection as the Secretary deter-
22 mines to be appropriate.

23 “(k) STATE PROGRAMS.—

24 “(1) SAVINGS PROVISION.—

1 “(A) IN GENERAL.—Subject to subpara-
2 graph (B), nothing in this section affects the
3 authority of a State or a political subdivision of
4 a State to adopt or enforce any law or regula-
5 tion relating to—

6 “(i) clean or renewable energy; or

7 “(ii) the regulation of any retail elec-
8 tricity supplier.

9 “(B) FEDERAL LAW.—No law or regula-
10 tion of a State or a political subdivision of a
11 State may relieve a retail electricity supplier
12 from the obligation to comply with an applica-
13 ble requirement of this section.

14 “(2) COORDINATION.—The Secretary, in con-
15 sultation with States that have clean and renewable
16 energy programs in effect, shall facilitate, to the
17 maximum extent practicable, coordination between
18 the Federal clean energy program under this section
19 and the relevant State clean and renewable energy
20 programs.

21 “(1) INFORMATION COLLECTION.—

22 “(1) IN GENERAL.—The Secretary may require
23 any retail electricity supplier, generator, or any
24 other entity that the Secretary determines appro-
25 priate to submit to the Secretary any information

1 the Secretary determines to be appropriate to carry
2 out this section.

3 “(2) FAILURE TO SUBMIT; FALSE OR MIS-
4 LEADING INFORMATION.—An entity required to sub-
5 mit information pursuant to paragraph (1) that fails
6 to submit the information, or submits false or mis-
7 leading information, shall be in violation of this sec-
8 tion.

9 “(m) REPORT ON CLEAN ENERGY RESOURCES THAT
10 DO NOT GENERATE ELECTRIC ENERGY.—

11 “(1) IN GENERAL.—Not later than 3 years
12 after the date of enactment of this section, the Sec-
13 retary shall submit to Congress a report examining
14 mechanisms to supplement the standard under this
15 section by addressing clean energy resources that do
16 not generate electric energy but that may substan-
17 tially reduce overall energy emissions, including en-
18 ergy efficiency, demand response, flexible load, bene-
19 ficial electrification, microgrids, biomass converted
20 to thermal energy, geothermal energy collected using
21 heat pumps, thermal energy delivered through dis-
22 trict heating systems, and waste heat used as indus-
23 trial process heat.

24 “(2) POTENTIAL INTEGRATION.—The report
25 under paragraph (1) shall examine the benefits and

1 challenges of integrating the additional clean energy
2 resources into the standard established by this sec-
3 tion, including—

4 “(A) the extent to which such an integra-
5 tion would achieve the purposes of this section;

6 “(B) the manner in which a baseline de-
7 scribing the use of the resources could be devel-
8 oped that would ensure that only incremental
9 action that increased the use of the resources
10 received credit; and

11 “(C) the challenges of crediting the re-
12 sources, alone or in combination with other re-
13 sources, in a comparable manner between orga-
14 nized markets and vertically integrated markets
15 to incentivize sufficient deployment of those re-
16 sources to support efficient integration into the
17 standard.

18 “(3) COMPLEMENTARY POLICIES.—The report
19 under paragraph (1) shall examine the benefits and
20 challenges of using complementary policies or stand-
21 ards, other than the standard established under this
22 section, to provide effective incentives for using the
23 additional clean energy resources.

24 “(4) LEGISLATIVE RECOMMENDATIONS.—As
25 part of the report under paragraph (1), the Sec-

1 retary shall provide legislative recommendations for
2 changes to the standard established under this sec-
3 tion or new complementary policies that would pro-
4 vide effective incentives for using the additional
5 clean energy resources.

