# Appendix B. Draft Bill Language

Title: To manage the carbon content of United States domestic energy supply.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

# SECTION 1. SHORT TITLE.

This Act may be cited as the "_____ Act of ____".

# SEC. 2. ACTIONS TO ADDRESS GLOBAL CLIMATE.

Title XVI of the Energy Policy Act of 1992 (42 U.S.C. 13381 et seq.) is amended—

(1) by inserting after the title designation and heading the following:

# "Subtitle A—General Provisions";

and

(2) by adding at the end the following:

# "Subtitle B—Actions to Address Global Climate Change

# "SEC. 1611. PURPOSE.

"The purpose of this subtitle is to reduce greenhouse gas emissions intensity in the United States, beginning in calendar year 2012, through an emissions trading system designed to achieve emissions reductions at the lowest practicable cost to the United States.

# "SEC. 1612. DEFINITIONS.

"In this subtitle:

"(1) CARBON DIOXIDE EQUIVALENT.—The term 'carbon dioxide equivalent' means—

"(A) for each covered fuel, the quantity of carbon dioxide that would be emitted into the atmosphere as a result of complete combustion of a unit of the covered fuel, to be determined for the type of covered fuel by the Secretary; and

"(B) for each greenhouse gas (other than carbon dioxide) the quantity of carbon dioxide that would have an effect on global warming equal to the effect of a unit of the greenhouse gas, as determined by the Secretary, taking into consideration global warming potentials.

"(2) COVERED FUEL.—The term 'covered fuel' means—

"(A) coal;

"(B) petroleum products;

"(C) natural gas;

"(D) natural gas liquids; and

"(E) any other fuel derived from fossil hydrocarbons (including bitumen and kerogen).

"(3) COVERED GREENHOUSE GAS EMISSIONS.—

"(A) IN GENERAL.—The term 'covered greenhouse gas emissions' means—

"(i) the carbon dioxide emissions from combustion of covered fuel carried out in the United States; and

"(ii) nonfuel-related greenhouse gas emissions in the United States, determined in accordance with section 1615(b)(2).

"(B) UNITS.—Quantities of covered greenhouse gas emissions shall be measured and expressed in units of metric tons of carbon dioxide equivalent.

"(4) EMISSIONS INTENSITY.—The term 'emissions intensity' means, for any calendar year, the quotient obtained by dividing—

"(A) covered greenhouse gas emissions; by

"(B) the forecasted GDP for that calendar year.

"(5) FORECASTED GDP.—The term 'forecasted GDP' means the predicted amount of the gross domestic product of the United States, based on the most current projection used by the Energy Information Administration of the Department of Energy on the date on which the prediction is made.

"(6) FORECASTED GDP IMPLICIT PRICE DEFLATOR.—The term 'forecasted GDP implicit price deflator' means [TO BE SUPPLIED].

"(7) GREENHOUSE GAS.—The term 'greenhouse gas' means—

"(A) carbon dioxide;

"(B) methane;

"(C) nitrous oxide;

"(D) hydrofluorocarbons;

"(E) perfluorocarbons; and

"(F) sulfur hexafluoride.

"(8) INITIAL ALLOCATION PERIOD.—The term 'initial allocation period' means the period beginning January 1, 2012, and ending December 31, 2021.

["(9) NATURAL GAS PROCESSING PLANT.—The term 'natural gas processing plant' means a facility designed to separate natural gas liquids from natural gas.]

"(10) NONFUEL REGULATED ENTITY.—The term 'nonfuel regulated entity' means—

"(A) the owner or operator of a facility that manufactures

hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, or nitrous oxide;

"(B) an importer of hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, or nitrous oxide;

"(C) the owner or operator of a facility that emits nitrous oxide associated with the manufacture of adipic acid or nitric acid;

"(D) the owner or operator of an aluminum smelter;

"(E) the owner or operator of an underground coal mine that emitted more than 35,000,000 cubic feet of methane during 2004 or any subsequent calendar year; and

"(F) the owner or operator of facility that emits hydrofluorocarbon-23 as a byproduct of hydrochlorofluorocarbon-22 production.

"(11) OFFSET PROJECT.—The term 'offset project' means any project to—

"(A) reduce greenhouse gas emissions; or

"(B) sequester a greenhouse gas.

"(12) PETROLEUM PRODUCT.—The term 'petroleum product' means—

"(A) a refined petroleum product;

"(B) residual fuel oil;

"(C) petroleum coke; or

"(D) a liquefied petroleum gas.

"(13) REGULATED ENTITY.—The term 'regulated entity' means—

"(A) a regulated fuel distributor; or

"(B) a nonfuel regulated entity.

"(14) REGULATED FUEL DISTRIBUTOR.—The term 'regulated fuel distributor' means—

"(A) the owner or operator of—

"(i) a petroleum refinery;

"(ii) a coal mine that produces more than 10,000 short tons during 2004 or any subsequent calendar year; or

"(iii) a natural gas processing plant [size threshold];

"(B) an importer of—

"(i) petroleum products;

"(ii) coal;

"(iii) coke; or

"(iv) natural gas liquids; or

"(C) any other entity the Secretary determines under section

1615(b)(3)(A)(ii) to be subject to section 1615.

"(15) SAFETY VALVE PRICE.—The term 'safety valve price' means—

"(A) for 2012, $7 per metric ton of carbon dioxide equivalent; and

"(B) for each subsequent calendar year, an amount equal to the product obtained by multiplying—

"(i) the safety valve price established for the preceding calendar year increased by 5 percent, unless a different rate of increase is established for the calendar year under section 1622; and

"(ii) the ratio that—

"(I) the forecasted GDP implicit price deflator for the calendar year; bears to

"(II) the forecasted GDP implicit price deflator for the preceding calendar year.

"(16) SECRETARY.—The term 'Secretary' means the Secretary of Energy, unless the President designates another officer of the Executive Branch to carry out a function under this subtitle.

"(17) SUBSEQUENT ALLOCATION PERIOD.—The term 'subsequent allocation period' means—

"(A) the 5-year period beginning January 1, 2022, and ending December 31, 2026; and

"(B) each subsequent 5-year period.

# "SEC. 1613. QUANTITY OF ANNUAL GREENHOUSE GAS ALLOWANCES.

"(a) Initial Allocation Period.—

"(1) IN GENERAL.—Not later than December 31, 2008, the Secretary shall—

"(A) make a projection with respect to emissions intensity for 2011, using—

"(i) the Energy Information Administration's most current projections of covered greenhouse gas emissions for 2011; and

"(ii) the forecasted GDP for 2011;

"(B) determine the emissions intensity target for 2012 by calculating a 2.6 percent reduction from the projected emissions intensity for 2011;

"(C) in accordance with paragraph (2), determine the emissions intensity target for each calendar year of the initial allocation period after 2012; and

"(D) in accordance with paragraph (3), determine the total number of allowances to be allocated for each calendar year during the initial allocation period.

"(2) EMISSIONS INTENSITY TARGETS AFTER 2012.—For each calendar year during the initial allocation period after 2012, the emissions intensity target shall be the emissions intensity target established for the preceding calendar year reduced by 2.6 percent.

"(3) TOTAL ALLOWANCES.—For each calendar year during the initial allocation period, the quantity of allowances to be issued shall be equal to the product obtained by multiplying—

"(A) the emissions intensity target established for the calendar year; and

"(B) the forecasted GDP for the calendar year.

"(b) Subsequent Allocation Periods.—

"(1) IN GENERAL.—Not later than the date that is 4 years before the beginning of each subsequent allocation period, the Secretary shall—

"(A) except as directed under section 1622, determine the emissions intensity target for each calendar year during that subsequent allocation period, in accordance with paragraph (2); and

"(B) issue the total number of allowances for each calendar year of the subsequent allocation period, in accordance with paragraph (3).

"(2) EMISSIONS INTENSITY TARGETS.—For each calendar year during a subsequent allocation period, the emissions intensity target shall be the emissions intensity target established for the preceding calendar year reduced by 3.0 percent.

"(3) TOTAL ALLOWANCES.—For each calendar year during a subsequent allocation period, the quantity of allowances to be issued shall be equal to the product obtained by multiplying—

"(A) the emissions intensity target established for the calendar year; and

"(B) the forecasted GDP for the calendar year.

"(c) Administrative Requirements.—

"(1) DENOMINATION.—Allowances issued by the Secretary under this section shall be denominated in units of metric tons of carbon dioxide equivalent.

"(2) PERIOD OF USE.—An allowance issued by the Secretary under this section may be used during—

"(A) the calendar year for which the allowance is issued; or

"(B) any subsequent calendar year.

"(3) SERIAL NUMBERS.—The Secretary shall—

"(A) assign a unique serial number to each allowance issued under this subtitle; and

"(B) retire the serial number of an allowance on the date on which the allowance is submitted under section 1615.

# “SEC. 1614. ALLOCATION AND AUCTION OF GREENHOUSE GAS ALLOWANCES.

“(a) Allocation of Allowances.—

“(1) DEFINITION OF STATE.—In this subsection, the term ‘State’ means—

“(A) each of the several States of the United States;

“(B) the District of Columbia;

“(C) the Commonwealth of Puerto Rico;

“(D) Guam;

“(E) American Samoa;

“(F) the Commonwealth of the Northern Mariana Islands;

“(G) the Federated States of Micronesia;

“(H) the Republic of the Marshall Islands;

“(I) the Republic of Palau; and

“(J) the United States Virgin Islands.

