

110TH CONGRESS
1ST SESSION

S. 309

To amend the Clean Air Act to reduce emissions of carbon dioxide, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JANUARY 16, 2007

Mr. SANDERS (for himself, Mrs. BOXER, Mr. KENNEDY, Mr. MENENDEZ, Mr. LAUTENBERG, Mr. LEAHY, Mr. REED, Mr. AKAKA, Mr. INOUE, Mr. FEINGOLD, and Mr. WHITEHOUSE) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

A BILL

To amend the Clean Air Act to reduce emissions of carbon dioxide, 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 “Global Warming Pollu-
5 tion Reduction Act”.

6 **SEC. 2. GLOBAL WARMING POLLUTION EMISSION REDUC-**
7 **TIONS.**

8 The Clean Air Act (42 U.S.C. 7401 et seq.) is amend-
9 ed by adding at the end the following:

1 **“TITLE VII—COMPREHENSIVE**
 2 **GLOBAL WARMING POLLU-**
 3 **TION REDUCTIONS**

“Sec. 701. Findings.

“Sec. 702. Purposes.

“Sec. 703. Definitions.

“Sec. 704. Global warming pollution emission reductions.

“Sec. 705. Conditions for accelerated global warming pollution emission reduction.

“Sec. 706. Use of allowances for transition assistance and other purposes.

“Sec. 707. Vehicle emission standards.

“Sec. 708. Emission standards for electric generation units.

“Sec. 709. Low-carbon generation requirement.

“Sec. 710. Geological disposal of global warming pollutants.

“Sec. 711. Research and development.

“Sec. 712. Energy efficiency performance standard.

“Sec. 713. Renewable portfolio standard.

“Sec. 714. Standards to account for biological sequestration of carbon.

“Sec. 715. Global warming pollution reporting.

“Sec. 716. Clean energy technology deployment in developing countries.

“Sec. 717. Paramount interest waiver.

“Sec. 718. Effect on other law.

4 **“SEC. 701. FINDINGS.**

5 “Congress finds that—

6 “(1) global warming poses a significant threat
 7 to the national security and economy of the United
 8 States, public health and welfare, and the global en-
 9 vironment;

10 “(2) due largely to an increased use of energy
 11 from fossil fuels, human activities are primarily re-
 12 sponsible for the release of carbon dioxide and other
 13 heat-trapping global warming pollutants that are ac-
 14 cumulating in the atmosphere and causing surface
 15 air and subsurface ocean temperatures to rise;

1 “(3) as of the date of enactment of this title,
2 atmospheric concentrations of carbon dioxide are 35
3 percent higher than those concentrations were 150
4 years ago, at 378 parts per million compared to 280
5 parts per million;

6 “(4) the United States emits more global warm-
7 ing pollutants than any other country, and United
8 States carbon dioxide emissions have increased by an
9 average of 1.3 percent annually since 1990;

10 “(5)(A) during the past 100 years, global tem-
11 peratures have risen by 1.44 degrees Fahrenheit;
12 and

13 “(B) from 1970 to the present, those tempera-
14 tures have risen by almost 1 degree Fahrenheit;

15 “(6) 8 years during the 10-year period begin-
16 ning January 1, 1996, and ending December 31,
17 2005, were among the 10 warmest years on record;

18 “(7) average temperatures in the Arctic have
19 increased by 4 to 7 degrees Fahrenheit during the
20 past 50 years;

21 “(8) global warming has caused—

22 “(A) ocean temperatures to increase, re-
23 sulting in rising sea levels, extensive bleaching
24 of coral reefs worldwide, and an increase in the
25 intensity of tropical storms;

1 “(B) the retreat of Arctic sea ice by an av-
2 erage of 9 percent per decade since 1978;

3 “(C) the widespread thawing of permafrost
4 in polar, subpolar, and mountainous regions;

5 “(D) the redistribution and loss of species;
6 and

7 “(E) the rapid shrinking of glaciers;

8 “(9) the United States must adopt a com-
9 prehensive and effective national program of manda-
10 tory limits and incentives to reduce global warming
11 pollution emissions into the atmosphere;

12 “(10) at the current rate of emission, global
13 warming pollution concentrations in the atmosphere
14 could reach more than 600 parts per million in car-
15 bon dioxide equivalent, and global average mean
16 temperature could rise an additional 2.7 to 11 de-
17 grees Fahrenheit, by the end of the century;

18 “(11) although an understanding of all details
19 of the Earth system is not yet complete, present
20 knowledge indicates that potential future tempera-
21 ture increases could result in—

22 “(A) the further or complete melting of the
23 Antarctic and Greenland ice sheets;

1 “(B) the disruption of the North-Atlantic
2 Thermohaline Circulation (commonly known as
3 the ‘Gulf Stream’);

4 “(C) the extinction of species; and

5 “(D) large-scale disruptions of the natural
6 systems that support life;

7 “(12) there exists an array of technological op-
8 tions for use in reducing global warming pollution
9 emissions, and significant reductions can be attained
10 using a portfolio of options that will not adversely
11 impact the economy;

12 “(13) the ingenuity of the people of the United
13 States will allow the Nation to become a leader in
14 solving global warming; and

15 “(14) it should be a goal of the United States
16 to achieve a reduction in global warming pollution
17 emissions in the United States—

18 “(A) to ensure that the average global
19 temperature does not increase by more than 3.6
20 degrees Fahrenheit (2 degrees Celsius); and

21 “(B) to facilitate the achievement of an av-
22 erage global atmospheric concentration of global
23 warming pollutants that does not exceed 450
24 parts per million in carbon dioxide equivalent.

1 **“SEC. 702. PURPOSES.**

2 “The purposes of this title are—

3 “(1) to achieve a reduction in global warming
4 pollution emissions compatible with ensuring that—

5 “(A) the average global temperature does
6 not increase by more than 3.6 degrees Fahr-
7 enheit (2 degrees Celsius) above the
8 preindustrial average; and

9 “(B) total average global atmospheric con-
10 centrations of global warming pollutants do not
11 exceed 450 parts per million in carbon dioxide
12 equivalent;

13 “(2) to reduce by calendar year 2050 the aggre-
14 gate net level of global warming pollution emissions
15 of the United States to a level that is 80 percent
16 below the aggregate net level of global warming pol-
17 lution emissions for calendar year 1990;

18 “(3) to allow for an acceleration of reductions
19 in global warming pollution emissions to prevent—

20 “(A) average global temperature from in-
21 creasing by more than 3.6 degrees Fahrenheit
22 (2 degrees Celsius) above the preindustrial av-
23 erage; or

24 “(B) global atmospheric concentrations of
25 global warming pollutants from exceeding 450
26 parts per million;

1 “(4) to establish a motor vehicle global warm-
2 ing pollution emission requirement;

3 “(5) to require electric generation units to meet
4 a global warming pollution emission standard;

5 “(6) to establish rules for the safe geological se-
6 questration of carbon dioxide;

7 “(7) to encourage energy efficiency and the use
8 of renewable energy by establishing a renewable
9 portfolio standard and an energy efficiency portfolio
10 standard;

11 “(8) to provide for research relating to, and de-
12 velopment of, the technologies to control global
13 warming pollution emissions;

14 “(9) to position the United States as the world
15 leader in reducing the risk of the potentially dev-
16 astating, wide-ranging impacts associated with glob-
17 al warming; and

18 “(10) to promote, through leadership by the
19 United States, accelerated reductions in global
20 warming pollution from other countries with signifi-
21 cant global warming pollution emissions.

22 **“SEC. 703. DEFINITIONS.**

23 “In this title:

24 “(1) **ACADEMY.**—The term ‘Academy’ means
25 the National Academy of Sciences.

1 “(2) CARBON DIOXIDE EQUIVALENT.—The
2 term ‘carbon dioxide equivalent’ means, for each
3 global warming pollutant, the quantity of the global
4 warming pollutant that makes the same contribution
5 to global warming as 1 metric ton of carbon dioxide,
6 as determined by the Administrator, taking into ac-
7 count the study and report described in section
8 705(a).

9 “(3) FACILITY.—The term ‘facility’ means all
10 buildings, structures, or installations that are—

11 “(A) located on 1 or more contiguous or
12 adjacent properties under common control of
13 the same persons; and

14 “(B) located in the United States.

15 “(4) GLOBAL WARMING POLLUTANT.—The
16 term ‘global warming pollutant’ means—

17 “(A) carbon dioxide;

18 “(B) methane;

19 “(C) nitrous oxide;

20 “(D) hydrofluorocarbons;

21 “(E) perfluorocarbons;

22 “(F) sulfur hexafluoride; and

23 “(G) any other anthropogenically-emitted
24 gas that the Administrator, after notice and

1 comment, determines to contribute to global
2 warming.

3 “(5) GLOBAL WARMING POLLUTION.—The term
4 ‘global warming pollution’ means any combination of
5 1 or more global warming pollutants emitted into
6 the ambient air or atmosphere.

7 “(6) MARKET-BASED PROGRAM.—The term
8 ‘market-based program’ means a program that
9 places an absolute limit on the aggregate net global
10 warming pollution emissions of 1 or more sectors of
11 the economy of the United States, while allowing the
12 transfer or sale of global warming pollution emission
13 allowances.

14 “(7) NAS REPORT.—The term ‘NAS report’
15 means a report completed by the Academy under
16 subsection (a) or (b) of section 705.

