

**[STAFF WORKING DRAFT]**

MAY 26, 2005

109TH CONGRESS  
1ST SESSION

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

To provide for a program to accelerate the reduction of greenhouse gas emissions in the United States by establishing a market-driven system of greenhouse gas tradeable allowances, to limit greenhouse gas emissions in the United States and reduce dependence upon foreign oil, to support the deployment of new climate change-related technologies, and ensure benefits to consumers from the trading in such allowances, and for other purposes.

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IN THE SENATE OF THE UNITED STATES

MAY —, 2005

Mr. MCCAIN (for himself, Mr. LIEBERMAN, and Mr. \_\_\_\_\_) introduced the following bill; which was read twice and referred to the Committee on \_\_\_\_\_

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**A BILL**

To provide for a program to accelerate the reduction of greenhouse gas emissions in the United States by establishing a market-driven system of greenhouse gas tradeable allowances, to limit greenhouse gas emissions in the United States and reduce dependence upon foreign oil, to support the deployment of new climate change-related technologies, and ensure benefits to consumers

from the trading in such allowances, and for other purposes.

**1 SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Climate Stewardship  
3 and Innovation Act of 2005”.

**4 SEC. 2. TABLE OF CONTENTS.**

5 The table of contents for this Act is as follows:

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- Sec. 3. Definitions.

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- Sec. 103. Research grants.
- Sec. 104. Abrupt climate change research.
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1 **SEC. 3. DEFINITIONS.**

2 In this Act:

3 (1) ADMINISTRATOR.—The term “Adminis-  
4 trator” means the Administrator of the Environ-  
5 mental Protection Agency.

6 (2) BASELINE.—The term “baseline” means  
7 the historic greenhouse gas emission levels of an en-  
8 tity, as adjusted upward by the Administrator to re-  
9 flect actual reductions that are verified in accord-  
10 ance with—

11 (A) regulations promulgated under section  
12 201(c)(1); and

13 (B) relevant standards and methods devel-  
14 oped under this title.

15 (3) CARBON DIOXIDE EQUIVALENTS.—The term  
16 “carbon dioxide equivalents” means, for each green-  
17 house gas, the amount of each such greenhouse gas  
18 that makes the same contribution to global warming  
19 as one metric ton of carbon dioxide, as determined  
20 by the Administrator.

21 (4) COVERED SECTORS.—The term “covered  
22 sectors” means the electricity, transportation, indus-  
23 try, and commercial sectors, as such terms are used  
24 in the Inventory.

1           (5) COVERED ENTITY.—The term “covered en-  
2           tity” means an entity (including a branch, depart-  
3           ment, agency, or instrumentality of Federal, State,  
4           or local government) that—

5                   (A) owns or controls a source of green-  
6           house gas emissions in the electric power, in-  
7           dustrial, or commercial sectors of the United  
8           States economy (as defined in the Inventory),  
9           refines or imports petroleum products for use in  
10          transportation, or produces or imports  
11          hydrofluorocarbons, perfluorocarbons, or sulfur  
12          hexafluoride; and

13                   (B) emits, from any single facility owned  
14          by the entity, over 10,000 metric tons of green-  
15          house gas per year, measured in units of carbon  
16          dioxide equivalents, or produces or imports—

17                           (i) petroleum products that, when  
18                           combusted, will emit,

19                           (ii) hydrofluorocarbons,  
20                           perfluorocarbons, or sulfur hexafluoride  
21                           that, when used, will emit, or

22                           (iii) other greenhouse gases that,  
23                           when used, will emit,

1 over 10,000 metric tons of greenhouse gas per  
2 year, measured in units of carbon dioxide  
3 equivalentents.

4 (6) DATABASE.—The term “database” means  
5 the national greenhouse gas database established  
6 under section 201.

7 (7) DIRECT EMISSIONS.—The term “direct  
8 emissions” means greenhouse gas emissions by an  
9 entity from a facility that is owned or controlled by  
10 that entity.

11 (8) FACILITY.—The term “facility” means a  
12 building, structure, or installation located on any 1  
13 or more contiguous or adjacent properties of an enti-  
14 ty in the United States.

15 (9) GREENHOUSE GAS.—The term “greenhouse  
16 gas” means—

- 17 (A) carbon dioxide;
- 18 (B) methane;
- 19 (C) nitrous oxide;
- 20 (D) hydrofluorocarbons;
- 21 (E) perfluorocarbons; and
- 22 (F) sulfur hexafluoride.