“(2) ALLOCATIONS.—Not later than the date that is 2 years before the beginning of the initial allocation period, and each subsequent allocation period, the Secretary shall allocate for each calendar year during the allocation period a quantity of allowances in accordance with this subsection.

“(3) QUANTITY.—The total quantity of allowances available to be allocated to industry and States [OR: to industry and by the President] for each calendar year of an allocation period shall be the product obtained by multiplying—

“(A) the total quantity of allowances issued for the calendar year under subsection (a)(3) or (b)(3) of section 1613; and

“(B) the allocation percentage for the calendar year under subsection (c).

“(4) ALLOWANCE ALLOCATION RULEMAKING.—Not later than 18 months after the date of enactment of this subtitle, the Secretary shall establish, by rule, procedures for allocating allowances in accordance with the criteria established under this subsection, including requirements (including forms and schedules for submission) for the reporting of information necessary for the allocation of allowances under this section.

“(5) DISTRIBUTION OF ALLOWANCES TO INDUSTRY.—The allowances available for allocation to industry under paragraph (3) shall be distributed as follows:

“(A) COAL MINES.—

“(i) DEFINITION OF ELIGIBLE COAL MINE.—In this subparagraph, the term ‘eligible coal mine’ means a coal mine located in the United States that is a regulated fuel distributor.

"(ii) TOTAL ALLOCATION.—For each year, eligible coal mines shall be allocated \7/55\ of the total quantity of allowances available for allocation to industry under paragraph (3).

"(iii) INDIVIDUAL ALLOCATIONS.—For any year, the quantity of allowances allocated to an eligible coal mine shall be the quantity equal to the product obtained by multiplying—

"(I) the total allocation to eligible coal mines under clause (ii); and

"(II) the ratio that—

"(aa) the carbon content of coal produced at the eligible coal mine during the 3-year period beginning on January 1, 2004; bears to

"(bb) the carbon content of coal produced at all eligible coal mines in the United States during that period.

"(B) PETROLEUM REFINERS.—

"(i) TOTAL ALLOCATION.—For each year, the petroleum refining sector shall be allocated \4/55\ of the total quantity of allowances available for allocation to industry under paragraph (3).

"(ii) INDIVIDUAL ALLOCATIONS.—For any year, the quantity of allowances allocated to a petroleum refinery located in the United States shall be the quantity equal to the product obtained by multiplying—

"(I) the total allocation to the petroleum refining sector under clause (i); and

"(II) the ratio that—

"(aa) the carbon content of petroleum products produced at the refinery during the 3-year period beginning on January 1, 2004; bears to

"(bb) the carbon content of petroleum products produced at all refineries in the United States during that period.

"(C) NATURAL GAS PROCESSORS.—

"(i) DEFINITION OF ELIGIBLE NATURAL GAS PROCESSOR.—In this subparagraph, the term 'eligible natural gas processor' means a natural gas processor located in the United States that is a regulated fuel distributor.

"(ii) TOTAL ALLOCATION.—For each year, eligible natural gas processors shall be allocated \2/55\ of the total quantity of allowances available for allocation to industry under paragraph (3).

"(iii) INDIVIDUAL ALLOCATIONS.—For any year, the quantity of allowances allocated to an eligible natural gas processor shall be the quantity equal to the product obtained by multiplying—

"(I) the total allocation to eligible natural gas processors under

clause (ii); and

"(II) the ratio that—

"(aa) the sum of, for the 3-year period beginning on January 1, 2004—

"(AA) the carbon content of natural gas liquids produced by the eligible natural gas processor; and

"(BB) the carbon content of the natural gas delivered into commerce by the eligible natural gas processor; bears to

"(bb) the sum of, for that period—

"(AA) the carbon content of natural gas liquids produced by all eligible natural gas processors; and

"(BB) the carbon content of the natural gas delivered into commerce by all eligible natural gas processors.

"(D) ELECTRICITY GENERATORS.—

"(i) DEFINITION OF ELIGIBLE ELECTRICITY GENERATOR.—In this subparagraph, the term 'eligible electricity generator' means an electricity generator located in the United States that is a fossil fuel-fired electricity generator.

"(ii) TOTAL ALLOCATION.—For each year, eligible electricity generators shall be allocated \30/55\ of the total quantity of allowances available for allocation to industry under paragraph (3).

"(iii) INDIVIDUAL ALLOCATIONS.—For any year, the quantity of allowances allocated to an eligible electricity generator shall be the quantity equal to the product obtained by multiplying—

"(I) the total allocation to eligible electricity generators under clause (ii); and

"(II) the ratio that—

"(aa) the carbon content of the fossil fuel input of the eligible electricity generator during the 3-year period beginning on January 1, 2004; bears to

"(bb) the total carbon content of fossil fuel input of eligible electricity generators in the United States during that period.

"(E) CARBON-INTENSIVE MANUFACTURING SECTORS.—

"(i) DEFINITION OF ELIGIBLE MANUFACTURER.—In this subparagraph, the term 'eligible manufacturer' means a carbon-intensive manufacturer located in the United States that [used more than _____ during ____; need to define/specify; need to exclude fossil fuel-fired electricity generation].

"(ii) TOTAL ALLOCATION.—For each year, eligible manufacturers shall be allocated \10/55\ of the total quantity of allowances available for

allocation to industry under paragraph (3).

"(iii) INDIVIDUAL ALLOCATIONS.—For any year, the quantity of allowances allocated to an eligible manufacturer shall be the quantity equal to the product obtained by multiplying—

"(I) the total allocation to eligible manufacturers under clause (ii); and

"(II) the ratio that—

"(aa) the carbon content of fossil fuel combusted at the eligible manufacturer during the 3-year period beginning on January 1, 2004; bears to

"(bb) the total carbon content of fossil fuel combusted at all eligible manufacturers in the United States during that period.

"(F) NONFUEL REGULATED ENTITIES.—

"(i) TOTAL ALLOCATION.—For each year, nonfuel regulated entities shall be allocated \2/55\ of the total quantity of allowances available for allocation to industry under paragraph (3).

"(ii) INDIVIDUAL ALLOCATIONS.—For any year, the quantity of allowances allocated to a nonfuel regulated entity shall be the quantity equal to the product obtained by multiplying—

"(I) the total allocation to nonfuel regulated entities under clause (i); and

"(II) the ratio that—

"(aa) the carbon dioxide equivalent of the nonfuel-related greenhouse gas produced or emitted by the nonfuel regulated entity at facilities in the United States during the 3-year period beginning on January 1, 2004; bears to

"(bb) the carbon dioxide equivalent of the nonfuel-related greenhouse gases produced or emitted by all nonfuel regulated entities at facilities in the United States during that period.

"(6) ALLOWANCES TO STATES.—

"(A) DISTRIBUTION.—The allowances available for allocation to States under paragraph (3) shall be distributed as follows:

"(i) For each year, \1/2\ of the quantity of allowances available for allocation to States under paragraph (3) shall be allocated among the States based on the ratio that—

"(I) the greenhouse gas emissions of the State during the 3-year period beginning on January 1, 2004; bears to

"(II) the greenhouse gas emissions of all States for that period.

"(ii) For each year, \1/2\ of the quantity of allowances available for

allocation to States under paragraph (3) shall be allocated among the States based on the ratio that—

"(I) the population of the State, as determined by the 2000 decennial census; bears to

"(II) the population of all States as determined by that census.

"(B) USE.—

"(i) IN GENERAL.—During any year, a State shall use not less than 90 percent of the allowances allocated to the State for that year—

"(I) to mitigate impacts on low-income energy consumers;

"(II) to promote energy efficiency;

"(III) to promote investment in nonemitting electricity generation technology;

"(IV) to encourage advances in energy technology that reduce or sequester greenhouse gas emissions;

"(V) to avoid distortions in competitive electricity markets;

"(VI) to mitigate obstacles to investment by new entrants in electricity generation markets;

"(VII) to address local or regional impacts of climate change policy, including providing assistance to displaced workers;

"(VIII) to mitigate impacts on energy-intensive industries in internationally-competitive markets; or

"(IX) to enhance energy security.

"(ii) DEADLINE.—A State shall allocate allowances for use in accordance with clause (i) by not later than 1 year before the beginning of each allowance allocation period.

["(6) [POSSIBLE SUBSTITUTE FOR (6)] distribution of allowances by president.—]]

["(A) IN GENERAL.—The President shall distribute the allowances available for allocation by the President under paragraph (3) in a manner designed to mitigate the undue impacts of the program under this subtitle.]

["(B) USE.—During any year, the President shall use not less than 90 percent of the allowances available for allocation by the President for that year—]

["(i) to mitigate impacts on low-income energy consumers;]

["(ii) to promote energy efficiency;]

["(iii) to promote investment in nonemitting electricity generation technology;]

["(iv) to support advances in energy technology that reduce or sequester

greenhouse gas emissions;]

[“(v) to avoid distortions in competitive electricity markets;]

[“(vi) to mitigate obstacles to investment by new entrants in electricity generation markets;]

[“(vii) to address local or regional impacts of climate change policy, including providing assistance to displaced workers;]

[“(viii) to mitigate impacts on energy-intensive industries in internationally-competitive markets; and]

[“(ix) to enhance energy security.]