6 “(n) PERIODIC REVIEW AND ADJUSTMENTS.—

7 “(1) NATIONAL ACADEMY OF SCIENCES RE-
8 VIEW.—The Secretary shall enter into an agreement
9 with the National Academy of Sciences under which
10 the Academy shall, not later than July 1, 2028, and
11 every 10 years thereafter, submit to Congress and
12 the Secretary a comprehensive evaluation of all as-
13 pects of the standard established under this section,
14 including—

15 “(A) an evaluation of the effectiveness of
16 the standard in decreasing the aggregate net
17 carbon dioxide equivalent emissions in the elec-
18 tric sector, including—

19 “(i) a comparison of—

20 “(I) the actual carbon dioxide
21 equivalent emissions associated with
22 the electric sector for the preceding
23 calendar year; and

1 “(II)(aa) for the initial review,
2 900,000,000 metric tons of carbon di-
3 oxide equivalent;

4 “(bb) for the review conducted
5 with respect to calendar year 2038,
6 600,000,000 metric tons of carbon di-
7 oxide equivalent; or

8 “(cc) if the Academy determines
9 that an emissions value described in
10 item (aa) or (bb) is inappropriate
11 after taking into consideration
12 changes in electric energy consump-
13 tion, and in emissions relating to en-
14 ergy use outside of the electric sector,
15 such emissions as the Academy deter-
16 mines to be appropriate for the appli-
17 cable review year; and

18 “(ii) an evaluation of the methods by
19 which the quantity of Federal clean energy
20 credits is determined, including—

21 “(I) alternative methods of quan-
22 tifying credits for clean energy re-
23 sources eligible to receive Federal
24 clean energy credits under this section
25 that may be more effective, such as—

1 “(aa) issuing credits based
2 on the difference between the
3 carbon intensity of a generator
4 and the marginal emissions rate
5 in a given hour and balancing
6 area; and

7 “(bb) adjusting the innova-
8 tion multipliers; and

9 “(II) potential methods of cred-
10 iting other clean energy resources not
11 already addressed in the report under
12 subsection (m);

13 “(B) the impact of the standard on the re-
14 liability, resilience, security, and safety of elec-
15 tricity generation, transmission, and distribu-
16 tion;

17 “(C) the impact of the standard on the
18 function of regulated and deregulated electricity
19 markets;

20 “(D) the net benefits or costs of the stand-
21 ard to the United States and the States, includ-
22 ing—

23 “(i) the effects on electricity demand
24 and prices;

1 “(ii) the economic development bene-
2 fits of investment;

3 “(iii) lifecycle environmental and safe-
4 ty costs and benefits;

5 “(iv) the impacts on public health and
6 health care costs; and

7 “(v) avoided costs relating to environ-
8 mental damages and adaptation invest-
9 ments that otherwise would have been re-
10 quired;

11 “(E) the impact of the standard on the
12 emissions of behind-the-meter and off-grid elec-
13 tricity generation;

14 “(F) recommendations regarding potential
15 changes to the standard, such as—

16 “(i) to regulations and procedures for
17 implementing the standard;

18 “(ii) to the structure and specific de-
19 sign elements of the standard, such as—

20 “(I) if the comparison of emis-
21 sions under paragraph (1)(A)(i) re-
22 veals that actual emissions for the
23 electric sector are greater than the re-
24 quired emissions under paragraph
25 (1)(A)(i)(II), changes to the values of

1 the growth rates, the applicable car-
2 bon intensity, and alternative compli-
3 ance payment to eliminate the gap be-
4 tween actual and required emissions;

5 “(II) the quantification of Fed-
6 eral clean energy credits; and

7 “(III) the value of and eligibility
8 for the innovation multiplier; and

9 “(iii) to the structure and administra-
10 tion of the Federal clean energy credit
11 trading program; and

12 “(G) recommendations regarding potential
13 changes to related public policies or creation of
14 new complementary policies.

15 “(2) RECOMMENDATIONS TO CONGRESS.—Not
16 later than January 1, 2029, and not less frequently
17 than once every 10 years thereafter, the Secretary
18 shall submit to the Committee on Energy and Nat-
19 ural Resources of the Senate and the Committee on
20 Energy and Commerce of the House of Representa-
21 tives a report including recommendations for modi-
22 fications and improvements to the standard estab-
23 lished under this section, including an explanation of
24 the inconsistencies, if any, between—

1 “(A) the recommendations of the Sec-
2 retary; and

3 “(B) the recommendations included in the
4 evaluation of the National Academy of Sciences
5 under paragraph (1).