23 (10) INDIRECT EMISSIONS.—The term “indirect  
24 emissions” means greenhouse gas emissions that  
25 are—

1 (A) a result of the activities of an entity;  
2 but

3 (B) emitted from a facility owned or con-  
4 trolled by another entity.

5 (11) INVENTORY.—The term “Inventory”  
6 means the Inventory of U.S. Greenhouse Gas Emis-  
7 sions and Sinks, prepared in compliance with the  
8 United Nations Framework Convention on Climate  
9 Change Decision 3/CP.5).

10 (12) LEAKAGE.—The term “leakage” means—

11 (A) an increase in greenhouse gas emis-  
12 sions by one facility or entity caused by a re-  
13 duction in greenhouse gas emissions by another  
14 facility or entity; or

15 (B) a decrease in sequestration that is  
16 caused by an increase in sequestration at an-  
17 other location.

18 (13) PERMANENCE.—The term “permanence”  
19 means the extent to which greenhouse gases that are  
20 sequestered will not later be returned to the atmos-  
21 phere.

22 (14) REGISTRY.—The term “registry” means  
23 the registry of greenhouse gas emission reductions  
24 established under section 201(b)(2).

1           (15) SECRETARY.—The term “Secretary”  
2 means the Secretary of Commerce.

3           (16) SEQUESTRATION.—

4           (A) IN GENERAL.—The term “sequestra-  
5 tion” means the capture, long-term separation,  
6 isolation, or removal of greenhouse gases from  
7 the atmosphere.

8           (B) INCLUSIONS.—The term “sequestra-  
9 tion” includes—

10           (i) agricultural and conservation prac-  
11 tices;

12           (ii) reforestation;

13           (iii) forest preservation; and

14           (iv) any other appropriate method of  
15 capture, long-term separation, isolation, or  
16 removal of greenhouse gases from the at-  
17 mosphere, as determined by the Adminis-  
18 trator.

19           (C) EXCLUSIONS.—The term “sequestra-  
20 tion” does not include—

21           (i) any conversion of, or negative im-  
22 pact on, a native ecosystem; or

23           (ii) any introduction of non-native  
24 species.

1           (17) SOURCE CATEGORY.—The term “source  
2 category” means a process or activity that leads to  
3 direct emissions of greenhouse gases, as listed in the  
4 Inventory.

5           (18) STATIONARY SOURCE.—The term “sta-  
6 tionary source” means generally any source of  
7 greenhouse gases except those emissions resulting di-  
8 rectly from an engine for transportation purposes.

9       **TITLE I—FEDERAL CLIMATE**  
10       **CHANGE RESEARCH AND RE-**  
11       **LATED ACTIVITIES**

12       **SEC. 101. NATIONAL SCIENCE FOUNDATION FELLOWSHIPS.**

13       The Director of the National Science Foundation  
14 shall establish a fellowship program for students pursuing  
15 graduate studies in global climate change, including capa-  
16 bility in observation, analysis, modeling, paleoclimatology,  
17 consequences, and adaptation.

18       **SEC. 102. REPORT ON UNITED STATES IMPACT OF KYOTO**  
19                       **PROTOCOL.**

20       Within 6 months after the date of enactment of this  
21 Act, the Secretary shall execute a contract with the Na-  
22 tional Academy of Science for a report to the Senate Com-  
23 mittee on Commerce, Science, and Transportation and the  
24 House of Representatives Committee on Science on the ef-

1 facts that the entry into force of the Kyoto Protocol with-  
2 out United States participation will have on—

3 (1) United States industry and its ability to  
4 compete globally;

5 (2) international cooperation on scientific re-  
6 search and development; and

7 (3) United States participation in international  
8 environmental climate change mitigation efforts and  
9 technology deployment.

10 **SEC. 103. RESEARCH GRANTS.**

11 Section 105 of the Global Change Research Act of  
12 1990 (15 U.S.C. 2935) is amended—

13 (1) by redesignating subsection (c) as sub-  
14 section (d); and

15 (2) by inserting after subsection (b) the fol-  
16 lowing:

17 “(c) RESEARCH GRANTS.—

18 “(1) COMMITTEE TO DEVELOP LIST OF PRI-  
19 ORITY RESEARCH AREAS.—The Committee shall de-  
20 velop a list of priority areas for research and devel-  
21 opment on climate change that are not being ad-  
22 dressed by Federal agencies.