[“(C) DEADLINE.—The President shall allocate allowances for use in accordance with subparagraph (B) by not later than 1 year before the beginning of each allowance allocation period. [Corresponding changes needed elsewhere if this paragraph is selected.]]

“(7) COST OF ALLOWANCES.—The Secretary shall distribute allowances under this subsection at no cost to the recipient of the allowance.

“(b) Auction of Allowances.—

“(1) IN GENERAL.—The Secretary shall establish, by rule, a procedure for the auction of a quantity of allowances during each calendar year in accordance with paragraph (2).

“(2) BASE QUANTITY.—The base quantity of allowances to be auctioned during a calendar year shall be the product obtained by multiplying—

“(A) the total number of allowances for the calendar year under subsection (a)(3) or (b)(3) of section 1613; and

“(B) the auction percentage for the calendar year under subsection (c).

“(3) SCHEDULE.—The auction of allowances shall be held on the following schedule:

“(A) In 2009, the Secretary shall auction—

“(i) \1/2\ of the allowances available for auction for 2012; and

“(ii) \1/2\ of the allowances available for auction for 2013.

“(B) In 2010, the Secretary shall auction \1/2\ of the allowances available for auction for 2014.

“(C) In 2011, the Secretary shall auction \1/2\ of the allowances available for auction for 2015.

“(D) In 2012 and each subsequent calendar year, the Secretary shall auction—

“(i) \1/2\ of the allowances available for auction for that calendar year; and

"(ii) \1/2\ of the allowances available for auction for the calendar year that is 4 years after that calendar year.

"(4) UNDISTRIBUTED ALLOWANCES.—In an auction held during any calendar year, the Secretary shall auction any allowance that was—

"(A) available for allocation by the Secretary under subsection (a) for the calendar year, but not distributed;

"(B) available during the preceding calendar year for an agricultural sequestration or early reduction activity under section 1620 or 1621, but not distributed during that calendar year; or

"(C) available for distribution by a State under subsection (a)(6), but not distributed by the date that is 1 year before the beginning of the applicable allocation period.

"(c) Available Percentages.—Except as directed under section 1622, the percentage of the total quantity of allowances for each calendar year to be available for allocation, agricultural sequestration and early reduction projects, and auction shall be determined in accordance with the following table:

| Year | Percentage Allocated to Industry | Percentage Allocated to States | Percentage Available for Agricultural Sequestration | Percentage Available for Early Reduction Allowances | Percentage Auctioned |
|---|---|---|---|---|---|
| 2012 | 55 | 29 | 5 | 1 | 10 |
| 2013 | 55 | 29 | 5 | 1 | 10 |
| 2014 | 55 | 29 | 5 | 1 | 10 |
| 2015 | 55 | 29 | 5 | 1 | 10 |
| 2016 | 55 | 29 | 5 | 1 | 10 |
| 2017 | 53 | 29 | 5 | 1 | 12 |
| 2018 | 51 | 29 | 5 | 1 | 14 |
| 2019 | 49 | 29 | 5 | 1 | 16 |
| 2020 | 47 | 29 | 5 | 1 | 18 |
| 2021 | 45 | 29 | 5 | 1 | 20 |
| 2022 & thereafter | 2 less than allocated to industry in the prior year, but not less than 0 | 30 | 5 | 0 | 2 more than available for auction in the prior year, but not more than 65 |

# "SEC. 1615. SUBMISSION OF ALLOWANCES.

"(a) Requirements.—

"(1) REGULATED FUEL DISTRIBUTORS.—For calendar year 2012 and each calendar year thereafter, each regulated fuel distributor shall submit to the Secretary a number

of allowances equal to the carbon dioxide equivalent of the quantity of covered fuel, determined in accordance with subsection (b)(1), for the regulated fuel distributor.

"(2) NONFUEL REGULATED ENTITIES.—For 2012 and each calendar year thereafter, each nonfuel regulated entity shall submit to the Secretary a number of allowances equal to the carbon dioxide equivalent of the quantity of nonfuel-related greenhouse gas, determined in accordance with subsection (b)(2), for the nonfuel regulated entity.

"(b) Regulated Quantities.—

"(1) COVERED FUELS.—For purposes of subsection (a)(1), the quantity of covered fuel shall be equal to—

"(A) for a petroleum refinery located in the United States, the quantity of petroleum products refined, produced, or consumed at the refinery;

"(B) for a natural gas processing plant located in the United States, a quantity equal to the sum of—

"(i) the quantity of natural gas liquids produced or consumed at the plant; and

"(ii) the quantity of natural gas delivered into commerce from, or consumed at, the plant;

"(C) for a coal mine located in the United States, the quantity of coal produced or consumed at the mine; and

"(D) for an importer of coal, petroleum products, or natural gas liquids into the United States, the quantity of coal, petroleum products, or natural gas liquids imported into the United States.

"(2) NONFUEL-RELATED GREENHOUSE GASES.—For purposes of subsection (a)(2), the quantity of nonfuel-related greenhouse gas shall be equal to—

"(A) for a manufacturer or importer of hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, or nitrous oxide, the quantity of hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, or nitrous oxide produced or imported by the manufacturer or importer;

"(B) for an underground coal mine, the quantity of methane emitted by the coal mine;

"(C) for a facility that manufactures adipic acid or nitric acid, the quantity of nitrous oxide emitted by the facility;

"(D) for an aluminum smelter, the quantity of perfluorocarbons emitted by the smelter; and

"(E) for a facility that produces hydrochlorofluorocarbon-22, the quantity of hydrofluorocarbon-23 emitted by the facility.

"(3) ADJUSTMENTS.—

"(A) REGULATED FUEL DISTRIBUTORS.—

"(i) Modification.—The Secretary may modify, by rule, a quantity of covered fuels under paragraph (1) if the Secretary determines that the modification is necessary to ensure that—

"(I) allowances are submitted for all units of covered fuel; and

"(II) allowances are not submitted for the same quantity of covered fuel by more than 1 regulated fuel distributor.

"(ii) EXTENSION.—The Secretary may extend, by rule, the requirement to submit allowances under subsection (a)(1) to an entity that is not a regulated fuel distributor if the Secretary determines that the extension is necessary to ensure that allowances are submitted for all covered fuels.

"(B) NONFUEL REGULATED ENTITIES.—The Secretary may modify, by rule, a quantity of nonfuel-related greenhouse gases under paragraph (2) if the Secretary determines the modification is necessary to ensure that allowances are not submitted for the same volume of nonfuel-related greenhouse gas by more than 1 regulated entity.

"(c) Deadline for Submission.—Any entity required to submit an allowance to the Secretary under this section shall submit the allowance not later than March 31 of the calendar year following the calendar year for which the allowance is required to be submitted.

"(d) Regulations.—The Secretary shall promulgate such regulations as the Secretary determines to be necessary or appropriate to—

"(1) identify and register each regulated entity that is required to submit an allowance under this section; and

"(2) require the submission of reports and otherwise obtain any information the Secretary determines to be necessary to calculate or verify the compliance of a regulated entity with any requirement under this section.

"(e) Exemption Authority for Non-Fuel Regulated Entities.—

"(1) IN GENERAL.—Except as provided in paragraph (2), the Secretary may exempt from the requirements of this subtitle an entity that emits, manufactures, or imports nonfuel-related greenhouse gases for any period during which the Secretary determines, after providing an opportunity for public comment, that measuring or estimating the quantity of greenhouse gases emitted, manufactured, or imported by the entity is not feasible.

"(2) EXCLUSION.—The Secretary may not exempt a regulated fuel distributor from the requirements of this subtitle under paragraph (1).

"(f) Retirement of Allowances.—

"(1) IN GENERAL.—Any person or entity that is not subject to this subtitle may submit to the Secretary an allowance for retirement at any time.

"(2) ACTION BY SECRETARY.—On receipt of an allowance under paragraph (1), the Secretary—

"(A) shall accept the allowance; and

"(B) shall not allocate, auction, or otherwise reissue the allowance.

"(g) Submission of Credits.—A regulated entity may submit a credit distributed by the Secretary pursuant to section 1618, 1619, or 1622(e) in lieu of an allowance.

"(h) Clean Development Mechanism Certified Emission Reductions.—

"(1) IN GENERAL.—The Secretary shall establish, by regulation, procedures under which a regulated entity may submit a clean development mechanism certified emission reduction in lieu of an allowance under this section.

"(2) CLEAR TITLE AND PREVENTION OF DOUBLE-COUNTING.—Procedures established by the Secretary under this subsection shall include such provisions as the Secretary considers to be appropriate to ensure that—

"(A) a regulated entity that submits a clean development mechanism certified emission reduction in lieu of an allowance has clear title to that certified emission reduction; and

"(B) a clean development mechanism certified emission reduction submitted in lieu of an allowance has not been and cannot be used in the future for compliance purposes under any foreign greenhouse gas regulatory program.

"(i) Study on Process Emissions.—

"(1) IN GENERAL.—Not later than [_____], the Secretary shall—

"(A) carry out a study of the feasibility of requiring the submission of allowances for process emissions not otherwise covered by this subtitle; and

"(B) submit to Congress a report that describes the results of the study (including recommendations of the Secretary based on those results).