6 “(3) CONGRESSIONAL ACTION.—Not later than
7 January 1, 2030, and not less frequently than once
8 every 10 years thereafter, Congress shall enact legis-
9 lation that amends this section or establishes new
10 policies based on the recommendations submitted by
11 the Secretary under paragraph (2).

12 “(4) ADJUSTMENTS UPON FAILURE OF CON-
13 GRESSIONAL ACTION.—

14 “(A) IN GENERAL.—If Congress fails to
15 enact legislation under paragraph (3) by an ap-
16 plicable deadline, the Secretary—

17 “(i) shall, in any case in which the
18 comparison of emissions under paragraph
19 (1)(A)(i) reveals that actual emissions for
20 the electric sector are greater than the re-
21 quired emissions under paragraph
22 (1)(A)(i)(II), make such compensatory ad-
23 justments to the standard established
24 under this section as the Secretary con-
25 siders to be necessary, based on, and con-

1 sistent with, the findings and recommenda-
2 tions of the National Academy of Sciences
3 under paragraph (1)(F)(ii)(I), to eliminate
4 the gap between actual and required emis-
5 sions by not later than 3 years after the
6 date of the applicable deadline by—

7 “(I) increasing the fast growth
8 rate;

9 “(II) increasing the slow growth
10 rate;

11 “(III) increasing the small
12 growth rate;

13 “(IV) decreasing the applicable
14 carbon intensity;

15 “(V) increasing the alternative
16 compliance payment under subsection
17 (d)(1)(C); or

18 “(VI) taking a combination of ac-
19 tions described in subclauses (I)
20 through (V); and

21 “(ii) if the evaluation of the crediting
22 system under paragraph (1)(A)(ii) de-
23 scribes a more-effective method of issuing
24 Federal clean energy credits to clean en-
25 ergy resources, may make other modifica-

1 Department of Energy for the research, development,
2 demonstration, and deployment of clean energy tech-
3 nologies and portfolios for the purpose of meeting the re-
4 quirements established under section 610 of the Public
5 Utility Regulatory Policies Act of 1978 (as added by sec-
6 tion 2(a)).

7 (b) REQUIREMENTS.—In establishing the program
8 under subsection (a), the Secretary of Energy shall—

9 (1) identify and coordinate, across all relevant
10 program offices throughout the Department of En-
11 ergy, key areas of existing and future research with
12 respect to a portfolio of technologies and approaches;

13 (2) with respect to dispatchable low-emission
14 technologies and dispatchable zero-emission tech-
15 nologies (as defined in sections 610(b) of the Public
16 Utility Regulatory Policies Act of 1978 (as added by
17 section 2(a))—

18 (A) prioritize programs that would accel-
19 erate the research, development, demonstration,
20 and deployment of technologies by—

21 (i) identifying specific applications of
22 those technologies;

23 (ii) cataloguing existing Department
24 of Energy programs and research to ad-
25 vance the specific applications; and

1 (iii) establishing a center within the
2 Department of Energy to coordinate re-
3 search priorities and demonstration pro-
4 grams for the specific applications;

5 (B) adopt long-term cost, performance,
6 and deployment targets for the specific applica-
7 tions identified under subparagraph (A)(i), in-
8 cluding a goal of conducting not fewer than 5
9 technology demonstrations in the United States
10 by December 31, 2030;

11 (C) identify opportunities to work with
12 States and the private sector for technology
13 demonstration; and

14 (D) identify barriers to the demonstration
15 and deployment of those technologies;

16 (3) identify approaches to expedite deployment
17 of clean energy technologies by evaluating and avoid-
18 ing or minimizing potential impacts to natural com-
19 munities, ecological resources, and high-quality
20 working land; and

21 (4) recommend to Congress any additional
22 funding needs or policy changes necessary to imple-
23 ment the program.

1 (c) FUNDING.—Subject to the availability of appro-
2 priations, the Secretary of Energy may use amounts avail-
3 able to the Secretary to carry out this section.

○