17 **“SEC. 704. GLOBAL WARMING POLLUTION EMISSION RE-**
18 **DUCTIONS.**

19 “(a) EMISSION REDUCTION GOAL.—Congress de-
20 clares that—

21 “(1) it shall be the goal of the United States,
22 acting in concert with other countries that emit glob-
23 al warming pollutants, to achieve a reduction in
24 global warming pollution emissions—

1 “(A) to ensure that the average global
2 temperature does not increase by more than 3.6
3 degrees Fahrenheit (2 degrees Celsius); and

4 “(B) to facilitate the achievement of an av-
5 erage global atmospheric concentration of global
6 warming pollutants that does not exceed 450
7 parts per million in carbon dioxide equivalent;
8 and

9 “(2) in order to achieve the goal described in
10 paragraph (1), the United States shall reduce the
11 global warming pollution emissions of the United
12 States by a quantity that is proportional to the
13 share of the United States of the reductions that are
14 necessary—

15 “(A) to ensure that the average global
16 temperature does not increase more than 3.6
17 degrees Fahrenheit (2 degrees Celsius); and

18 “(B) to stabilize average global warming
19 pollution concentrations globally at or below
20 450 parts per million in carbon dioxide equiva-
21 lent.

22 “(b) EMISSION REDUCTION MILESTONES FOR
23 2020.—

24 “(1) IN GENERAL.—To achieve the goal de-
25 scribed in subsection (a)(1), not later than 2 years

1 after the date of enactment of this title, after an op-
2 portunity for public notice and comment, the Admin-
3 istrator shall promulgate any rules that are nec-
4 essary to reduce, by not later than January 1, 2020,
5 the aggregate net levels of global warming pollution
6 emissions of the United States to the aggregate net
7 level of those global warming pollution emissions
8 during calendar year 1990.

9 “(2) ACHIEVEMENT OF MILESTONES.—To the
10 maximum extent practicable, the reductions de-
11 scribed in paragraph (1) shall be achieved through
12 an annual reduction in the aggregate net level of
13 global warming pollution emissions of the United
14 States of approximately 2 percent for each of cal-
15 endar years 2010 through 2020.

16 “(c) EMISSION REDUCTION MILESTONES FOR 2030,
17 2040, AND 2050.—Except as described in subsection (d),
18 not later than January 1, 2018, after an opportunity for
19 public notice and comment, the Administrator shall pro-
20 mulgate any rules that are necessary to reduce the aggre-
21 gate net levels of global warming pollution emissions of
22 the United States—

23 “(1) by calendar year 2030, by $\frac{1}{3}$ of 80 percent
24 of the aggregate net level of global warming pollu-

1 tion emissions of the United States during calendar
2 year 1990;

3 “(2) by calendar year 2040, by $\frac{2}{3}$ of 80 percent
4 of the aggregate net level of the global warming pol-
5 lution emissions of the United States during cal-
6 endar year 1990; and

7 “(3) by calendar year 2050, by 80 percent of
8 the aggregate net level of global warming pollution
9 emissions of the United States during calendar year
10 1990.

11 “(d) ACCELERATED EMISSION REDUCTION MILE-
12 STONES.—If an NAS report determines that any of the
13 events described in section 705(a)(2) have occurred, or are
14 more likely than not to occur in the foreseeable future,
15 not later than 2 years after the date of completion of the
16 NAS report, the Administrator, after an opportunity for
17 public notice and comment and taking into account the
18 new information reported in the NAS report, may adjust
19 the milestones under this section and promulgate any
20 rules that are necessary—

21 “(1) to reduce the aggregate net levels of global
22 warming pollution emissions from the United States
23 on an accelerated schedule; and

24 “(2) to minimize the effects of rapid climate
25 change and achieve the goals of this title.

1 “(e) REPORT ON ACHIEVEMENT OF MILESTONES.—
2 If an NAS report determines that a milestone under para-
3 graph (1) or (2) of subsection (c) cannot be achieved be-
4 cause of technological infeasibility, the Administrator shall
5 submit to Congress a notification of that determination.

6 “(f) EMISSION REDUCTION POLICIES.—

7 “(1) IN GENERAL.—In implementing sub-
8 sections (a) through (e), the Administrator may es-
9 tablish 1 or more market-based programs.

10 “(2) MARKET-BASED PROGRAM POLICIES.—

11 “(A) IN GENERAL.—In implementing any
12 market-based program, the Administrator shall
13 allocate to households, communities, and other
14 entities described in section 706(a) any global
15 warming pollution emission allowances that are
16 not allocated to entities covered under the emis-
17 sion limitation.

18 “(B) RECOGNITION OF EMISSION REDUC-
19 TIONS MADE IN COMPLIANCE WITH STATE AND
20 LOCAL LAWS.—A market-based program may
21 recognize reductions of global warming pollu-
22 tion emissions made before the effective date of
23 the market-based program if the Administrator
24 determines that—

1 “(i)(I) the reductions were made in
2 accordance with a State or local law;

3 “(II) the State or local law is at least
4 as stringent as the rules established for the
5 market-based program under paragraph
6 (1); and

7 “(III) the reductions are at least as
8 verifiable as reductions made in accordance
9 with those rules; or

10 “(ii) for any given entity subject to
11 the market-based program, the entity dem-
12 onstrates that the entity has made entity-
13 wide reductions of global warming pollu-
14 tion emissions before the effective date of
15 the market-based program, but not earlier
16 than calendar year 1992, that are at least
17 as verifiable as reductions made in accord-
18 ance with the rules established for the
19 market-based program under paragraph
20 (1).

21 “(C) PUBLICATION.—If the Administrator
22 determines that it is necessary to establish a
23 market-based program, the Administrator shall
24 publish notice of the determination in the Fed-
25 eral Register.

1 “(D) LIMITATIONS ON MARKET-BASED
2 PROGRAMS.—

3 “(i) DEFINITIONS.—In this subpara-
4 graph:

5 “(I) ANNUAL ALLOWANCE
6 PRICE.—The term ‘annual allowance
7 price’ means the average market price
8 of global warming pollution emission
9 allowances for a calendar year.

10 “(II) DECLINING EMISSIONS CAP
11 WITH A TECHNOLOGY-INDEXED STOP
12 PRICE.—The term ‘declining emis-
13 sions cap with a technology-indexed
14 stop price’ means a feature of a mar-
15 ket-based program for an industrial
16 sector, or on an economy-wide basis,
17 under which the emissions cap de-
18 clines by a fixed percentage each cal-
19 endar year or, during any year in
20 which the annual allowance price ex-
21 ceeds the technology-indexed stop
22 price, the emissions cap remains the
23 same until the occurrence of the ear-
24 lier of—

1 “(aa) the date on which the
2 annual allowance price no longer
3 exceeds the technology-indexed
4 stop price; or

5 “(bb) the date on which a
6 period of 3 years has elapsed
7 during which the emissions cap
8 has remained unchanged.

9 “(III) EMISSIONS CAP.—The
10 term ‘emissions cap’ means the total
11 number of global warming pollution
12 emission allowances issued for a cal-
13 endar year.

14 “(IV) TECHNOLOGY-INDEXED
15 STOP PRICE.—The term ‘technology-
16 indexed stop price’ means a price per
17 ton of global warming pollution emis-
18 sions determined annually by the Ad-
19 ministrator that is not less than the
20 technology-specific average cost of
21 preventing the emission of 1 ton of
22 global warming pollutants through
23 commercial deployment of any avail-
24 able zero-carbon or low-carbon tech-
25 nologies. With respect to the elec-

1 tricity sector, those technologies shall
2 consist of—

3 “(aa) wind-generated elec-
4 tricity;

5 “(bb) photovoltaic-generated
6 electricity;

7 “(cc) geothermal energy;

8 “(dd) solar thermally-gen-
9 erated energy;

10 “(ee) wave-based forms of
11 energy;

12 “(ff) any fossil fuel-based
13 electric generating technology
14 emitting less than 250 pounds
15 per megawatt hour; and

16 “(gg) any zero-carbon-emit-
17 ting electric generating tech-
18 nology that does not generate ra-
19 dioactive waste.

20 “(ii) IMPLEMENTATION.—In imple-
21 menting any market-based program under
22 this Act, for the period prior to January 1,
23 2020, the Administrator shall consider the
24 impact on the economy of the United
25 States of implementing the program with a

1 declining emissions cap through the use of
2 a technology-indexed stop price.

3 “(iii) OTHER EMITTING SECTORS.—
4 The Administrator may consider the use of
5 a declining emissions cap with a tech-
6 nology-indexed stop price, or similar ap-
7 proaches, for other emitting sectors based
8 on low-carbon or zero-carbon technologies,
9 including—

- 10 “(I) biofuels;
11 “(II) hydrogen power; and
12 “(III) other sources of energy
13 and transportation fuel.

14 “(g) COST-EFFECTIVENESS.—In promulgating regu-
15 lations under this section, the Administrator shall select
16 the most cost-effective options for global warming pollu-
17 tion control and emission reduction strategies.

18 **“SEC. 705. CONDITIONS FOR ACCELERATED GLOBAL WARM-
19 ING POLLUTION EMISSION REDUCTION.**

20 “(a) REPORT ON GLOBAL CHANGE EVENTS BY THE
21 ACADEMY.—

22 “(1) IN GENERAL.—The Administrator shall
23 offer to enter into a contract with the Academy
24 under which the Academy, not later than 2 years
25 after the date of enactment of this title, and every

1 3 years thereafter, shall submit to Congress and the
2 Administrator a report that describes whether any of
3 the events described in paragraph (2)—

4 “(A) have occurred or are more likely than
5 not to occur in the foreseeable future; and

6 “(B) in the judgment of the Academy, are
7 the result of anthropogenic climate change.