# "SEC. 1616. SAFETY VALVE.

"The Secretary shall accept from a regulated entity a payment of the applicable safety valve price for a calendar year in lieu of submission of an allowance under section 1615 for that calendar year.

# "SEC. 1617. ALLOWANCE TRADING SYSTEM.

"(a) In General.—The Secretary shall—

"(1) establish, by rule, a trading system under which allowances and credits may be sold, exchanged, purchased, or transferred by any person or entity, including a registry for issuing, recording, and tracking allowances and credits; and

"(2) specify all procedures and requirements required for orderly functioning of the trading system.

"(b) Transparency.—

"(1) IN GENERAL.—The trading system under subsection (a) shall include such provisions as the Secretary considers to be appropriate to—

"(A) facilitate price transparency and participation in the market for allowances and credits; and

"(B) protect buyers and sellers of allowances and credits, and the public, from the adverse effects of collusion and other anticompetitive behaviors.

"(2) AUTHORITY TO OBTAIN INFORMATION.—The Secretary may obtain any information the Secretary considers to be necessary to carry out this section from any person or entity that buys, sells, exchanges, or otherwise transfers an allowance or credit.

"(c) Banking.—Any allowance or credit may be submitted for compliance during any year following the year for which the allowance or credit was issued.

# "SEC. 1618. CREDITS FOR FEEDSTOCKS AND EXPORTS.

"(a) In General.—The Secretary shall establish, by rule, a program under which the Secretary distributes credits to entities in accordance with this section.

"(b) Use of Fuels as Feedstocks.—If the Secretary determines that an entity has used a covered fuel as a feedstock so that the carbon dioxide associated with the covered fuel will not be emitted, the Secretary shall distribute to that entity, for 2012 and each subsequent calendar year, a quantity of credits equal to the quantity of covered fuel used as feedstock by the entity during that year, measured in carbon dioxide equivalents.

"(c) Exporters of Covered Fuel.—If the Secretary determines that an entity has exported covered fuel, the Secretary shall distribute to that entity, for 2012 and each subsequent calendar year, a quantity of credits equal to the quantity of covered fuel exported by the entity during that year, measured in carbon dioxide equivalents.

"(d) Other Exporters.—If the Secretary determines that an entity has exported hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, or nitrous oxide, the Secretary shall distribute to that entity, for 2012 and each subsequent calendar year, a quantity of credits equal to the volume of hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, or nitrous oxide exported by the entity during that year, measured in carbon dioxide equivalents.

# "SEC. 1619. CREDITS FOR OFFSET PROJECTS.

"(a) Establishment.—The Secretary shall establish, by regulation, a program under which the Secretary shall distribute credits to entities that carry out offset projects in the United States that—

"(1)(A) reduce any greenhouse gas emissions that are not covered greenhouse gas emissions; or

"(B) sequester a greenhouse gas;

"(2) meet the requirements of section 1623(c); and

"(3) are consistent with maintaining the environmental integrity of the program under this subtitle.

"(b) Categories of Offset Projects Eligible for Streamlined Procedures.—

"(1) IN GENERAL.—The program established under this section shall include the use of streamlined procedures for distributing credits to categories of projects for which the Secretary determines there are broadly-accepted standards or methodologies for quantifying and verifying the greenhouse gas emission mitigation benefits of the projects.

"(2) CATEGORIES OF PROJECTS.—The streamlined procedures described in paragraph (1) shall apply to—

"(A) geologic sequestration projects not involving enhanced oil recovery;

"(B) landfill methane use projects;

"(C) animal waste or municipal wastewater methane use projects;

"(D) projects to reduce sulfur hexafluoride emissions from transformers;

"(E) projects to destroy hydrofluorocarbons; and

"(F) such other categories of projects as the Secretary may specify by regulation.

"(c) Other Projects.—With respect to an offset project that is eligible to be carried out under this section but that is not classified within any project category described in subsection (b), the Secretary may distribute credits on a basis of less than 1-credit-for-1-ton.

"(d) Ineligible Offset Projects.—An offset project shall not be eligible to receive a credit under this section if the offset project is eligible to receive credits or allowances under section 1618, 1620, 1621, or 1622(e).

# "SEC. 1620. EARLY REDUCTION ALLOWANCES.

"(a) Establishment.—The Secretary shall establish, by rule, a program under which the Secretary distributes to any entity that carries out a project to reduce or sequester greenhouse gas emissions before the initial allocation period a quantity of allowances that reflects the actual emissions reductions or net sequestration of the project, as determined by the Secretary.

"(b) Available Allowances.—The total quantity of allowances distributed under subsection (a) may not exceed the product obtained by multiplying—

"(1) the total number of allowances issued for the calendar year under subsection (a)(3) of section 1613; and

"(2) the percentage available for early reduction allowances for the calendar year under section 1614(c).

"(c) Eligibility.—The Secretary may distribute allowances for early reduction projects only to an entity that has reported the reduced or sequestered greenhouse gas emissions under—

"(1) the Voluntary Reporting of Greenhouse Gases Program of the Energy Information Administration under section 1605(b) of the Energy Policy Act of 1992

(42 U.S.C. 13385(b));

"(2) the Climate Leaders Program of the Environmental Protection Agency; or

"(3) a State-administered or privately-administered registry that includes early reduction actions not covered under the programs described in paragraphs (1) and (2).

# "SEC. 1621. AGRICULTURAL SEQUESTRATION PROJECTS.

"(a) Establishment.—The Secretary of Agriculture shall establish, by rule, a program under which agricultural sequestration allowances are distributed to entities that carry out soil carbon sequestration projects [and other projects?] that—

"(1) meet the requirements of section 1623(c); and

"(2) achieve sequestration results that are—

"(A) greater than sequestration results achieved pursuant to standard agricultural practices; and

["(B) long-term.]

"(b) Quantity.—During a calendar year, the Secretary of Agriculture shall distribute agricultural sequestration allowances in a quantity not greater than the product obtained by multiplying—

"(1) the total number of allowances issued for the calendar year under section 1613; and

"(2) the percentage of allowances available for agricultural sequestration under section 1614(c).

"(c) Oversubscription.—If, during a calendar year, the qualifying agricultural sequestration exceeds the quantity of agricultural sequestration allowances available for distribution under subsection (b), the Secretary of Agriculture may distribute allowances on a basis of less than 1-allowance-for-1-ton.

# "SEC. 1622. CONGRESSIONAL REVIEW.

"(a) Interagency Review.—

"(1) IN GENERAL.—Not later than January 15, 2016, and every 5 years thereafter, the President shall establish an interagency group to review and make recommendations relating to—

"(A) each program under this subtitle; and

"(B) any similar program of a foreign country described in paragraph (2).

"(2) COUNTRIES TO BE REVIEWED.—An interagency group established under paragraph (1) shall review actions and programs relating to greenhouse gas emissions of—

"(A) each member country (other than the United States) of the Organisation

for Economic Co-operation and Development;

"(B) China;

"(C) India;

"(D) Brazil;

"(E) Mexico;

"(F) Russia; and

"(G) Ukraine.

"(3) INCLUSIONS.—A review under paragraph (1) shall—

"(A) for the countries described in paragraph (2), analyze whether the countries that are the highest emitting countries and, collectively, contribute at least 75 percent of the total greenhouse gas emissions of those countries have taken action that—

"(i) in the case of member countries of the Organisation for Economic Co-Operation and Development, is comparable to that of the United States; and

"(ii) in the case of China, India, Brazil, Mexico, Russia, and Ukraine, is significant, contemporaneous, and equitable compared to action taken by the United States;

"(B) analyze whether each of the 5 largest trading partners of the United States, as of the date on which the review is conducted, has taken action with respect to greenhouse gas emissions that is comparable to action taken by the United States;

"(C) analyze whether the programs established under this subtitle have contributed to an increase in electricity imports from Canada or Mexico; and

"(D) make recommendations with respect to whether—

"(i) the rate of reduction of emissions intensity under subsection (a)(2) or (b)(2) of section 1613 should be modified; and

"(ii) the rate of increase of the safety valve price should be modified.

"(4) SUPPLEMENTARY REVIEW ELEMENTS.—A review under paragraph (1) may include an analysis of—

"(A) the feasibility of regulating owners or operators of entities that—

"(i) emit nonfuel-related greenhouse gases; and

"(ii) that are not subject to this subtitle;

"(B) whether the percentage of allowances for any calendar year that are auctioned under section 1614(c) should be modified;

"(C) whether regulated entities should be allowed to submit credits issued under foreign greenhouse gas regulatory programs in lieu of allowances under

section 1615;

"(D) whether the Secretary should distribute credits for offset projects carried out outside the United States that do not receive credit under a foreign greenhouse gas program; and

"(E) whether and how the value of allowances or credits banked for use during a future year should be discounted if an acceleration in the rate of increase of the safety valve price is recommended under paragraph (3)(D)(ii).

"(5) NATIONAL RESEARCH COUNCIL REPORTS.—The President may request such reports from the National Research Council as the President determines to be necessary and appropriate to support the interagency review process under this subsection.

"(b) Report.—

"(1) IN GENERAL.—Not later than January 15, 2017, and every 5 years thereafter, the President shall submit to the House of Representatives and the Senate a report describing any recommendation of the President with respect to changes in the programs under this subtitle.

"(2) RECOMMENDATIONS.—A recommendation under paragraph (1) shall take into consideration the results of the most recent interagency review under subsection (a).