23 “(2) DIRECTOR OF OSTP TO TRANSMIT LIST TO  
24 NSF.—The Director of the Office of Science and

1 Technology Policy shall transmit the list to the Na-  
2 tional Science Foundation.

3 “(3) FUNDING THROUGH NSF.—

4 “(A) BUDGET REQUEST.—The National  
5 Science Foundation shall include, as part of the  
6 annual request for appropriations for the  
7 Science and Technology Policy Institute, a re-  
8 quest for appropriations to fund research in the  
9 priority areas on the list developed under para-  
10 graph (1).

11 “(B) AUTHORIZATION.—For fiscal year  
12 2005 and each fiscal year thereafter, there are  
13 authorized to be appropriated to the National  
14 Science Foundation not less than \$25,000,000,  
15 to be made available through the Science and  
16 Technology Policy Institute, for research in  
17 those priority areas.”.

18 **SEC. 104. ABRUPT CLIMATE CHANGE RESEARCH.**

19 (a) IN GENERAL.—The Secretary, through the Na-  
20 tional Oceanic and Atmospheric Administration, shall  
21 carry out a program of scientific research on potential ab-  
22 rupt climate change designed—

23 (1) to develop a global array of terrestrial and  
24 oceanographic indicators of paleoclimate in order

1 sufficiently to identify and describe past instances of  
2 abrupt climate change;

3 (2) to improve understanding of thresholds and  
4 nonlinearities in geophysical systems related to the  
5 mechanisms of abrupt climate change;

6 (3) to incorporate these mechanisms into ad-  
7 vanced geophysical models of climate change; and

8 (4) to test the output of these models against  
9 an improved global array of records of past abrupt  
10 climate changes.

11 (b) ABRUPT CLIMATE CHANGE DEFINED.—In this  
12 section, the term “abrupt climate change” means a change  
13 in climate that occurs so rapidly or unexpectedly that  
14 human or natural systems may have difficulty adapting  
15 to it.

16 (c) AUTHORIZATION OF APPROPRIATIONS.—There  
17 are authorized to be appropriated to the Secretary for fis-  
18 cal year 2005 \$60,000,000 to carry out this section, such  
19 sum to remain available until expended.

20 **SEC. 105. IMPACT ON LOW-INCOME POPULATIONS RE-**  
21 **SEARCH.**

22 (a) IN GENERAL.—The Secretary shall conduct re-  
23 search on the impact of climate change on low-income pop-  
24 ulations everywhere in the world. The research shall—

1           (1) include an assessment of the adverse impact  
2           of climate change on developing countries and on  
3           low-income populations in the United States;

4           (2) identify appropriate climate change adapta-  
5           tion measures and programs for developing countries  
6           and low-income populations and assess the impact of  
7           those measures and programs on low-income popu-  
8           lations;

9           (3) identify appropriate climate change mitiga-  
10          tion strategies and programs for developing coun-  
11          tries and low-income populations and assess the im-  
12          pact of those strategies and programs on developing  
13          countries and on low-income populations in the  
14          United States; and

15          (4) include an estimate of the costs of devel-  
16          oping and implementing those climate change adap-  
17          tation and mitigation programs.

18          (b) REPORT.—Within 1 year after the date of enact-  
19          ment of this Act, the Secretary shall transmit a report  
20          on the research conducted under subsection (a) to the Sen-  
21          ate Committee on Commerce, Science, and Transpor-  
22          tation, the Senate Committee on Environment and Public  
23          Works, the House of Representatives Committee on  
24          Science, and the House of Representatives Committee on  
25          Energy and Commerce.

1 (c) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated to the Secretary  
3 \$2,000,000 to carry out the research required by sub-  
4 section (a).

5 **SEC. 106. NIST GREENHOUSE GAS FUNCTIONS.**

6 Section 2(c) of the National Institute of Standards  
7 and Technology Act (15 U.S.C. 272(c)) is amended—

8 (1) by striking “and” after the semicolon in  
9 paragraph (21);

10 (2) by redesignating paragraph (22) as para-  
11 graph (23); and

12 (3) by inserting after paragraph (21) the fol-  
13 lowing:

14 “(22) perform research to develop enhanced  
15 measurements, calibrations, standards, and tech-  
16 nologies which will facilitate activities that reduce  
17 emissions of greenhouse gases or increase sequestra-  
18 tion of greenhouse gases, including carbon dioxide,  
19 methane, nitrous oxide, ozone, perfluorocarbons,  
20 hydrofluorocarbons, and sulfur hexafluoride; and”.