8 “(2) EVENTS.—The events referred to in para-
9 graph (1) are—

10 “(A) the exceedance of an atmospheric
11 concentration of global warming pollutants of
12 450 parts per million in carbon dioxide equiva-
13 lent; and

14 “(B) an increase of global average tem-
15 peratures in excess of 3.6 degrees Fahrenheit
16 (2 degrees Celsius) above the preindustrial av-
17 erage.

18 “(b) TECHNOLOGY REPORTS.—

19 “(1) DEFINITION OF TECHNOLOGICALLY IN-
20 FEASIBLE.—In this subsection, the term ‘techno-
21 logically infeasible’, with respect to a technology,
22 means that the technology—

23 “(A) will not be demonstrated beyond lab-
24 oratory-scale conditions;

25 “(B) would be unsafe;

1 “(C) would not reliably reduce global
2 warming pollution emissions; or

3 “(D) would prevent the activity to which
4 the technology applies from meeting or per-
5 forming its primary purpose (such as gener-
6 ating electricity or transporting goods or indi-
7 viduals).

8 “(2) REPORTS.—The Administrator shall offer
9 to enter into a contract with the Academy under
10 which the Academy, not later than 2 years after the
11 date of enactment of this title and every 3 years
12 thereafter, shall submit to Congress and the Admin-
13 istrator a report that describes or analyzes—

14 “(A) the status of current global warming
15 pollution emission reduction technologies, in-
16 cluding—

17 “(i) technologies for capture and dis-
18 posal of global warming pollutants;

19 “(ii) efficiency improvement tech-
20 nologies;

21 “(iii) zero-global-warming-pollution-
22 emitting energy technologies; and

23 “(iv) above- and below-ground biologi-
24 cal sequestration technologies;

1 “(B) whether any of the requirements
2 under this title (including regulations promul-
3 gated under this title) mandate a level of emis-
4 sion control or reduction that, based on avail-
5 able or expected technology, will be techno-
6 logically infeasible at the time at which the re-
7 quirements become effective;

8 “(C) the projected date on which any tech-
9 nology determined to be technologically infeasible
10 will become technologically feasible;

11 “(D) whether any technology determined
12 to be technologically infeasible cannot reason-
13 ably be expected to become technologically fea-
14 sible prior to calendar year 2050; and

15 “(E) the costs of available alternative glob-
16 al warming pollution emission reduction strate-
17 gies that could be used or pursued in lieu of
18 any technologies that are determined to be tech-
19 nologically infeasible.

20 “(3) REPORT EVALUATING 2050 MILESTONE.—

21 Not later than December 31, 2037, the Adminis-
22 trator shall offer to enter into a contract with the
23 Academy under which, not later than December 31,
24 2039, the Academy shall prepare and submit to Con-
25 gress and the Administrator a report on the appro-

1 priateness of the milestone described in section
2 704(c)(3), taking into consideration—

3 “(A) information that was not available as
4 of the date of enactment of this title; and

5 “(B) events that have occurred since that
6 date relating to—

7 “(i) climate change;

8 “(ii) climate change technologies; and

9 “(iii) national and international cli-
10 mate change commitments.

11 “(c) ADDITIONAL ITEMS IN NAS REPORT.—In addi-
12 tion to the information described in subsection (a)(1) that
13 is required to be included in the NAS report, the Academy
14 shall include in the NAS report—

15 “(1) an analysis of the trends in annual global
16 warming pollution emissions by the United States
17 and the other countries that collectively account for
18 more than 90 percent of global warming pollution
19 emissions (including country-specific inventories of
20 global warming pollution emissions and facility-spe-
21 cific inventories of global warming pollution emis-
22 sions in the United States);

23 “(2) an analysis of the trends in global warm-
24 ing pollution concentrations (including observed at-

1 atmospheric concentrations of global warming pollut-
2 ants);

3 “(3) a description of actual and projected global
4 change impacts that may be caused by anthropo-
5 genic global warming pollution emissions, in addition
6 to the events described in subsection (a)(2); and

7 “(4) such other information as the Academy de-
8 termines to be appropriate.

9 **“SEC. 706. USE OF ALLOWANCES FOR TRANSITION ASSIST-**
10 **ANCE AND OTHER PURPOSES.**

11 “(a) REGULATIONS GOVERNING ALLOCATION OF AL-
12 LOWANCES FOR TRANSITION ASSISTANCE TO INDIVID-
13 UALS AND ENTITIES.—

14 “(1) IN GENERAL.—In implementing any mar-
15 ket-based program, the Administrator may promul-
16 gate regulations providing for the allocation of global
17 warming pollution emission allowances to the indi-
18 viduals and entities, or for the purposes, specified in
19 subsection (b).

20 “(2) REQUIREMENTS.—Regulations promul-
21 gated under paragraph (1) may, as the Adminis-
22 trator determines to be necessary, provide for the
23 appointment of 1 or more trustees—

1 “(A) to receive emission allowances for the
2 benefit of households, communities, and other
3 entities described in paragraph (1);

4 “(B) to sell the emission allowances at fair
5 market value; and

6 “(C) to distribute the proceeds of any sale
7 of emission allowances to the appropriate bene-
8 ficiaries.

9 “(b) ALLOCATION FOR TRANSITION ASSISTANCE.—
10 The Administrator may allocate emission allowances, in
11 accordance with regulations promulgated under subsection
12 (a), to—

13 “(1) communities, individuals, and companies
14 that have experienced disproportionate adverse im-
15 pacts as a result of—

16 “(A) the transition to a lower carbon-emit-
17 ting economy; or

18 “(B) global warming;

19 “(2) owners and operators of highly energy-effi-
20 cient buildings, including—

21 “(A) residential users;

22 “(B) producers of highly energy-efficient
23 products; and

24 “(C) entities that carry out energy-effi-
25 ciency improvement projects pursuant to section

1 712 that result in consumer-side reductions in
2 electricity use;

3 “(3) entities that will use the allowances for the
4 purpose of carrying out geological sequestration of
5 carbon dioxide produced by an anthropogenic global
6 warming pollution emission source in accordance
7 with requirements established by the Administrator;

8 “(4) such individuals and entities as the Admin-
9 istrator determines to be appropriate, for use in car-
10 rying out projects to reduce net carbon dioxide emis-
11 sions through above-ground and below-ground bio-
12 logical carbon dioxide sequestration (including se-
13 questration in forests, forest soils, agricultural soils,
14 rangeland, or grassland in the United States);

15 “(5) such individuals and entities (including
16 fish and wildlife agencies) as the Administrator de-
17 termines to be appropriate, for use in carrying out
18 projects to protect and restore ecosystems (including
19 fish and wildlife) affected by climate change; and

20 “(6) manufacturers producing consumer prod-
21 ucts that result in substantially reduced global
22 warming pollution emissions, for use in funding re-
23 bates for purchasers of those products.

24 **“SEC. 707. VEHICLE EMISSION STANDARDS.**

25 “(a) VEHICLES UNDER 10,000 POUNDS.—

1 “(1) IN GENERAL.—Not later than January 1,
2 2010, the Administrator shall promulgate regula-
3 tions requiring each fleet of automobiles sold by a
4 manufacturer in the United States beginning in
5 model year 2016 to meet the standards for global
6 warming pollution emissions described in paragraph
7 (2).

8 “(2) EMISSION STANDARDS.—The average glob-
9 al warming pollution emissions of a vehicle fleet de-
10 scribed in paragraph (1) shall not exceed—

11 “(A) 205 carbon dioxide equivalent grams
12 per mile for automobiles with—

13 “(i) a gross vehicle weight of not more
14 than 8,500 pounds; and

15 “(ii) a loaded vehicle weight of not
16 more than 3,750 pounds;

17 “(B) 332 carbon dioxide equivalent grams
18 per mile for—

19 “(i) automobiles with—

20 “(I) a gross vehicle weight of not
21 more than 8,500 pounds; and

22 “(II) a loaded vehicle weight of
23 more than 3,750 pounds; and

24 “(ii) medium-duty passenger vehicles;

25 and

1 “(C) 405 carbon dioxide equivalent grams
2 per mile for vehicles—

3 “(i) with a gross vehicle weight of be-
4 tween 8,501 pounds and 10,000 pounds;
5 and

6 “(ii) that are not medium-duty pas-
7 senger vehicles.

8 “(3) HEIGHTENED STANDARDS.—After model
9 year 2016, the Administrator may promulgate regu-
10 lations that increase the stringency of emission
11 standards described in paragraph (2) as necessary to
12 meet the emission reduction goal described in section
13 704(e)(3).

14 “(b) HIGHWAY VEHICLES OVER 10,000 POUNDS.—

15 “(1) IN GENERAL.—Not later than January 1,
16 2010, the Administrator shall promulgate regula-
17 tions requiring each fleet of highway vehicles over
18 10,000 pounds sold by a manufacturer in the United
19 States beginning in model year 2020 to meet the
20 standards for global warming pollution emissions de-
21 scribed in paragraph (2).