"(c) Congressional Action.—

"(1) CONSIDERATION.—Not later than September 30 of any calendar year during which a report is to be submitted under subsection (b), the House of Representatives and the Senate may consider a joint resolution, in accordance with paragraph (2), that—

"(A) amends subsection (a)(2) or (b)(2) of section 1613;

"(B) modifies the safety valve price; or

"(C) modifies the percentage of allowances to be allocated under section 1614(c).

"(2) REQUIREMENTS.—A joint resolution considered under paragraph (1) shall—

"(A) be introduced during the 45-day period beginning on the date on which a report is required to be submitted under subsection (b); and

"(B) after the resolving clause and 'That', contain only 1 or more of the following:

"(i) ', effective beginning January 1, 2017, section 1613(a)(2) of the Energy Policy Act of 1992 is amended by striking "2.6" and inserting "_____".'.

"(ii) ', effective beginning _____, section 1613(b)(2) of the Energy Policy Act of 1992 is amended by striking "3.0" and inserting "_____".'.

"(iii) ', effective beginning _____, section 1612(13)(B) of the Energy

Policy Act of 1992 is amended by striking “5 percent” and inserting “___ percent”.’.

“(iv) ‘the table under section 1614(c) of the Energy Policy Act of 1992 is amended by striking the line relating to calendar year 2022 and thereafter and inserting the following:

| Year | Percentage Allocated to Industry | Percentage Allocated to States | Percentage Available for Agricultural Sequestration | Percentage Available for Early Reduction Allowances | Percentage Auctioned |
|---|---|---|---|---|---|
| 2022 & thereafter | _____ | _____ | _____ | _____ | _____ |

“(3) APPLICABLE LAW.—Subsections (b) through (g) of section 802 of title 5, United States Code, shall apply to any joint resolution under this subsection.

“(d) Foreign Credits.—

“(1) REGULATIONS.—After taking into consideration the initial interagency review under section (a), the Secretary may promulgate regulations that authorize regulated entities to submit credits issued under foreign greenhouse gas regulatory programs in lieu of allowances under section 1615.

“(2) COMPARABLE PROGRAMS AND PREVENTION OF DOUBLE-COUNTING.—Regulations promulgated by the Secretary under paragraph (1) shall ensure that foreign credits submitted in lieu of allowances are—

“(A) from foreign greenhouse gas regulatory programs that the Secretary determines to have a level of environmental integrity that is not less than the level of environmental integrity of the programs under this subtitle; and

“(B) not also submitted for use in achieving compliance under any foreign greenhouse gas regulatory program.

“(e) International Offsets Projects.—

“(1) ACTION BY THE SECRETARY.—After taking into consideration the results of the initial interagency review under section (a), the Secretary may promulgate regulations establishing a program under which the Secretary distributes credits to entities that—

“(A) carry out offset projects outside the United States that meet the requirements of section 1623(c);

“(B) maintain the environment integrity of the program under this subtitle; and

“(C) do not receive credits issued under a foreign greenhouse gas regulatory program.

“(2) STREAMLINED PROCEDURES AND PREVENTION OF DOUBLE-COUNTING.—Regulations promulgated by the Secretary under the paragraph (1) shall—

"(A) have streamlined procedures for distributing credits to projects for which the Secretary determines there are broadly-accepted standards or methodologies for quantifying and verifying the greenhouse gas emission mitigation benefits of the projects; and

"(B) ensure that offset project reductions credited under the program are not also credited under foreign programs.

# "SEC. 1623. MONITORING AND REPORTING.

"(a) In General.—The Secretary shall require, by rule, that a regulated entity shall perform such monitoring and submit such reports as the Secretary determines to be necessary to carry out this subtitle.

"(b) Submission of Information.—The Secretary shall establish, by rule, any procedure the Secretary determines to be necessary to ensure the completeness, consistency, transparency, and accuracy of reports under subsection (a), including—

"(1) accounting and reporting standards for covered greenhouse gas emissions;

"(2) standardized methods of calculating covered greenhouse gas emissions in specific industries from other information the Secretary determines to be available and reliable, such as energy consumption data, materials consumption data, production data, or other relevant activity data;

"(3) if the Secretary determines that a method described in paragraph (2) is not feasible for a regulated entity, a standardized method of estimating covered greenhouse gas emissions of the regulated entity;

"(4) a method of avoiding double counting of covered greenhouse gas emissions;

"(5) a procedure to prevent a regulated entity from avoiding the requirements of this subtitle by—

"(A) reorganization into multiple entities; or

"(B) outsourcing the operations or activities of the regulated entity with respect to covered greenhouse gas emissions; and

"(6) a procedure for the verification of data relating to covered greenhouse gas emissions by—

"(A) regulated entities; and

"(B) independent verification organizations.

"(c) Determining Eligibility for Credits, Agricultural Sequestration Allowances, and Early Reduction Allowances.—

"(1) IN GENERAL.—An entity shall provide the Secretary with the information described in paragraph (2) in connection with any application to receive—

"(A) a credit under section 1618, 1619, or 1622(e);

"(B) an early reduction allowance under section 1620 (unless, and to the extent that, the Secretary determines that providing the information would not

be feasible for the entity); or

"(C) an agricultural sequestration allowance under section 1621.

"(2) REQUIRED INFORMATION.—

"(A) GREENHOUSE GAS EMISSIONS REDUCTION.—In the case of a greenhouse gas emissions reduction, the entity shall provide the Secretary with information verifying that, as determined by the Secretary—

"(i) the entity has achieved an actual reduction in greenhouse gas emissions—

"(I) relative to historic emissions levels of the entity; and

"(II) taking into consideration any increase in other greenhouse gas emissions of the entity; and

"(ii) if the reduction exceeds the net reduction of direct greenhouse gas emissions of the entity, the entity reported a reduction that was adjusted so as not to exceed the net reduction.

"(B) GREENHOUSE GAS SEQUESTRATION.—In the case of a greenhouse gas sequestration, the entity shall provide the Secretary with information verifying that, as determined by the Secretary, the entity has achieved actual increases in net sequestration, taking into account the total use of materials and energy by the entity in carrying out the sequestration.

# "SEC. 1624. ENFORCEMENT.

"(a) Failure to Submit Allowances.—

"(1) PAYMENT TO SECRETARY.—A regulated entity that fails to submit an allowance (or the safety valve price in lieu of an allowance) for a calendar year not later than March 31 of the following calendar year shall pay to the Secretary, for each allowance the regulated entity failed to submit, an amount equal to the product obtained by multiplying—

"(A) the safety valve price for that calendar year; and

"(B) 3.

"(2) FAILURE TO PAY.—A regulated entity that fails to make a payment to the Secretary under paragraph (1) by December 31 of the calendar year following the calendar year for which the payment is due shall be subject to subsection (b) or (c), or both.

"(b) Civil Enforcement.—

"(1) PENALTY.—A person that the Secretary determines to be in violation of this subtitle shall be subject to a civil penalty of not more than $25,000 for each day during which the entity is in violation, in addition to any amount required under subsection (a)(1).

"(2) INJUNCTION.—The Secretary may bring a civil action for a temporary or permanent injunction against any person described in paragraph (1).

"(c) Criminal Penalties.—A person that willfully fails to comply with this subtitle shall be subject to a fine under title 18, United States Code, or imprisonment for not to exceed 5 years, or both.

# "SEC. 1625. JUDICIAL REVIEW.

"(a) In General.—Except as provided in subsection (b), section 336(b) of the Energy Policy and Conservation Act (42 U.S.C. 6306(b)) shall apply to a review of any rule issued under this subtitle in the same manner, and to the same extent, that section applies to a rule issued under sections 323, 324, and 325 of that Act (42 U.S.C. 6293, 6294, 6295).

"(b) Exception.—A petition for review of a rule under this subtitle shall be filed in the United States Court of Appeals for the District of Columbia.

# "SEC. 1626. ADMINISTRATIVE PROVISIONS.

"(a) Rules and Orders.—The Secretary may issue such rules and orders as the Secretary determines to be necessary or appropriate to carry out this subtitle.

"(b) Data.—

"(1) IN GENERAL.—In carrying out this subtitle, the Secretary may use any authority provided under section 11 of the Energy Supply and Environmental Coordination Act of 1974 (15 U.S.C. 796).

"(2) DEFINITION OF ENERGY INFORMATION.—For the purposes of carrying out this subtitle, the definition of the term 'energy information' under section 11 of the Energy Supply and Environmental Coordination Act of 1974 (15 U.S.C. 796) shall be considered to include any information the Secretary determines to be necessary or appropriate to carry out this subtitle.

# "SEC. 1627. EARLY TECHNOLOGY DEPLOYMENT.

"(a) Trust Fund.—

"(1) ESTABLISHMENT.—There is established in the Treasury a trust fund, to be known as the 'Climate Change Trust Fund' (referred to in this section as the 'Trust Fund').

"(2) DEPOSITS.—The Secretary shall deposit into the Trust Fund any funds received by the Secretary under section 1614(b) or 1616.

"(3) MAXIMUM CUMULATIVE AMOUNT.—Not more than $50,000,000,000 may be deposited into the Trust Fund.