21 **SEC. 107. DEVELOPMENT OF NEW MEASUREMENT TECH-**  
22 **NOLOGIES.**

23 To facilitate implementation of section 204, the Sec-  
24 retary shall initiate a program to develop, with technical  
25 assistance from appropriate Federal agencies, innovative

1 standards and measurement technologies to calculate  
2 greenhouse gas emissions or reductions for which no accu-  
3 rate or reliable measurement technology exists. The pro-  
4 gram shall include—

5 (1) technologies (including remote sensing tech-  
6 nologies) to measure carbon changes and other  
7 greenhouse gas emissions and reductions from agri-  
8 culture, forestry, and other land use practices; and

9 (2) technologies to calculate non-carbon dioxide  
10 greenhouse gas emissions from transportation.

11 **SEC. 108. ENHANCED ENVIRONMENTAL MEASUREMENTS**  
12 **AND STANDARDS.**

13 The National Institute of Standards and Technology  
14 Act (15 U.S.C. 271 et seq.) is amended—

15 (1) by redesignating sections 17 through 32 as  
16 sections 18 through 33, respectively; and

17 (2) by inserting after section 16 the following:

18 **“SEC. 17. CLIMATE CHANGE STANDARDS AND PROCESSES.**

19 “(a) IN GENERAL.—The Director shall establish  
20 within the Institute a program to perform and support re-  
21 search on global climate change standards and processes,  
22 with the goal of providing scientific and technical knowl-  
23 edge applicable to the reduction of greenhouse gases (as  
24 defined in section 3(8) of the Climate Stewardship and

1 Innovation Act of 2005) and of facilitating implementation  
2 of section 204 of that Act.

3 “(b) RESEARCH PROGRAM.—

4 “(1) IN GENERAL.—The Director is authorized  
5 to conduct, directly or through contracts or grants,  
6 a global climate change standards and processes re-  
7 search program.

8 “(2) RESEARCH PROJECTS.—The specific con-  
9 tents and priorities of the research program shall be  
10 determined in consultation with appropriate Federal  
11 agencies, including the Environmental Protection  
12 Agency, the National Oceanic and Atmospheric Ad-  
13 ministration, and the National Aeronautics and  
14 Space Administration. The program generally shall  
15 include basic and applied research—

16 “(A) to develop and provide the enhanced  
17 measurements, calibrations, data, models, and  
18 reference material standards which will enable  
19 the monitoring of greenhouse gases;

20 “(B) to assist in establishing a baseline  
21 reference point for future trading in greenhouse  
22 gases and the measurement of progress in emis-  
23 sions reduction;

24 “(C) that will be exchanged internationally  
25 as scientific or technical information which has

1 the stated purpose of developing mutually rec-  
2 ognized measurements, standards, and proce-  
3 dures for reducing greenhouse gases; and

4 “(D) to assist in developing improved in-  
5 dustrial processes designed to reduce or elimi-  
6 nate greenhouse gases.

7 “(c) NATIONAL MEASUREMENT LABORATORIES.—

8 “(1) IN GENERAL.—In carrying out this sec-  
9 tion, the Director shall utilize the collective skills of  
10 the National Measurement Laboratories of the Na-  
11 tional Institute of Standards and Technology to im-  
12 prove the accuracy of measurements that will permit  
13 better understanding and control of these industrial  
14 chemical processes and result in the reduction or  
15 elimination of greenhouse gases.

16 “(2) MATERIAL, PROCESS, AND BUILDING RE-  
17 SEARCH.—The National Measurement Laboratories  
18 shall conduct research under this subsection that in-  
19 cludes—

20 “(A) developing material and manufac-  
21 turing processes which are designed for energy  
22 efficiency and reduced greenhouse gas emissions  
23 into the environment;

24 “(B) developing chemical processes to be  
25 used by industry that, compared to similar

1 processes in commercial use, result in reduced  
2 emissions of greenhouse gases or increased se-  
3 questration of greenhouse gases; and

4 “(C) enhancing building performance with  
5 a focus in developing standards or tools which  
6 will help incorporate low- or no-emission tech-  
7 nologies into building designs.