22 “(2) EMISSION STANDARDS.—The average glob-
23 al warming pollution emissions of a vehicle fleet de-
24 scribed in paragraph (1) shall not exceed—

1 “(A) 850 carbon dioxide equivalent grams
2 per mile for highway vehicles with a gross vehi-
3 cle weight rating between 10,001 pounds and
4 26,000 pounds; and

5 “(B) 1,050 carbon dioxide equivalent
6 grams per mile for highway vehicles with a
7 gross vehicle weight rating of more than 26,000
8 pounds.

9 “(3) HEIGHTENED STANDARDS.—After model
10 year 2020, the Administrator may promulgate regu-
11 lations that increase the stringency of emission
12 standards described in paragraph (2) as necessary to
13 meet the emission reduction goal described in section
14 704(a)(1).

15 “(c) ADJUSTMENT OF REQUIREMENTS.—Taking into
16 account appropriate lead times for vehicle manufacturers,
17 if the Academy determines, pursuant to an NAS report,
18 that a vehicle emission standard under this section is or
19 will be technologically infeasible as of the effective date
20 of the standard, the Administrator may, by regulation,
21 modify the requirement to take into account the deter-
22 mination of the Academy.

23 “(d) STUDY.—

24 “(1) IN GENERAL.—Not later than January 1,
25 2008, the Administrator shall enter into a contract

1 with the Academy under which the Academy shall
2 conduct a study of, and submit to the Administrator
3 a report on, the potential contribution of the non-
4 highway portion of the transportation sector toward
5 meeting the emission reduction goal described in sec-
6 tion 704(a)(1).

7 “(2) REQUIREMENTS.—The study shall ana-
8 lyze—

9 “(A) the technological feasibility and cost-
10 effectiveness of global warming pollution reduc-
11 tions from the non-highway sector; and

12 “(B) the overall potential contribution of
13 that sector in terms of emissions, in meeting
14 the emission reduction goal described in section
15 704(a)(1).

16 **“SEC. 708. EMISSION STANDARDS FOR ELECTRIC GENERA-**
17 **TION UNITS.**

18 “(a) INITIAL STANDARD.—

19 “(1) IN GENERAL.—Not later than 2 years
20 after the date of enactment of this title, the Admin-
21 istrator shall, by regulation, require each unit that
22 is designed and intended to provide electricity at a
23 unit capacity factor of at least 60 percent and that
24 begins operation after December 31, 2011, to meet
25 the standard described in paragraph (2).

1 “(2) STANDARD.—Beginning on December 31,
2 2015, a unit described in paragraph (1) shall meet
3 a global warming pollution emission standard that is
4 not higher than the emission rate of a new combined
5 cycle natural gas generating unit.

6 “(3) MORE STRINGENT REQUIREMENTS.—For
7 the period beginning on January 1 of the calendar
8 year following the effective date of the regulation de-
9 scribed in paragraph (1) and ending on December
10 31, 2029, the Administrator may increase the strin-
11 gency of the global warming pollution emission
12 standard described in paragraph (1) with respect to
13 electric generation units described in that para-
14 graph.

15 “(b) FINAL STANDARD.—Not later than December
16 31, 2030, the Administrator shall require each electric
17 generation unit, regardless of when the unit began to oper-
18 ate, to meet the applicable emission standard under sub-
19 section (a).

20 “(c) ADJUSTMENT OF REQUIREMENTS.—If the Acad-
21 emy determines, pursuant to section 705, that a require-
22 ment of this section is or will be technologically infeasible
23 at the time at which the requirement becomes effective,
24 the Administrator, may, by regulation, adjust or delay the

1 effective date of the requirement as is necessary to take
2 into consideration the determination of the Academy.

3 **“SEC. 709. LOW-CARBON GENERATION REQUIREMENT.**

4 “(a) DEFINITIONS.—In this section:

5 “(1) BASE QUANTITY OF ELECTRICITY.—The
6 term ‘base quantity of electricity’ means the total
7 quantity of electricity produced for sale by a covered
8 generator during the calendar year immediately pre-
9 ceding a compliance year from coal, petroleum coke,
10 lignite, or any combination of those fuels.

11 “(2) COVERED GENERATOR.—The term ‘cov-
12 ered generator’ means an electric generating unit
13 that—

14 “(A) has a rated capacity of 25 megawatts
15 or more; and

16 “(B) has an annual fuel input at least 50
17 percent of which is provided by coal, petroleum
18 coke, lignite, or any combination of those fuels.

19 “(3) LOW-CARBON GENERATION.—The term
20 ‘low-carbon generation’ means electric energy gen-
21 erated from an electric generating unit at least 50
22 percent of the annual fuel input of which, in any
23 year—

1 “(A) is provided by coal, petroleum coke,
 2 lignite, biomass, or any combination of those
 3 fuels; and

4 “(B) results in an emission rate into the
 5 atmosphere of not more than 250 pounds of
 6 carbon dioxide per megawatt-hour (after adjust-
 7 ment for carbon dioxide from the electric gener-
 8 ating unit that is geologically sequestered in a
 9 geological repository approved by the Adminis-
 10 trator pursuant to subsection (e)).

11 “(4) PROGRAM.—The term ‘program’ means
 12 the low-carbon generation credit trading program es-
 13 tablished under subsection (d)(1).

14 “(b) REQUIREMENT.—

15 “(1) CALENDAR YEARS 2015 THROUGH 2020.—
 16 Of the base quantity of electricity produced for sale
 17 by a covered generator for a calendar year, the cov-
 18 ered generator shall provide a minimum percentage
 19 of that base quantity of electricity for the calendar
 20 year from low-carbon generation, as specified in the
 21 following table:

“Calendar year:	Minimum annual percentage:
2015	0.5
2016	1.0
2017	2.0
2018	3.0
2019	4.0

2020 5.0

1 “(2) CALENDAR YEARS 2021 THROUGH 2025.—
 2 For each of calendar years 2021 through 2025, the
 3 Administrator may increase the minimum percent-
 4 age of the base quantity of electricity from low-car-
 5 bon generation described in paragraph (1) by up to
 6 2 percentage points from the previous year, as the
 7 Administrator determines to be necessary to achieve
 8 the emission reduction goal described in section
 9 704(a)(1).

10 “(3) CALENDAR YEARS 2026 THROUGH 2030.—
 11 For each of calendar years 2026 through 2030, the
 12 Administrator may increase the minimum percent-
 13 age of the base quantity of electricity from low-car-
 14 bon generation described in paragraph (1) by up to
 15 3 percentage points from the previous year, as the
 16 Administrator determines to be necessary to achieve
 17 the emission reduction goal described in section
 18 704(a)(1).

19 “(c) MEANS OF COMPLIANCE.—An owner or operator
 20 of a covered generator shall comply with subsection (b)
 21 by—

22 “(1) generating electric energy using low-carbon
 23 generation;

1 “(2) purchasing electric energy generated by
2 low-carbon generation;

3 “(3) purchasing low-carbon generation credits
4 issued under the program; or

5 “(4) undertaking a combination of the actions
6 described in paragraphs (1) through (3).

7 “(d) LOW-CARBON GENERATION CREDIT TRADING
8 PROGRAM.—

9 “(1) IN GENERAL.—Not later than January 1,
10 2008, the Administrator shall establish, by regula-
11 tion after notice and opportunity for comment, a
12 low-carbon generation trading program to permit an
13 owner or operator of a covered generator that does
14 not generate or purchase enough electric energy
15 from low-carbon generation to comply with sub-
16 section (b) to achieve that compliance by purchasing
17 sufficient low-carbon generation credits.

18 “(2) REQUIREMENTS.—As part of the program,
19 the Administrator shall—

20 “(A) issue to producers of low-carbon gen-
21 eration, on a quarterly basis, a single low-car-
22 bon generation credit for each kilowatt hour of
23 low-carbon generation sold during the preceding
24 quarter; and

1 “(B) ensure that a kilowatt hour, including
2 the associated low-carbon generation credit,
3 shall be used only once for purposes of compli-
4 ance with subsection (b).

5 “(e) ENFORCEMENT.—An owner or operator of a cov-
6 ered generator that fails to comply with subsection (b)
7 shall be subject to a civil penalty in an amount equal to
8 the product obtained by multiplying—

9 “(1) the number of kilowatt-hours of electric
10 energy sold to electric consumers in violation of sub-
11 section (b); and

12 “(2) the greater of—

13 “(A) 2.5 cents (as adjusted under sub-
14 section (g)); or

15 “(B) 200 percent of the average market
16 value of those low-carbon generation credits
17 during the year in which the violation occurred.

18 “(f) EXEMPTION.—This section shall not apply for
19 any calendar year to an owner or operator of a covered
20 generator that sold less than 40,000 megawatt-hours of
21 electric energy produced from covered generators during
22 the preceding calendar year.

23 “(g) INFLATION ADJUSTMENT.—Not later than De-
24 cember 31, 2008, and annually thereafter, the Adminis-
25 trator shall adjust the amount of the civil penalty for each

1 kilowatt-hour calculated under subsection (e)(2) to reflect
2 changes for the 12-month period ending on the preceding
3 November 30 in the Consumer Price Index for All Urban
4 Consumers published by the Bureau of Labor Statistics
5 of the Department of Labor.

6 “(h) TECHNOLOGICAL INFEASIBILITY.—If the Acad-
7 emy determines, pursuant to section 705, that the sched-
8 ule for compliance described in subsection (b) is or will
9 be technologically infeasible for covered generators to
10 meet, the Administrator may, by regulation, adjust the
11 schedule as the Administrator determines to be necessary
12 to take into account the consideration of the determination
13 of the Academy.