"(b) Distribution.—Beginning in fiscal year 2010, the Secretary shall transfer any funds deposited into the Trust Fund during the previous fiscal year as follows:

"(1) ZERO- OR LOW-CARBON ENERGY TECHNOLOGIES.—50 percent of the funds shall be transferred to the Secretary to carry out the zero- or low-carbon energy technologies program under subsection (c).

"(2) ADVANCED ENERGY TECHNOLOGIES INCENTIVE PROGRAM.—35 percent of the

funds shall be transferred as follows:

"(A) ADVANCED COAL TECHNOLOGIES.—28 percent shall be transferred to the Secretary to carry out the advanced coal and sequestration technologies program under subsection (d).

"(B) CELLULOSIC BIOMASS.—7 percent shall be transferred to the Secretary to carry out—

"(i) the cellulosic biomass ethanol and municipal solid waste loan guarantee program under section 212(b) of the Clean Air Act (42 U.S.C. 7546(b));

"(ii) the cellulosic biomass ethanol conversion assistance program under section 212(e) of that Act (42 U.S.C. 7546(e)); and

"(iii) the fuel from cellulosic biomass program under subsection (e).

"(3) ADVANCED TECHNOLOGY VEHICLES.—15 percent shall be transferred to the Secretary to carry out the advanced technology vehicles manufacturing incentive program under subsection (f).

"(c) Zero- or Low-Carbon Energy Technologies Deployment.—

"(1) DEFINITIONS.—In this subsection:

"(A) ENERGY SAVINGS.—The term 'energy savings' means megawatt-hours of electricity or million British thermal units of natural gas saved by a product, in comparison to projected energy consumption under the energy efficiency standard applicable to the product.

"(B) HIGH-EFFICIENCY CONSUMER PRODUCT.—The term 'high-efficiency consumer product' means a covered product to which an energy conservation standard applies under section 325 of the Energy Policy and Conservation Act (42 U.S.C. 6295), if the energy efficiency of the product exceeds the energy efficiency required under the standard.

"(C) ZERO- OR LOW-CARBON GENERATION.—The term 'zero- or low-carbon generation' means generation of electricity by an electric generation unit that—

"(i) emits no carbon dioxide into the atmosphere, or is fossil-fuel fired and emits into the atmosphere not more than 250 pounds of carbon dioxide per megawatt-hour (after adjustment for any carbon dioxide from the unit that is geologically sequestered); and

"(ii) was placed into commercial service after the date of enactment of this Act.

"(2) FINANCIAL INCENTIVES PROGRAM.—During each fiscal year beginning on or after October 1, 2008, the Secretary shall competitively award financial incentives under this subsection in the following technology categories:

"(A) Production of electricity from new zero- or low-carbon generation.

"(B) Manufacture of high-efficiency consumer products.

"(3) REQUIREMENTS.—

"(A) IN GENERAL.—The Secretary shall make awards under this subsection to producers of new zero- or low-carbon generation and to manufacturers of high-efficiency consumer products—

"(i) in the case of producers of new zero- or low-carbon generation, based on the bid of each producer in terms of dollars per megawatt-hour of electricity generated; and

"(ii) in the case of manufacturers of high-efficiency consumer products, based on the bid of each manufacturer in terms of dollars per megawatt-hour or million British thermal units saved.

"(B) ACCEPTANCE OF BIDS.—

"(i) IN GENERAL.—In making awards under this subsection, the Secretary shall—

"(I) solicit bids for reverse auction from appropriate producers and manufacturers, as determined by the Secretary; and

"(II) award financial incentives to the producers and manufacturers that submit the lowest bids that meet the requirements established by the Secretary.

"(ii) FACTORS FOR CONVERSION.—

"(I) IN GENERAL.—For the purpose of assessing bids under clause (i), the Secretary shall specify a factor for converting megawatt-hours of electricity and million British thermal units of natural gas to common units.

"(II) REQUIREMENT.—The conversion factor shall be based on the relative greenhouse gas emission benefits of electricity and natural gas conservation.

"(C) INELIGIBLE UNITS.—A new unit for the generation of electricity that uses renewable energy resources shall not be eligible to receive an award under this subsection if the unit receives renewable energy credits under a Federal renewable portfolio standard.

"(4) FORMS OF AWARDS.—

"(A) ZERO- AND LOW-CARBON GENERATORS.—An award for zero- or low-carbon generation under this subsection shall be in the form of a contract to provide a production payment for each year during the first 10 years of commercial service of the generation unit in an amount equal to the product obtained by multiplying—

"(i) the amount bid by the producer of the zero- or low-carbon generation; and

"(ii) the megawatt-hours estimated to be generated by the zero- or low-carbon generation unit each year.

"(B) HIGH-EFFICIENCY CONSUMER PRODUCTS.—An award for a high-efficiency consumer product under this subsection shall be in the form of a lump sum payment in an amount equal to the product obtained by multiplying—

"(i) the amount bid by the manufacturer of the high-efficiency consumer product; and

"(ii) the energy savings during the projected useful life of the high-efficiency consumer product, not to exceed 10 years, as determined under rules issued by the Secretary.

"(d) Advanced Coal and Sequestration Technologies Program.—

"(1) ADVANCED COAL TECHNOLOGIES.—

"(A) DEFINITION OF ADVANCED COAL GENERATION TECHNOLOGY.—In this paragraph, the term 'advanced coal generation technology' means integrated gasification combined cycle or other advanced coal-fueled power plant technologies that—

"(i) have a minimum of 50 percent coal heat input on an annual basis;

"(ii) provide a technical pathway for carbon capture and storage; and

"(iii) provide a technical pathway for co-production of a hydrogen slip-stream.

"(B) DEPLOYMENT INCENTIVES.—

"(i) IN GENERAL.—The Secretary shall use \1/2\ of the funds provided to carry out this subsection during each fiscal year to provide Federal financial incentives to facilitate the deployment of not more than 20 gigawatts of advanced coal generation technologies.

"(ii) ADMINISTRATION.—In providing incentives under clause (i), the Secretary shall—

"(I) provide appropriate incentives for regulated investor-owned utilities, municipal utilities, electric cooperatives, and independent power producers, as determined by the Secretary; and

"(II) ensure that a range of the domestic coal types is employed in the facilities that receive incentives under this subparagraph.

"(C) FUNDING PRIORITIES.—

"(i) PROJECTS USING CERTAIN COALS.—In providing incentives under this paragraph, the Secretary shall set aside not less than 25 percent of any funds made available to carry out this paragraph for projects using lower rank coals, such as subbituminous coal and lignite.

"(ii) SEQUESTRATION ACTIVITIES.—After the Secretary has made awards for 2000 megawatts of capacity under this paragraph, the Secretary shall give priority to projects that will capture and sequester emissions of carbon dioxide, as determined by the Secretary.

"(D) DISTRIBUTION OF FUNDS.—A project that receives an award under this paragraph may elect 1 of the following Federal financial incentives:

"(i) A loan guarantee under section 1403(b).

"(ii) A cost-sharing grant for not more than 50 percent of the cost of the project.

"(iii) Production payments of not more than 1.5 cents per kilowatt-hour of electric output during the first 10 years of commercial service of the project.

"(E) LIMITATION.—A project may not receive an award under this subsection if the project receives an award under subsection (c).

"(2) SEQUESTRATION.—

"(A) IN GENERAL.—The Secretary shall use \1/2\ of the funds provided to carry out this subsection during each fiscal year for large-scale geologic carbon storage demonstration projects that use carbon dioxide captured from facilities for the generation of electricity using coal gasification or other advanced coal combustion processes, including facilities that receive assistance under paragraph (1).

"(B) PROJECT CAPITAL AND OPERATING COSTS.—The Secretary shall provide assistance under this paragraph to reimburse the project owner for a percentage of the incremental project capital and operating costs of the project that are attributable to carbon capture and sequestration, as the Secretary determines to be appropriate.

"(e) Fuel From Cellulosic Biomass.—

"(1) IN GENERAL.—The Secretary shall provide deployment incentives under this subsection to encourage a variety of projects to produce transportation fuels from cellulosic biomass, relying on different feedstocks in different regions of the United States.

"(2) PROJECT ELIGIBILITY.—Incentives under this paragraph shall be provided on a competitive basis to projects that produce fuels that—

"(A) meet United States fuel and emissions specifications;

"(B) help diversify domestic transportation energy supplies; and

"(C) improve or maintain air, water, soil, and habitat quality.

"(3) INCENTIVES.—Incentives under this subsection may consist of—

"(A) additional loan guarantees under section 1403(b) for the construction of production facilities and supporting infrastructure; or

"(B) production payments through a reverse auction in accordance with paragraph (4).

"(4) REVERSE AUCTION.—

"(A) IN GENERAL.—In providing incentives under this subsection, the

Secretary shall—

"(i) prescribe rules under which producers of fuel from cellulosic biomass may bid for production payments under paragraph (3)(B); and

"(ii) solicit bids from producers of different classes of transportation fuel, as the Secretary determines to be appropriate.

"(B) REQUIREMENT.—The rules under subparagraph (A) shall require that incentives shall be provided to the producers that submit the lowest bid (in terms of cents per gallon) for each class of transportation fuel from which the Secretary solicits a bid.