8 “(3) STANDARDS AND TOOLS.—The National  
9 Measurement Laboratories shall develop standards  
10 and tools under this subsection that include software  
11 to assist designers in selecting alternate building  
12 materials, performance data on materials, artificial  
13 intelligence-aided design procedures for building sub-  
14 systems and ‘smart buildings’, and improved test  
15 methods and rating procedures for evaluating the  
16 energy performance of residential and commercial  
17 appliances and products.

18 “(d) NATIONAL VOLUNTARY LABORATORY ACCREDI-  
19 TATION PROGRAM.—The Director shall utilize the Na-  
20 tional Voluntary Laboratory Accreditation Program under  
21 this section to establish a program to include specific cali-  
22 bration or test standards and related methods and proto-  
23 cols assembled to satisfy the unique needs for accredita-  
24 tion in measuring the production of greenhouse gases. In  
25 carrying out this subsection the Director may cooperate

1 with other departments and agencies of the Federal Gov-  
2 ernment, State and local governments, and private organi-  
3 zations.”.

4 **SEC. 109. TECHNOLOGY DEVELOPMENT AND DIFFUSION.**

5 The Director of the National Institute of Standards  
6 and Technology, through the Manufacturing Extension  
7 Partnership Program, may develop a program to promote  
8 the use, by the more than 380,000 small manufacturers,  
9 of technologies and techniques that result in reduced emis-  
10 sions of greenhouse gases or increased sequestration of  
11 greenhouse gases.

12 **SEC. 110. AGRICULTURAL OUTREACH PROGRAM.**

13 (a) IN GENERAL.—The Secretary of Agriculture, act-  
14 ing through the Global Change Program Office and in  
15 consultation with the heads of other appropriate depart-  
16 ments and agencies, shall establish the Climate Change  
17 Education and Outreach Initiative Program to educate,  
18 and reach out to, agricultural organizations and individual  
19 farmers on global climate change.

20 (b) PROGRAM COMPONENTS.—The program—

21 (1) shall be designed to ensure that agricultural  
22 organizations and individual farmers receive detailed  
23 information about—

24 (A) the potential impact of climate change  
25 on their operations and well-being;

1 (B) market-driven economic opportunities  
2 that may come from storing carbon in soils and  
3 vegetation, including emerging private sector  
4 markets for carbon storage; and

5 (C) techniques for measuring, monitoring,  
6 verifying, and inventorying such carbon capture  
7 efforts;

8 (2) may incorporate existing efforts in any area  
9 of activity referenced in paragraph (1) or in related  
10 areas of activity;

11 (3) shall provide—

12 (A) outreach materials to interested par-  
13 ties;

14 (B) workshops; and

15 (C) technical assistance; and

16 (4) may include the creation and development  
17 of regional centers on climate change or coordination  
18 with existing centers (including such centers within  
19 NRCS and the Cooperative State Research Edu-  
20 cation and Extension Service).

1                   **TITLE II—NATIONAL**  
2                   **GREENHOUSE GAS DATABASE**

3   **SEC. 201. NATIONAL GREENHOUSE GAS DATABASE AND**  
4                   **REGISTRY ESTABLISHED.**

5           (a) ESTABLISHMENT.—As soon as practicable after  
6 the date of enactment of this Act, the Administrator, in  
7 coordination with the Secretary, the Secretary of Energy,  
8 the Secretary of Agriculture, and private sector and non-  
9 governmental organizations, shall establish, operate, and  
10 maintain a database, to be known as the “National Green-  
11 house Gas Database”, to collect, verify, and analyze infor-  
12 mation on greenhouse gas emissions by entities.

13           (b) NATIONAL GREENHOUSE GAS DATABASE COM-  
14 PONENTS.—The database shall consist of—

15                   (1) an inventory of greenhouse gas emissions;  
16                   and

17                   (2) a registry of greenhouse gas emission reduc-  
18 tions and increases in greenhouse gas sequestra-  
19 tions.

20           (c) COMPREHENSIVE SYSTEM.—

21                   (1) IN GENERAL.—Not later than 2 years after  
22 the date of enactment of this Act, the Administrator  
23 shall promulgate regulations to implement a com-  
24 prehensive system for greenhouse gas emissions re-  
25 porting, inventorying, and reductions registration.