14 “(i) TERMINATION OF AUTHORITY.—This section
15 and the authority provided by this section terminate on
16 December 31, 2030.

17 **“SEC. 710. GEOLOGICAL DISPOSAL OF GLOBAL WARMING**
18 **POLLUTANTS.**

19 “(a) GEOLOGICAL CARBON DIOXIDE DISPOSAL DE-
20 PLOYMENT PROJECTS.—

21 “(1) IN GENERAL.—The Administrator shall es-
22 tablish a competitive grant program to provide
23 grants to 5 entities for the deployment of projects to
24 geologically dispose of carbon dioxide (referred to in

1 this subsection as ‘geological disposal deployment
2 projects’).

3 “(2) LOCATION.—Each geological disposal de-
4 ployment project shall be conducted in a geologically
5 distinct location in order to demonstrate the suit-
6 ability of a variety of geological structures for car-
7 bon dioxide disposal.

8 “(3) COMPONENTS.—Each geological disposal
9 deployment project shall include an analysis of—

10 “(A) mechanisms for trapping the carbon
11 dioxide to be geologically disposed;

12 “(B) techniques for monitoring the geologi-
13 cally disposed carbon dioxide;

14 “(C) public response to the geological dis-
15 posal deployment project; and

16 “(D) the permanency of carbon dioxide
17 storage in geological reservoirs.

18 “(4) REQUIREMENTS.—

19 “(A) IN GENERAL.—The Administrator
20 shall establish—

21 “(i) appropriate conditions for envi-
22 ronmental protection with respect to geo-
23 logical disposal deployment projects to pro-
24 tect public health and the environment;
25 and

1 “(ii) requirements relating to applica-
2 tions for grants under this subsection.

3 “(B) RULEMAKING.—The establishment of
4 requirements under subparagraph (A) shall not
5 require a rulemaking.

6 “(C) MINIMUM REQUIREMENTS.—At a
7 minimum, each application for a grant under
8 this subsection shall include—

9 “(i) a description of the geological dis-
10 posal deployment project proposed in the
11 application;

12 “(ii) an estimate of the quantity of
13 carbon dioxide to be geologically disposed
14 over the life of the geological disposal de-
15 ployment project; and

16 “(iii) a plan to collect and disseminate
17 data relating to each geological disposal
18 deployment project to be funded by the
19 grant.

20 “(5) PARTNERS.—An applicant for a grant
21 under this subsection may carry out a geological dis-
22 posal deployment project under a pilot program in
23 partnership with 1 or more public or private entities.

1 “(6) SELECTION CRITERIA.—In evaluating ap-
2 plications under this subsection, the Administrator
3 shall—

4 “(A) consider the previous experience of
5 each applicant with similar projects; and

6 “(B) give priority consideration to applica-
7 tions for geological disposal deployment projects
8 that—

9 “(i) offer the greatest geological diver-
10 sity from other projects that have pre-
11 viously been approved;

12 “(ii) are located in closest proximity
13 to a source of carbon dioxide;

14 “(iii) make use of the most affordable
15 source of carbon dioxide;

16 “(iv) are expected to geologically dis-
17 pose of the largest quantity of carbon diox-
18 ide;

19 “(v) are combined with demonstra-
20 tions of advanced coal electricity genera-
21 tion technologies;

22 “(vi) demonstrate the greatest com-
23 mitment on the part of the applicant to en-
24 sure funding for the proposed demonstra-
25 tion project and the greatest likelihood

1 that the demonstration project will be
2 maintained or expanded after Federal as-
3 sistance under this subsection is com-
4 pleted; and

5 “(vii) minimize any adverse environ-
6 mental effects from the project.

7 “(7) PERIOD OF GRANTS.—

8 “(A) IN GENERAL.—A geological disposal
9 deployment project funded by a grant under
10 this subsection shall begin construction not
11 later than 3 years after the date on which the
12 grant is provided.

13 “(B) TERM.—The Administrator shall not
14 provide grant funds to any applicant under this
15 subsection for a period of more than 5 years.

16 “(8) TRANSFER OF INFORMATION AND KNOWL-
17 EDGE.—The Administrator shall establish mecha-
18 nisms to ensure that the information and knowledge
19 gained by participants in the program under this
20 subsection are published and disseminated, including
21 to other applicants that submitted applications for a
22 grant under this subsection.

23 “(9) SCHEDULE.—

24 “(A) PUBLICATION.—Not later than 180
25 days after the date of enactment of this title,

1 the Administrator shall publish in the Federal
2 Register, and elsewhere as appropriate, a re-
3 quest for applications to carry out geological
4 disposal deployment projects.

5 “(B) DATE FOR APPLICATIONS.—An appli-
6 cation for a grant under this subsection shall be
7 submitted not later than 180 days after the
8 date of publication of the request under sub-
9 paragraph (A).

10 “(C) SELECTION.—After the date by which
11 applications for grants are required to be sub-
12 mitted under subparagraph (B), the Adminis-
13 trator, in a timely manner, shall select, after
14 peer review and based on the criteria under
15 paragraph (6), those geological disposal deploy-
16 ment projects to be provided a grant under this
17 subsection.

18 “(b) INTERIM STANDARDS.—Not later than 3 years
19 after the date of enactment of this title, the Administrator,
20 in consultation with the Secretary of Energy, shall, by reg-
21 ulation, establish interim geological carbon dioxide dis-
22 posal standards that address—

23 “(1) site selection;

24 “(2) permitting processes;

25 “(3) monitoring requirements;

1 “(4) public participation; and

2 “(5) such other issues as the Administrator and
3 the Secretary of Energy determine to be appro-
4 priate.

5 “(c) FINAL STANDARDS.—Not later than 6 years
6 after the date of enactment of this title, taking into ac-
7 count the results of geological disposal deployment
8 projects carried out under subsection (a), the Adminis-
9 trator shall, by regulation, establish final geological carbon
10 dioxide disposal standards.

11 “(d) CONSIDERATIONS.—In developing standards
12 under subsections (b) and (c), the Administrator shall con-
13 sider the experience in the United States in regulating—

14 “(1) underground injection of waste;

15 “(2) enhanced oil recovery;

16 “(3) short-term storage of natural gas; and

17 “(4) long-term waste storage.

18 “(e) TERMINATION OF AUTHORITY.—This section
19 and the authority provided by this section terminate on
20 December 31, 2030.

21 **“SEC. 711. RESEARCH AND DEVELOPMENT.**

22 “(a) IN GENERAL.—The Administrator shall carry
23 out a program to perform and support research on global
24 climate change standards and processes, with the goals
25 of—

1 “(1) providing scientific and technical knowl-
2 edge applicable to the reduction of global warming
3 pollutants; and

4 “(2) facilitating implementation of section 704.

5 “(b) RESEARCH PROGRAM.—

6 “(1) IN GENERAL.—The Administrator shall
7 carry out, directly or through the use of contracts or
8 grants, a global climate change standards and proc-
9 esses research program.

10 “(2) RESEARCH.—

11 “(A) CONTENTS AND PRIORITIES.—The
12 specific contents and priorities of the research
13 program shall be determined in consultation
14 with appropriate Federal agencies, including—

15 “(i) the National Oceanic and Atmos-
16 pheric Administration;

17 “(ii) the National Aeronautics and
18 Space Administration; and

19 “(iii) the Department of Energy.

20 “(B) TYPES OF RESEARCH.—The research
21 program shall include the conduct of basic and
22 applied research—

23 “(i) to develop and provide the en-
24 hanced measurements, calibrations, data,
25 models, and reference material standards

1 necessary to enable the monitoring of glob-
2 al warming pollution;

3 “(ii) to assist in establishing a base-
4 line reference point for future trading in
5 global warming pollutants (including the
6 measurement of progress in emission re-
7 ductions);

8 “(iii) for international exchange as
9 scientific or technical information for the
10 stated purpose of developing mutually-rec-
11 ognized measurements, standards, and pro-
12 cedures for reducing global warming pollu-
13 tion; and

14 “(iv) to assist in developing improved
15 industrial processes designed to reduce or
16 eliminate global warming pollution.

17 “(3) ABRUPT CLIMATE CHANGE RESEARCH.—

18 “(A) DEFINITION OF ABRUPT CLIMATE
19 CHANGE.—In this paragraph, the term ‘abrupt
20 climate change’ means a change in climate that
21 occurs so rapidly or unexpectedly that humans
22 or natural systems may have difficulty adapting
23 to the change.

24 “(B) RESEARCH.—The Administrator shall
25 carry out a program of scientific research on

1 potential abrupt climate change that is de-
2 signed—

3 “(i) to develop a global array of ter-
4 restrial and oceanographic indicators of
5 paleoclimate in order to identify and de-
6 scribe past instances of abrupt climate
7 change;

8 “(ii) to improve understanding of
9 thresholds and nonlinearities in geophysical
10 systems relating to the mechanisms of ab-
11 rupt climate change;

12 “(iii) to incorporate those mechanisms
13 into advanced geophysical models of cli-
14 mate change; and

15 “(iv) to test the output of those mod-
16 els against an improved global array of
17 records of past abrupt climate changes.

18 “(c) SENSE OF THE SENATE.—It is the sense of the
19 Senate that Federal funds for clean, low-carbon energy re-
20 search, development, and deployment should be increased
21 by at least 100 percent for each year during the 10-year
22 period beginning on the date of enactment of this title.