"(f) Advanced Technology Vehicles Manufacturing Incentive Program.—

"(1) DEFINITIONS.—In this subsection:

"(A) ADVANCED LEAN BURN TECHNOLOGY MOTOR VEHICLE.—The term 'advanced lean burn technology motor vehicle' means a passenger automobile or a light truck with an internal combustion engine that—

"(i) is designed to operate primarily using more air than is necessary for complete combustion of the fuel;

"(ii) incorporates direct injection; and

"(iii) achieves at least 125 percent of the 2002 model year city fuel economy of vehicles in the same size class as the vehicle.

"(B) ADVANCED TECHNOLOGY VEHICLE.—The term 'advanced technology vehicle' means a light duty motor vehicle that—

"(i) is a hybrid motor vehicle or an advanced lean burn technology motor vehicle; and

"(ii) meets the following performance criteria:

"(I) Except as provided in paragraph (3)(A)(ii), the Tier II Bin 5 emission standard established in regulations prescribed by the Administrator of the Environmental Protection Agency under section 202(i) of the Clean Air Act (42 U.S.C. 7521(i)), or a lower numbered bin.

"(II) At least 125 percent of the base year city fuel economy for the weight class of the vehicle.

"(C) ENGINEERING INTEGRATION COSTS.—The term 'engineering integration costs' includes the cost of engineering tasks relating to—

"(i) incorporating qualifying components into the design of advanced technology vehicles; and

"(ii) designing new tooling and equipment for production facilities that produce qualifying components or advanced technology vehicles.

"(D) HYBRID MOTOR VEHICLE.—The term 'hybrid motor vehicle' means a motor vehicle that draws propulsion energy from onboard sources of stored

energy that are—

"(i) an internal combustion or heat engine using combustible fuel; and

"(ii) a rechargeable energy storage system.

"(E) QUALIFYING COMPONENTS.—The term 'qualifying components' means components that the Secretary determines to be—

"(i) specially designed for advanced technology vehicles; and

"(ii) installed for the purpose of meeting the performance requirements of advanced technology vehicles.

"(2) MANUFACTURER FACILITY CONVERSION AWARDS.—The Secretary shall provide facility conversion funding awards under this subsection to automobile manufacturers and component suppliers to pay 30 percent of the cost of—

"(A) re-equipping or expanding an existing manufacturing facility to produce—

"(i) qualifying advanced technology vehicles; or

"(ii) qualifying components; and

"(B) engineering integration of qualifying vehicles and qualifying components.

"(3) PERIOD OF AVAILABILITY.—

"(A) PHASE I.—

"(i) IN GENERAL.—An award under paragraph (2) shall apply to—

"(I) facilities and equipment placed in service before January 1, 2016; and

"(II) engineering integration costs incurred during the period beginning on the date of enactment of this Act and ending on December 31, 2015.

"(ii) TRANSITION STANDARD FOR LIGHT DUTY DIESEL-POWERED VEHICLES.—For purposes of making an award under clause (i), the term 'advanced technology vehicle' includes a diesel-powered or diesel-hybrid light duty vehicle that—

"(I) has a weight greater than 6,000 pounds; and

"(II) meets the Tier II Bin 8 emission standard established in regulations prescribed by the Administrator of the Environmental Protection Agency under section 202(i) of the Clean Air Act (42 U.S.C. 7521(i)), or a lower numbered bin.

"(B) PHASE II.—If the Secretary determines under paragraph (4) that the program under this subsection has resulted in a substantial improvement in the ability of automobile manufacturers to produce light duty vehicles with improved fuel economy, the Secretary shall continue to make awards under

paragraph (2) that shall apply to—

"(i) facilities and equipment placed in service before January 1, 2021; and

"(ii) engineering integration costs incurred during the period beginning on January 1, 2016, and ending on December 31, 2020.

"(4) DETERMINATION OF IMPROVEMENT.—

"(A) IN GENERAL.—Not later than January 1, 2015, the Secretary shall determine, after providing notice and an opportunity for public comment, whether the program under this subsection has resulted in a substantial improvement in the ability of automobile manufacturers to produce light duty vehicles with improved fuel economy.

"(B) EFFECT ON MANUFACTURERS.—In preparing the determination under subparagraph (A), the Secretary shall enter into an agreement with the National Academy of Sciences to analyze the effect of the program under this subsection on automobile manufacturers.

# "SEC. 1628. EFFECT OF SUBTITLE.

"Nothing in this subtitle affects the authority of Congress to limit, terminate, or change the value of an allowance or credit issued under this subtitle.".

# Appendix C. Provided Bill Summary

## Market-Based GHG Emission Trading
## Discussion Draft

The 2005 Sense of the Senate resolution on climate change emphasized that the risks associated with a changing climate justify the adoption of mandatory limits on greenhouse gas (GHG) emissions and that an important first step towards addressing climate change can be taken at an acceptable cost. In that spirit, this staff draft outlines a legislative proposal that would begin with a modest emissions-reduction target and strengthen gradually over time. The approach is consistent with that of the successful Acid Rain Program in that it sets a "forward price" on emissions to provide both the flexibility and incentive needed to accelerate technology development and deployment. The long-term price signal that a forward price creates would be critical for giving industry certainty and for focusing its decision-making on lower carbon options. However, the price signal initially imposed under any domestic regime would not likely be strong enough to motivate the development and deployment of the key technologies that will ultimately be needed to stop and reverse GHG emissions. Thus, in order to speed technology deployment, the staff draft includes provisions to create incentives for new technology and provides significant new R&D funding for low- and no-carbon technologies.

### Key Features

*Target, Timing and Price Cap*

- **Emissions Target**: The target is calculated in advance to reflect a 2.6 percent per year decline in the emissions intensity of the U.S. economy (expressed as total GHG emissions per dollar of GDP) for the first period of program implementation (2012 to 2021). The target rate of decline in emissions intensity increases to 3.0 percent per year in the second period (2022 onward). The emissions target establishes the total quantity of allowances available each year.

- **Price Cap:** The government would make additional allowances (above and beyond the quantity initially allocated under the emissions target) available for sale at a fixed price. The price starts at $7 per metric ton of carbon-dioxide-equivalent GHG emissions in the first year of program implementation and rises steadily thereafter at an annual rate of 5 percent above the rate of inflation.

*Explanation of Approach*

- **Consistent with Sense of Senate Resolution:** By targeting an annual decline in emissions intensity, the proposal is designed to first slow emissions growth (over the period from 2012 through 2021), before attempting to stop emissions growth starting in 2022. Ultimately, emissions will need to decline in absolute terms to stabilize greenhouse gas concentrations in the atmosphere, meaning that the rate of decline in emissions intensity will eventually need to outpace economic

growth. This proposal establishes a policy framework for achieving a long-term trajectory of emissions reductions in what would necessarily be a phased process.

- **Limits Costs to the Overall Economy and Provides Price Certainty for Investors:** By making additional allowances available at a known price, the proposal effectively caps the costs imposed on the U.S. economy and on consumers. Additional allowances would be purchased (and emissions would exceed the economy-wide target) only if the market price of allowances were to rise above the price cap. The price cap increases by 5 percent each year above the rate of inflation so as to provide progressively stronger incentives for emissions abatement over time and to establish a predictable market signal for investors.

- **Changes from 2005 Bingaman Proposal:** Based on numerous comments received during the Committee's discussion of this issue, implementation is delayed 2 years, from 2010 to 2012. This change will allow the current voluntary Administration program to run its full course before any new policy takes effect and will provide sufficient time to get the trading program in place. To compensate for the delay, the proposed bill accelerates the rate by which the cost cap increases, from 5 percent nominal to 5 percent above inflation. The bill also changes the targeted decline in emissions intensity from 2.4 percent per year to 2.6 percent per year in the first allocation period, and from 2.8 percent per year to 3.0 percent per year in the second period, to adjust for greater "business-as-usual" reductions in emissions intensity stemming from higher projected energy prices.

*Scope and Point of Regulation*

- **Scope:** The program is economy-wide.

- **Point of Regulation**: Carbon dioxide ($CO_2$) emissions from fossil fuels are regulated upstream at the point of fossil fuel production, and regulated entities are required to submit allowances equal to the carbon content of fuels produced or processed at their facilities.

- **Regulated Entities:** Entities required to submit allowances include:
    - Petroleum refineries
    - Natural gas processing facilities
    - Coal mines
    - Fossil fuel importers (for petroleum, this includes refined products only) and importers of gases with high-global warming potential (GWP)
    - Non-$CO_2$ greenhouse gases: coal mine methane; $N_2O$ from adipic acid production; high-GWP gases

*Explanation of Approach*

- Placing the point-of-regulation relatively higher up in the progression from energy production to consumption reduces the number of sources that must be regulated

and simplifies program administration. This approach more efficiently captures all sources of emissions and all emissions reduction opportunities throughout the economy. In addition, an upstream approach may reduce overall administrative costs.

*Allowance Distribution*

- **Allocation to Private Sector Entities:** For the first five years of program implementation, 55 percent of the total quantity of allowances available under the emissions target would be allocated without cost to private sector entities. This amount is gradually reduced to 0 percent over 30 years. The industry sectors receiving free allocations under this proposed approach are:
    - Coal mines and coal importers
    - Petroleum refineries and refined-product importers
    - Natural gas processing plants and natural gas importers
    - Non-$CO_2$ regulated entities
    - Coal, oil and natural gas electric generators
    - Carbon-intensive industrial sectors

- **Auction:** For the first five years of program implementation, 10 percent of the total quantity of allowances available under the emissions target would be auctioned. The share of allowances auctioned would gradually increase to 65 percent over 30 years. Auction revenues are used for R&D and to support the deployment of low- and no-carbon technologies.
- **Agricultural Sequestration:** 5 percent of the total quantity of allowances allocated under the emissions target annually would be for agricultural sequestration activities (see below).
- **Early Reduction Credits:** 1 percent of the total quantity of allowances allocated under the emissions target for each of the first 10 years would be reserved for entities that had undertaken projects resulting in early reductions in greenhouse gases.