1           (2) REQUIREMENTS.—The Administrator shall  
2           ensure, to the maximum extent practicable, that—

3                   (A) the comprehensive system described in  
4           paragraph (1) is designed to—

5                           (i) maximize completeness, trans-  
6                           parency, and accuracy of information re-  
7                           ported; and

8                           (ii) minimize costs incurred by entities  
9                           in measuring and reporting greenhouse gas  
10                          emissions; and

11                   (B) the regulations promulgated under  
12           paragraph (1) establish procedures and proto-  
13           cols necessary—

14                           (i) to prevent the double-counting of  
15                           greenhouse gas emissions or emission re-  
16                           ductions reported by more than 1 reporting  
17                           entity;

18                           (ii) to provide for corrections to errors  
19                           in data submitted to the database;

20                           (iii) to provide for adjustment to data  
21                           by reporting entities that have had a sig-  
22                           nificant organizational change (including  
23                           mergers, acquisitions, and divestiture), in  
24                           order to maintain comparability among  
25                           data in the database over time;

1 (iv) to provide for adjustments to re-  
2 flect new technologies or methods for  
3 measuring or calculating greenhouse gas  
4 emissions;

5 (v) to account for changes in registra-  
6 tion of ownership of emission reductions  
7 resulting from a voluntary private trans-  
8 action between reporting entities; and

9 (vi) to clarify the responsibility for re-  
10 porting in the case of any facility owned or  
11 controlled by more than 1 entity.

12 (3) SERIAL NUMBERS.—Through regulations  
13 promulgated under paragraph (1), the Administrator  
14 shall develop and implement a system that pro-  
15 vides—

16 (A) for the verification of submitted emis-  
17 sions reductions registered under section 204;

18 (B) for the provision of unique serial num-  
19 bers to identify the registered emission reduc-  
20 tions made by an entity relative to the baseline  
21 of the entity;

22 (C) for the tracking of the registered re-  
23 ductions associated with the serial numbers;  
24 and

1 (D) for such action as may be necessary to  
2 prevent counterfeiting of the registered reduc-  
3 tions.

4 **SEC. 202. INVENTORY OF GREENHOUSE GAS EMISSIONS**  
5 **FOR COVERED ENTITIES.**

6 (a) IN GENERAL.—Not later than July 1st of each  
7 calendar year after 2008, each covered entity shall submit  
8 to the Administrator a report that states, for the pre-  
9 ceding calendar year, the entity-wide greenhouse gas emis-  
10 sions (as reported at the facility level), including—

11 (1) the total quantity of direct greenhouse gas  
12 emissions from stationary sources, expressed in units  
13 of carbon dioxide equivalents, except those reported  
14 under paragraph (3);

15 (2) the amount of petroleum products sold or  
16 imported by the entity and the amount of green-  
17 house gases, expressed in units of carbon dioxide  
18 equivalents, that would be emitted when these prod-  
19 ucts are used for transportation in the United  
20 States, as determined by the Administrator under  
21 section 301(b);

22 (3) the amount of hydrofluorocarbons,  
23 perfluorocarbons, or sulfur hexafluoride, expressed  
24 in units of carbon dioxide equivalents, that are sold  
25 or imported by the entity and will ultimately be

1 emitted in the United States, as determined by the  
2 Administrator under section 301(d); and

3 (4) such other categories of emissions as the  
4 Administrator determines in the regulations promul-  
5 gated under section 201(c)(1) may be practicable  
6 and useful for the purposes of this Act, such as—

7 (A) indirect emissions from imported elec-  
8 tricity, heat, and steam;

9 (B) process and fugitive emissions; and

10 (C) production or importation of green-  
11 house gases.

12 (b) COLLECTION AND ANALYSIS OF DATA.—The Ad-  
13 ministrator shall collect and analyze information reported  
14 under subsection (a) for use under title III.

15 **SEC. 203. GREENHOUSE GAS REDUCTION REPORTING.**

16 (a) IN GENERAL.—Subject to the requirements de-  
17 scribed in subsection (b)—

18 (1) a covered entity may register greenhouse  
19 gas emission reductions achieved after 1990 and be-  
20 fore 2010 under this section; and

21 (2) an entity that is not a covered entity may  
22 register greenhouse gas emission reductions achieved  
23 at any time since 1990 under this section.