23 **“SEC. 712. ENERGY EFFICIENCY PERFORMANCE STAND-**
24 **ARD.**

25 “(a) DEFINITIONS.—In this section:

1 “(1) ELECTRICITY SAVINGS.—

2 “(A) IN GENERAL.—The term ‘electricity
3 savings’ means reductions in end-use electricity
4 consumption relative to consumption by the
5 same customer or at the same new or existing
6 facility in a given year, as defined in regula-
7 tions promulgated by the Administrator under
8 subsection (e).

9 “(B) INCLUSIONS.—The term ‘savings’ in-
10 cludes savings achieved as a result of—

11 “(i) installation of energy-saving tech-
12 nologies and devices; and

13 “(ii) the use of combined heat and
14 power systems, fuel cells, or any other
15 technology identified by the Administrator
16 that recaptures or generates energy solely
17 for onsite customer use.

18 “(C) EXCLUSION.—The term ‘savings’
19 does not include savings from measures that
20 would likely be adopted in the absence of en-
21 ergy-efficiency programs, as determined by the
22 Administrator.

23 “(2) RETAIL ELECTRICITY SALES.—The term
24 ‘retail electricity sales’ means the total quantity of
25 electric energy sold by a retail electricity supplier to

1 retail customers during the most recent calendar
 2 year for which that information is available.

3 “(3) RETAIL ELECTRICITY SUPPLIER.—The
 4 term ‘retail electricity supplier’ means a distribution
 5 or integrated utility, or an independent company or
 6 entity, that sells electric energy to consumers.

7 “(b) ENERGY EFFICIENCY PERFORMANCE STAND-
 8 ARD.—Each retail electricity supplier shall implement pro-
 9 grams and measures to achieve improvements in energy
 10 efficiency and peak load reduction, as verified by the Ad-
 11 ministrator.

12 “(c) TARGETS.—For calendar year 2008 and each
 13 calendar year thereafter, the Administrator shall ensure
 14 that retail electric suppliers annually achieve electricity
 15 savings and reduce peak power demand and electricity use
 16 by retail customers by a percentage that is not less than
 17 the applicable target percentage specified in the following
 18 table:

Calendar Year	Reduction in peak demand	Reduction in electricity use
200825 percent25 percent
200975 percent75 percent
2010	1.75 percent	1.5 percent
2011	2.75 percent	2.25 percent
2012	3.75 percent	3.0 percent
2013	4.75 percent	3.75 percent
2014	5.75 percent	4.5 percent
2015	6.75 percent	5.25 percent
2016	7.75 percent	6.0 percent
2017	8.75 percent	6.75 percent
2018	9.75 percent	7.5 percent
2019	10.75 percent	8.25 percent
2020 and each calendar year thereafter.	11.75 percent	9.0 percent

1 “(d) BEGINNING DATE.—For the purpose of meeting
2 the targets established under subsection (c), electricity
3 savings shall be calculated based on the sum of—

4 “(1) savings realized as a result of actions
5 taken by the retail electric supplier during the speci-
6 fied calendar year; and

7 “(2) cumulative savings realized as a result of
8 electricity savings achieved in all previous calendar
9 years (beginning with calendar year 2006).

10 “(e) IMPLEMENTING REGULATIONS.—

11 “(1) IN GENERAL.—Not later than 1 year after
12 the date of enactment of this title, the Administrator
13 shall promulgate regulations to implement the tar-
14 gets established under subsection (c).

15 “(2) REQUIREMENTS.—The regulations shall
16 establish—

17 “(A) a national credit system permitting
18 credits to be awarded, bought, sold, or traded
19 by and among retail electricity suppliers;

20 “(B) a fee equivalent to not less than 4
21 cents per kilowatt hour for retail energy sup-
22 pliers that do not meet the targets established
23 under subsection (c); and

1 “(C) standards for monitoring and
2 verification of electricity use and demand sav-
3 ings reported by the retail electricity suppliers.

4 “(3) CONSIDERATION OF TRANSMISSION AND
5 DISTRIBUTION EFFICIENCY.—In developing regula-
6 tions under this subsection, the Administrator shall
7 consider whether savings, in whole or part, achieved
8 by retail electricity suppliers by improving the effi-
9 ciency of electric distribution and use should be eligi-
10 ble for credits established under this section.

11 “(f) COMPLIANCE WITH STATE LAW.—Nothing in
12 this section shall supersede or otherwise affect any State
13 or local law requiring or otherwise relating to reductions
14 in total annual electricity consumption, or peak power con-
15 sumption, by electric consumers to the extent that the
16 State or local law requires more stringent reductions than
17 those required under this section.

18 “(g) VOLUNTARY PARTICIPATION.—The Adminis-
19 trator may—

20 “(1) pursuant to the regulations promulgated
21 under subsection (e)(1), issue a credit to any entity
22 that is not a retail electric supplier if the entity im-
23 plements electricity savings; and

24 “(2) in a case in which an entity described in
25 paragraph (1) is a nonprofit or educational organi-

1 zation, provide to the entity 1 or more grants in lieu
2 of a credit.

3 **“SEC. 713. RENEWABLE PORTFOLIO STANDARD.**

4 “(a) RENEWABLE ENERGY.—

5 “(1) IN GENERAL.—The Administrator, in con-
6 sultation with the Secretary of Energy, shall promul-
7 gate regulations defining the types and sources of
8 renewable energy generation that may be carried out
9 in accordance with this section.

10 “(2) INCLUSIONS.—In promulgating regulations
11 under paragraph (1), the Administrator shall include
12 of all types of renewable energy (as defined in sec-
13 tion 203(b) of the Energy Policy Act of 2005 (42
14 U.S.C. 15852(b))) other than energy generated
15 from—

16 “(A) municipal solid waste;

17 “(B) wood contaminated with plastics or
18 metals; or

19 “(C) tires.

20 “(b) RENEWABLE ENERGY REQUIREMENT.—Of the
21 base quantity of electricity sold by each retail electric sup-
22 plier to electric consumers during a calendar year, the
23 quantity generated by renewable energy sources shall be
24 not less than the following percentages:

“Calendar year:	Minimum annual percentage:
2008 through 2009	5
2010 through 2014	10
2015 through 2019	15
2020 and subsequent years	20

1 “(c) RENEWABLE ENERGY CREDIT PROGRAM.—Not
 2 later than 1 year after the date of enactment of this title,
 3 the Administrator shall establish—

4 “(1) a program to issue, establish the value of,
 5 monitor the sale or exchange of, and track renewable
 6 energy credits; and

7 “(2) penalties for any retail electric supplier
 8 that does not comply with this section.

9 “(d) PROHIBITION ON DOUBLE COUNTING.—A re-
 10 newable energy credit issued under subsection (c)—

11 “(1) may be counted toward meeting the re-
 12 quirements of subsection (b) only once; and

13 “(2) shall vest with the owner of the system or
 14 facility that generates the renewable energy that is
 15 covered by the renewable energy credit, unless the
 16 owner explicitly transfers the renewable energy cred-
 17 it.

18 “(e) SALE UNDER PURPA CONTRACT.—If the Ad-
 19 ministrator, after consultation with the Secretary of En-
 20 ergy, determines that a renewable energy generator is sell-
 21 ing electricity to comply with this section to a retail elec-

1 tric supplier under a contract subject to section 210 of
2 the Public Utilities Regulatory Policies Act of 1978 (16
3 U.S.C. 824a-3), the retail electric supplier shall be treated
4 as the generator of the electric energy for the purposes
5 of this title for the duration of the contract.

6 “(f) STATE PROGRAMS.—Nothing in this section pre-
7 cludes any State from requiring additional renewable en-
8 ergy generation under any State renewable energy pro-
9 gram.

10 “(g) VOLUNTARY PARTICIPATION.—The Adminis-
11 trator may issue a renewable energy credit pursuant to
12 subsection (c) to any entity that is not subject to this sec-
13 tion only if the entity applying for the renewable energy
14 credit meets the terms and conditions of this section to
15 the same extent as retail electric suppliers subject to this
16 section.

17 **“SEC. 714. STANDARDS TO ACCOUNT FOR BIOLOGICAL SE-**
18 **QUESTRATION OF CARBON.**

19 “(a) IN GENERAL.—Not later than 2 years after the
20 date of enactment of title, the Secretary of Agriculture,
21 with the concurrence of the Administrator, shall establish
22 standards for accrediting certified reductions in the emis-
23 sion of carbon dioxide through above-ground and below-
24 ground biological sequestration activities.

1 “(b) REQUIREMENTS.—The standards shall in-
2 clude—

3 “(1) a national biological carbon storage base-
4 line or inventory; and

5 “(2) measurement, monitoring, and verification
6 guidelines based on—

7 “(A) measurement of increases in carbon
8 storage in excess of the carbon storage that
9 would have occurred in the absence of a new
10 management practice designed to achieve bio-
11 logical sequestration of carbon;

12 “(B) comprehensive carbon accounting
13 that—

14 “(i) reflects sustained net increases in
15 carbon reservoirs; and

16 “(ii) takes into account any carbon
17 emissions resulting from disturbance of
18 carbon reservoirs in existence as of the
19 date of commencement of any new man-
20 agement practice designed to achieve bio-
21 logical sequestration of carbon;

22 “(C) adjustments to account for—

23 “(i) emissions of carbon that may re-
24 sult at other locations as a result of the
25 impact of the new biological sequestration

1 management practice on timber supplies;
2 or

3 “(ii) potential displacement of carbon
4 emissions to other land owned by the enti-
5 ty that carries out the new biological se-
6 questration management practice; and

7 “(D) adjustments to reflect the expected
8 carbon storage over various time periods, taking
9 into account the likely duration of the storage
10 of carbon in a biological reservoir.