- **Distribution by States or the President (to "fine tune" allocation):** 29 percent – 30 percent of the total quantity of allowances allocated under the emissions target:
    - States or the President would distribute allowances for certain defined purposes, such as addressing economic impacts, promoting technology or energy efficiency, and enhancing energy security.
    - If States distribute allowances, their overall amount would be based half on emissions and half on population.

*Explanation of Approach*

- **Allocation Based on Cost Impacts:** Under the proposal, allowances are allocated in a manner that recognizes and roughly addresses the disparate costs imposed by the program. Allowances are not allocated solely to regulated entities because these entities do not bear all or even most of the costs of the emissions trading program.
- **Auction Phased in Over Time:** Over time, allowance distribution transitions from an approach that fairly compensates sectors for past investments in carbon-intensive technologies to an approach that creates incentives for energy efficiency and lower carbon technologies. This is accomplished by gradually reducing the quantity of allowances given away without cost while gradually increasing the quantity of allowances auctioned.
- **Auction Proceeds for Technology R&D and Incentives:** Virtually all experts agree that significant technology advancements will be needed to adequately and affordably address climate change over the next century. Reserving proceeds from the auction for energy research, development, and deployment would provide the revenue to support significant new development and deployment of the breakthrough technologies needed to address climate change.

- **Allocation for Primary Fuel Producers:** The compliance costs for fossil fuel producers in an upstream system represent only a small portion of the overall costs of any trading program. Most upstream producers can and would simply pass allowance costs through in the form of higher fuel prices, regardless of whether they were to receive free allowances or were required to pay for them. Analysis shows that costs to primary fuel producers would be completely offset by an allocation of roughly 5 percent to 10 percent of the total pool of allowances. However, the EIA analysis of last year's proposal by Senator Bingaman shows that coal companies, while able to pass a substantial portion of their costs through in prices, might be more affected than other energy producers. Although coal demand and sales would continue to grow under the proposed GHG trading program, coal use is projected to grow more slowly under the program than in the absence of regulatory action. Accordingly, the proposal acknowledges the slower growth in coal demand expected as a result of the bill and allocates 7 percent of the total pool of allowances available under the emissions target to coal producers. Oil and gas producers would receive 4 percent and 2 percent, respectively, of that total allowance pool.

- **Allocations for Downstream Electric Generators:** Although electric generators would not be regulated under the staff draft proposal, they would face higher production costs as fossil fuel prices rise. A portion, though not all, of these additional fuel costs would be passed through in higher electricity prices. To the extent that generators were to receive allocations of free allowances, they would be able to sell those allowances and use the revenue to offset higher fuel costs. Based on cost estimates provided by EIA, further analysis suggests that a 10

percent share of the total allocation would fully offset adverse impacts on electric generators. The 10 percent figure assumes that the allocation system perfectly targets allowances to the companies that bear non-recoverable costs. Recognizing that a perfectly targeted allocation is not possible and that some "passed through" costs would revert to fossil-based electric generators, a higher fraction would need to be allocated to fossil generators to fairly offset the impacts of increased fuel prices. If, in the extreme, fossil generators were to bear all program costs without passing any along to rate payers, they would need 40 percent of the total allocation pool to offset their costs. Therefore, between 10 percent and 40 percent of the total allocation reflects the theoretical range of allowances needed to offset the financial impact of increased fuel prices in the electric sector. Using a point in this range, the draft allocates 30 percent of the total pool of allowances available under the emissions target (equal to roughly 75 percent of electricity sector emissions) to fossil-fuel fired generation.

- **Allocations for Carbon-Intensive Industries:** Energy-intensive industries, such as steel, aluminum, chemicals, pulp and paper, and cement, would not be regulated in an upstream trading system. Like electric generators, these industries would, however, face higher prices for fossil fuels under a greenhouse gas trading system. While price increases would be modest, these industries consume significant amounts of fossil fuels and often face stiff competition from foreign competitors, most of whom would not be subject to mandatory greenhouse gas regulation. Including these industries in the allocation would not affect their incentive to improve efficiency and reduce fuel use, but it would offset increased energy costs and help to address competitiveness concerns associated with a domestic greenhouse gas trading program. If one provided allocations of free allowances only to the large, energy-intensive industries noted above—steel, aluminum, chemicals, and pulp and paper—close to 10 percent of the overall allowance pool would be required. The proposal allocates 10 percent of the total annual allocation towards carbon-intensive industries.

- **Allowance Pool to "Fine Tune" Allocation:** Although the approach outlined above generally addresses the cost impacts of the proposal, we recognize that costs are imposed on additional groups and that it may be desirable to address additional policy goals through the allocation process. Therefore, a significant portion of allowances is reserved for these purposes. These allowances would go towards several specific purposes, such as addressing economic impacts, creating incentives for energy efficiency or other "climate friendly" technologies, and enhancing energy security. The proposal presents two options for distributing these allowances: either States would distribute the allowances or the allowances would be distributed according to a process designated by the President.

- **Early Reduction Programs:** For the first ten years, 1 percent of the total pool of allowances available annually under the emissions target would be set aside for an early reduction credit program that would award allowances to companies or other organizations that reduced emissions prior to the implementation of a

mandatory program. These include reductions reported through DOE/EIA's 1605b program, and reductions made through other government-sponsored and private programs identified by the Secretary of Energy.

*Offset Projects*

- **Cost-Effective Reductions:** Allowances could be provided for cost-effective emissions reductions not otherwise covered by the trading program (e.g., capturing and using methane from landfills).
- **Tiered System:** The proposal would establish a tiered system of offsets whereby the most easily verified project types could use a streamlined procedure to apply for allowances.

*Explanation of Approach*

- Offset projects can provide low-cost emission reductions and create incentives for new technologies and approaches. The proposed approach would encourage investor certainty and lower transaction costs while ensuring that offset projects have environmental integrity.

*Incentives for Farmers*

- **Agricultural Sequestration:** The proposal creates a significant new pilot program to encourage and evaluate the benefits of agricultural soil sequestration.
- **Allowance Set-Aside:** 5% of the total pool of allowances available annually under the emissions target would be reserved for sequestration projects by farmers.

*Explanation of Approach*

- Sequestration of carbon in agricultural soils is a potentially important option for addressing greenhouse gases and could eventually create a significant new source of revenue for farmers. However, there is relatively little long-term experience with monitoring, reporting and verifying agricultural sequestration. Providing agricultural sequestration projects with allowances *from within the pool of allowances established under the program target* would allow the nation to benefit from large-scale demonstration projects aimed at resolving some of these issues, while still ensuring that the program achieves its intended environmental goals. Thus, 5 percent of the initial allowance pool would be reserved to provide incentives for agricultural sequestration projects.

*International Linkages*

- **Review of Actions by Trade Partners and Large Emitters:** Planned increases in the target rate of emissions intensity reductions and in the price cap could be halted or modified if, during a review process that would occur every five years (Five-Year Review), it were determined that major trade partners and other large emitters were not taking appropriate actions to address greenhouse gases.

- **Consider Implications of Linking to Other Trading Programs:** The Five-Year Review Process also provides an opportunity to consider linking the U.S. program to other countries' domestic GHG reduction programs.

*Explanation of Approach*

- All stakeholders recognize the need to encourage comparable action by other nations that are major trading partners and key contributors to global GHG emissions. The draft acknowledges that the U.S. should show leadership by taking action on greenhouse gases. However, after the initial stage, further steps would be contingent on a review of progress by other nations in addressing their GHG emissions.

- Differences in the design of domestic trading programs (e.g., different target levels, different monitoring and verification systems) might complicate efforts to link programs internationally, especially in the near-term. Thus, rather than providing a provision for formal linkage now, the draft leaves further consideration of these issues to the Five-Year Review process.

# Appendix D. Follow Up Request Letter

United States Senate
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
WASHINGTON, DC 20510-6150
ENERGY.SENATE.GOV

October 11, 2006

Dr. Howard Gruenspecht
Deputy Administrator
Energy Information Administration
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Dr. Gruenspecht:

This letter follows up on the request of September 27, 2006, that EIA provide an analysis of draft climate legislation. Since the time of that request, I have identified three specific issues that I would like to see explicitly addressed in EIA's report: 1) the impact of higher and lower starting prices for the program's "safety valve" price; 2) the impacts of allowing GHG offsets and the potential impact of not permitting or limiting them; and 3) the impact on program costs and the distribution of those costs associated with using a different point of regulation, specifically an alternative in which the point of regulation for coal was downstream (i.e., at electric power plants and industrial sources). While I would like EIA's report to address these issues, it is not necessary to provide a full presentation of all alternative cases that are run to develop insights into these issues.

Please do not hesitate to contact me if you have any questions regarding this additional request.

Sincerely,

Jonathan Black