11 “(c) UPDATING OF STANDARDS.—Not later than 3
12 years after the date of establishment of the standards
13 under subsection (a), and every 3 years thereafter, the
14 Secretary of Agriculture shall update the standards to
15 take into account the most recent scientific information.

16 **“SEC. 715. GLOBAL WARMING POLLUTION REPORTING.**

17 “(a) IN GENERAL.—Not later than 2 years after the
18 date of enactment of this title, and annually thereafter,
19 any entity considered to be a major stationary source (as
20 defined in section 169A(g)) shall submit to the Adminis-
21 trator a report describing the emissions of global warming
22 pollutants from the entity for the preceding calendar year.

23 “(b) VOLUNTARY REPORTING.—An entity that is not
24 described in subsection (a) may voluntarily report the

1 emissions of global warming pollutants from the entity to
2 the Administrator.

3 “(c) REQUIREMENTS FOR REPORTS.—

4 “(1) EXPRESSION OF MEASUREMENTS.—Each
5 global warming pollution report submitted under this
6 section shall express global warming pollution emis-
7 sions in—

8 “(A) metric tons of each global warming
9 pollutant; and

10 “(B) metric tons of the carbon dioxide
11 equivalent of each global warming pollutant.

12 “(2) ELECTRONIC FORMAT.—The information
13 contained in a report submitted under this section
14 shall be reported electronically to the Administrator
15 in such form and to such extent as may be required
16 by the Administrator.

17 “(3) DE MINIMIS EXEMPTION.—The Adminis-
18 trator may specify the level of global warming pollu-
19 tion emissions from a source within a facility that
20 shall be considered to be a de minimis exemption
21 from the requirement to comply with this section.

22 “(d) PUBLIC AVAILABILITY OF INFORMATION.—Not
23 later than March 1 of the year after which the Adminis-
24 trator receives a report under this subsection from an enti-
25 ty, and annually thereafter, the Administrator shall make

1 the information reported under this section available to
2 the public through the Internet.

3 “(e) **PROTOCOLS AND METHODS.**—The Adminis-
4 trator shall, by regulation, establish protocols and methods
5 to ensure completeness, consistency, transparency, and ac-
6 curacy of data on global warming pollution emissions sub-
7 mitted under this section.

8 “(f) **ENFORCEMENT.**—Regulations promulgated
9 under this section may be enforced pursuant to section
10 113 with respect to any person that—

11 “(1) fails to submit a report under this section;

12 or

13 “(2) otherwise fails to comply with those regu-
14 lations.

15 **“SEC. 716. CLEAN ENERGY TECHNOLOGY DEPLOYMENT IN**
16 **DEVELOPING COUNTRIES.**

17 “(a) **DEFINITIONS.**—In this section:

18 “(1) **CLEAN ENERGY TECHNOLOGY.**—The term
19 ‘clean energy technology’ means an energy supply or
20 end-use technology that, over the lifecycle of the
21 technology and compared to a similar technology al-
22 ready in commercial use in any developing country—

23 “(A) is reliable; and

24 “(B) results in reduced emissions of global
25 warming pollutants.

1 “(2) DEVELOPING COUNTRY.—

2 “(A) IN GENERAL.—The term ‘developing
3 country’ means any country not listed in Annex
4 I of the United Nations Framework Convention
5 on Climate Change, done at New York on May
6 9, 1992.

7 “(B) INCLUSION.—The term ‘developing
8 country’ may include a country with an econ-
9 omy in transition, as determined by the Sec-
10 retary.

11 “(3) TASK FORCE.—The term ‘Task Force’
12 means the Task Force on International Clean, Low-
13 Carbon Energy Cooperation established under sub-
14 section (b)(1).

15 “(b) TASK FORCE.—

16 “(1) ESTABLISHMENT.—Not later than 90 days
17 after the date of enactment of this title, the Presi-
18 dent shall establish a task force to be known as the
19 ‘Task Force on International Clean, Low Carbon
20 Energy Cooperation’.

21 “(2) COMPOSITION.—The Task Force shall be
22 composed of—

23 “(A) the Administrator and the Secretary
24 of State, who shall serve jointly as Co-Chair-
25 persons; and

1 “(B) representatives, appointed by the
2 head of the respective Federal agency, of—

3 “(i) the Department of Commerce;

4 “(ii) the Department of the Treasury;

5 “(iii) the United States Agency for
6 International Development;

7 “(iv) the Export-Import Bank;

8 “(v) the Overseas Private Investment
9 Corporation;

10 “(vi) the Office of United States
11 Trade Representative; and

12 “(vii) such other Federal agencies as
13 are determined to be appropriate by the
14 President.

15 “(c) DUTIES.—

16 “(1) INITIAL STRATEGY.—

17 “(A) IN GENERAL.—Not later than 1 year
18 after the date of enactment of this title, the
19 Task Force shall develop and submit to the
20 President an initial strategy—

21 “(i) to support the development and
22 implementation of programs and policies in
23 developing countries to promote the adop-
24 tion of clean, low-carbon energy tech-
25 nologies and energy-efficiency technologies

1 and strategies, with an emphasis on those
2 developing countries that are expected to
3 experience the most significant growth in
4 global warming pollution emissions over
5 the 20-year period beginning on the date
6 of enactment of this title; and

7 “(ii)(I) open and expand clean, low-
8 carbon energy technology markets; and

9 “(II) facilitate the export of that tech-
10 nology to developing countries.

11 “(B) SUBMISSION TO CONGRESS.—On re-
12 ceipt of the initial strategy from the Task Force
13 under subparagraph (A), the President shall
14 submit the initial strategy to Congress.

15 “(2) FINAL STRATEGY.—Not later than 2 years
16 after the date of submission of the initial strategy
17 under paragraph (1), and every 2 years thereafter—

18 “(A) the Task Force shall—

19 “(i) review and update the initial
20 strategy; and

21 “(ii) report the results of the review
22 and update to the President; and

23 “(B) the President shall submit to Con-
24 gress a final strategy.

1 “(3) PERFORMANCE CRITERIA.—The Task
2 Force shall develop and submit to the Administrator
3 performance criteria for use in the provision of as-
4 sistance under this section.

5 “(d) PROVISION OF ASSISTANCE.—The Adminis-
6 trator may—

7 “(1) provide assistance to developing countries
8 for use in carrying out activities that are consistent
9 with the priorities established in the final strategy;
10 and

11 “(2) establish a pilot program that provides fi-
12 nancial assistance for qualifying projects (as deter-
13 mined by the Administrator) in accordance with—

14 “(A) the final strategy submitted under
15 subsection (c)(2)(B); and

16 “(B) any performance criteria developed by
17 the Task Force under subsection (c)(3).

18 **“SEC. 717. PARAMOUNT INTEREST WAIVER.**

19 “(a) IN GENERAL.—If the President determines that
20 a national security emergency exists and, in light of infor-
21 mation that was not available as of the date of enactment
22 of this title, that it is in the paramount interest of the
23 United States to modify any requirement under this title
24 to minimize the effects of the emergency, the President
25 may, after opportunity for public notice and comment,

1 temporarily adjust, suspend, or waive any regulations pro-
2 mulgated pursuant to this title to achieve that minimiza-
3 tion.

4 “(b) CONSULTATION.—In making an emergency de-
5 termination under subsection (a), the President shall, to
6 the maximum extent practicable, consult with and take
7 into account any advice received from—

8 “(1) the Academy;

9 “(2) the Secretary of Energy; and

10 “(3) the Administrator.

11 “(c) JUDICIAL REVIEW.—An emergency determina-
12 tion under subsection (a) shall be subject to judicial review
13 under section 307.

14 **“SEC. 718. EFFECT ON OTHER LAW.**

15 “Nothing in this title—

16 “(1) affects the ability of a State to take State
17 actions to further limit climate change (except that
18 section 209 shall apply to standards for vehicles);
19 and

20 “(2) except as expressly provided in this title—

21 “(A) modifies or otherwise affects any re-
22 quirement of this Act in effect on the day be-
23 fore the date of enactment of this title; or

24 “(B) relieves any person of the responsi-
25 bility to comply with this Act.”.

1 **SEC. 3. RENEWABLE CONTENT OF GASOLINE.**

2 Section 211(o) of the Clean Air Act (as amended by
3 section 1501 of the Energy Policy Act of 2005 (Public
4 Law 109–58; 119 Stat. 1067)) is amended—

5 (1) in paragraph (1)—

6 (A) by redesignating subparagraph (B) as
7 subparagraph (E); and

8 (B) by inserting after subparagraph (A)
9 the following:

10 “(B) **LOW-CARBON RENEWABLE FUEL.**—

11 The term ‘low-carbon renewable fuel’ means re-
12 newable fuel the use of which, on a full fuel
13 cycle, per-mile basis, and as compared with the
14 use of gasoline, achieves a reduction in global
15 warming pollution emissions of 75 percent or
16 more.”; and

17 (2) in paragraph (2)—

18 (A) in subparagraph (A)(i), by inserting
19 “and low-carbon renewable fuel” after “renew-
20 able fuel”; and

21 (B) in subparagraph (B)—

22 (i) in clause (iv), by striking “(iv)
23 **MINIMUM APPLICABLE VOLUME.**—For the
24 purpose of subparagraph (A), the applica-
25 ble volume” and inserting the following:

1 “(iv) MINIMUM APPLICABLE VOLUME
2 OF RENEWABLE FUEL.—For the purpose
3 of subparagraph (A), the minimum appli-
4 cable volume of renewable fuel”; and

5 (ii) by adding at the end the fol-
6 lowing:

7 “(v) MINIMUM APPLICABLE VOLUME
8 OF LOW-CARBON RENEWABLE FUEL.—For
9 the purpose of subparagraph (A), the min-
10 imum applicable volume of low-carbon re-
11 newable fuel for calendar year 2015 and
12 each calendar year thereafter shall be
13 5,000,000,000 gallons.”.

14 **SEC. 4. ENFORCEMENT AND JUDICIAL REVIEW.**

15 (a) **FEDERAL ENFORCEMENT.**—Section 113 of the
16 Clean Air Act (42 U.S.C. 7413) is amended—

17 (1) in subsection (a)(3), by striking “or title
18 VI,” and inserting “title VI, or title VII,”;

19 (2) in subsection (b)(2), by striking “or title
20 VI,” and inserting “title VI, or title VII,”;

21 (3) in subsection (c)—

22 (A) in the first sentence of paragraph (1),
23 by striking “or title VI (relating to strato-
24 spheric ozone control),” and inserting “title VI
25 (relating to stratospheric ozone control), or title

1 VII (relating to global warming pollution emis-
2 sion reductions),”]; and

3 (B) in the first sentence of paragraph (3),
4 by striking “or VI” and inserting “VI, or VII”;
5 (4) in subsection (d)(1)(B), by striking “or VI”
6 and inserting “VI, or VII”; and

7 (5) in the first sentence of subsection (f), by
8 striking “or VI” and inserting “VI, or VII”.

9 (b) ESTABLISHMENT OF STANDARDS.—Section 202
10 of the Clean Air Act (42 U.S.C. 7521) is amended—

11 (1) by redesignating the second subsection (f)
12 (as added by section 207(b) of Public Law 101–549
13 (104 Stat. 2482)) as subsection (n); and

14 (2) by inserting after subsection (n) (as redesign-
15 nated by paragraph (1)) the following:

16 “(o) GLOBAL WARMING POLLUTION EMISSION RE-
17 Ductions.—

18 “(1) IN GENERAL.—Not later than January 1,
19 2010, the Administrator shall promulgate regula-
20 tions in accordance with subsection (a) and section
21 707 to require manufacturers of motor vehicles to
22 meet the vehicle emission standards established
23 under subsections (a) and (b) of section 707.

24 “(2) EFFECTIVE DATE.—The regulations pro-
25 mulgated under paragraph (1) shall take effect with

1 respect to motor vehicles sold by a manufacturer be-
2 ginning in model year 2016.”.

3 (c) ADMINISTRATIVE PROCEEDINGS AND JUDICIAL
4 REVIEW.—Section 307 of the Clean Air Act (42 U.S.C.
5 7607) is amended—

6 (1) in subsection (b)(1)—

7 (A) in the first sentence—

8 (i) by striking “section 111,,” and in-
9 serting “section 111,,”; and

10 (ii) by inserting “any emission stand-
11 ard or requirement issued pursuant to title
12 VII,” after “under section 120,,”; and

13 (B) in the second sentence, by striking
14 “section 112,,” and inserting “section 112,,”;
15 and

16 (2) in subsection (d)(1)—

17 (A) in subparagraph (T), by striking “,
18 and” at the end;

19 (B) in subparagraph (U), by striking the
20 period at the end and inserting “; and”; and

21 (C) by adding at the end the following:

22 “(V) the promulgation or revision of any regu-
23 lation under title VII (relating to global warming
24 pollution).”.

1 **SEC. 5. FEDERAL FLEET FUEL ECONOMY.**

2 Section 32917 of title 49, United States Code, is
3 amended by adding at the end the following:

4 “(3) NEW VEHICLES.—

5 “(A) IN GENERAL.—Except as provided in
6 subparagraph (B), each passenger vehicle pur-
7 chased, or leased for a period of at least 60
8 consecutive days, by an Executive agency after
9 the date of enactment of this paragraph shall
10 be as fuel-efficient as practicable.

11 “(B) WAIVER.—In an emergency situation,
12 an Executive agency may submit to Congress a
13 written request for a waiver of the requirement
14 under paragraph (1).”.

15 **SEC. 6. INTERNATIONAL NEGOTIATIONS AND TRADE RE-**
16 **STRICTIONS.**

17 It is the sense of the Senate that the United States
18 should act to reduce the health, environmental, economic,
19 and national security risks posed by global climate change,
20 and foster sustained economic growth through a new gen-
21 eration of technologies, by—

22 (1) participating in negotiations under the
23 United Nations Framework Convention on Climate
24 Change, done at New York May 9, 1992, and lead-
25 ing efforts in other international forums, with the

1 objective of securing participation of the United
2 States in agreements that—

3 (A) advance and protect the economic and
4 national security interests of the United States;

5 (B) establish mitigation commitments by
6 all countries that are major emitters of global
7 warming pollution, in accordance with the prin-
8 ciple of “common but differentiated responsibil-
9 ities”;

10 (C) establish flexible international mecha-
11 nisms to minimize the cost of efforts by partici-
12 pating countries; and

13 (D) achieve a significant long-term reduc-
14 tion in global warming pollution emissions; and

15 (2) establishing a bipartisan Senate observation
16 group, the members of which should be designated
17 by the Chairman and Ranking Member of the Com-
18 mittee on Foreign Relations of the Senate, and
19 which should include the Chairman and Ranking
20 Member of the Committee on Environment and Pub-
21 lic Works of the Senate—

22 (A) to monitor any international negotia-
23 tions on climate change; and

24 (B) to ensure that the advice and consent
25 function of the Senate is exercised in a manner

1 to facilitate timely consideration of any applica-
2 ble treaty submitted to the Senate.

3 **SEC. 7. REPORT ON TRADE AND INNOVATION EFFECTS.**

4 Not later than 2 years after the date of enactment
5 of this Act, and annually thereafter, the Secretary of Com-
6 merce, in consultation with the United States Trade Rep-
7 resentative, the Secretary of the Treasury, the Secretary
8 of Agriculture, the Secretary of Energy, and the Adminis-
9 trator of the Environmental Protection Agency (referred
10 to in this section as the “Secretary”), shall prepare and
11 submit to Congress a report on the trade, economic, and
12 technology innovation effects of the failure of the United
13 States to adopt measures that require or result in a reduc-
14 tion in total global warming pollution emissions in the
15 United States, in accordance with the goals for the United
16 States under the United Nations Framework Convention
17 on Climate Change, done at New York on May 9, 1992.

18 **SEC. 8. CLIMATE CHANGE IN ENVIRONMENTAL IMPACT**

19 **STATEMENTS.**

20 In any case in which a Federal agency prepares an
21 environmental impact statement or similar analysis re-
22 quired under the National Environmental Policy Act of
23 1969 (42 U.S.C. 4321 et seq.), the Federal agency shall
24 consider and evaluate—

1 (1) the impact that the Federal action or
2 project necessitating the statement or analysis would
3 have in terms of net changes in global warming pol-
4 lution emissions; and

5 (2) the ways in which climate changes may af-
6 fect the action or project in the short term and the
7 long term.

8 **SEC. 9. CORPORATE ENVIRONMENTAL DISCLOSURE OF**
9 **CLIMATE CHANGE RISKS.**

10 (a) REGULATIONS.—Not later than 2 years after the
11 date of enactment of this Act, the Securities and Ex-
12 change Commission (referred to in this section as the
13 “Commission”) shall promulgate regulations in accord-
14 ance with section 13 of the Securities Exchange Act of
15 1934 (15 U.S.C. 78m) directing each issuer of securities
16 under that Act to inform securities investors of the risks
17 relating to—

18 (1) the financial exposure of the issuer because
19 of the net global warming pollution emissions of the
20 issuer; and

21 (2) the potential economic impacts of global
22 warming on the interests of the issuer.

23 (b) UNIFORM FORMAT FOR DISCLOSURE.—In car-
24 rying out subsection (a), the Commission shall enter into
25 an agreement with the Financial Accounting Standards

1 Board, or another appropriate organization that estab-
2 lishes voluntary standards, to develop a uniform format
3 for disclosing to securities investors information on the
4 risks described in subsection (a).

5 (c) INTERIM INTERPRETIVE RELEASE.—

6 (1) IN GENERAL.—As soon as practicable after
7 the date of enactment of this Act, the Commission
8 shall issue an interpretive release clarifying that
9 under items 101 and 303 of Regulation S-K of the
10 Commission under part 229 of title 17, Code of Fed-
11 eral Regulations (as in effect on the date of enact-
12 ment of this Act)—

13 (A) the commitments of the United States
14 to reduce emissions of global warming pollution
15 under the United Nations Framework Conven-
16 tion on Climate Change, done at New York on
17 May 9, 1992, are considered to be a material
18 effect; and

19 (B) global warming constitutes a known
20 trend.

21 (2) PERIOD OF EFFECTIVENESS.—The inter-
22 pretive release issued under paragraph (1) shall re-
23 main in effect until the effective date of the final
24 regulations promulgated under subsection (a).

○