24 (b) REQUIREMENTS.—

1           (1) IN GENERAL.—The requirements referred  
2 to in subsection (a) are that an entity (other than  
3 an entity described in paragraph (2)) shall—

4           (A) establish a baseline; and

5           (B) submit the report described in sub-  
6 section (c)(1).

7           (2) REQUIREMENTS APPLICABLE TO ENTITIES  
8 ENTERING INTO CERTAIN AGREEMENTS.—An entity  
9 that enters into an agreement with a participant in  
10 the registry for the purpose of a carbon sequestra-  
11 tion project shall not be required to comply with the  
12 requirements specified in paragraph (1) unless that  
13 entity is required to comply with the requirements  
14 by reason of an activity other than the agreement.

15          (c) REPORTS.—

16           (1) REQUIRED REPORT.—Not later than July  
17 1st of the each calendar year beginning more than  
18 2 years after the date of enactment of this Act, but  
19 subject to paragraph (3), an entity described in sub-  
20 section (a) shall submit to the Administrator a re-  
21 port that states, for the preceding calendar year, the  
22 entity-wide greenhouse gas emissions (as reported at  
23 the facility level), including—

1 (A) the total quantity of direct greenhouse  
2 gas emissions from stationary sources, ex-  
3 pressed in units of carbon dioxide equivalents;

4 (B) the amount of petroleum products sold  
5 or imported by the entity and the amount of  
6 greenhouse gases, expressed in units of carbon  
7 dioxide equivalents, that would be emitted when  
8 these products are used for transportation in  
9 the United States, as determined by the Admin-  
10 istrator under section 301(b);

11 (C) the amount of hydrofluorocarbons,  
12 perfluorocarbons, or sulfur hexafluoride, ex-  
13 pressed in units of carbon dioxide equivalents,  
14 that are sold or imported by the entity and will  
15 ultimately be emitted in the United States, as  
16 determined by the Administrator under section  
17 301(d); and

18 (D) such other categories of emissions as  
19 the Administrator determines in the regulations  
20 promulgated under section 201(e)(1) may be  
21 practicable and useful for the purposes of this  
22 Act, such as—

23 (i) indirect emissions from imported  
24 electricity, heat, and steam;

- 1 (ii) process and fugitive emissions;  
2 and  
3 (iii) production or importation of  
4 greenhouse gases.

5 (2) VOLUNTARY REPORTING.—An entity de-  
6 scribed in subsection (a) may (along with estab-  
7 lishing a baseline and reporting emissions under this  
8 section)—

9 (A) submit a report described in paragraph  
10 (1) before the date specified in that paragraph  
11 for the purposes of achieving and  
12 commoditizing greenhouse gas reductions  
13 through use of the registry and for other pur-  
14 poses; and

15 (B) submit to the Administrator, for inclu-  
16 sion in the registry, information that has been  
17 verified in accordance with regulations promul-  
18 gated under section 201(c)(1) and that relates  
19 to—

20 (i) any activity that resulted in the  
21 net reduction of the greenhouse gas emis-  
22 sions of the entity or a net increase in se-  
23 questration by the entity that were carried  
24 out during or after 1990 and before the es-  
25 tablishment of the database, verified in ac-

1 cordance with regulations promulgated  
2 under section 201(c)(1), and submitted to  
3 the Administrator before the date that is 4  
4 years after the date of enactment of this  
5 Act; and

6 (ii) with respect to the calendar year  
7 preceding the calendar year in which the  
8 information is submitted, any project or  
9 activity that resulted in the net reduction  
10 of the greenhouse gas emissions of the en-  
11 tity or a net increase in net sequestration  
12 by the entity.

13 (3) PROVISION OF VERIFICATION INFORMATION  
14 BY REPORTING ENTITIES.—Each entity that submits  
15 a report under this subsection shall provide informa-  
16 tion sufficient for the Administrator to verify, in ac-  
17 cordance with measurement and verification methods  
18 and standards developed under section 204, that the  
19 greenhouse gas report of the reporting entity—

20 (A) has been accurately reported; and

21 (B) in the case of each voluntary report  
22 under paragraph (2), represents—

23 (i) actual reductions in direct green-  
24 house gas emissions—

- 1 (I) relative to historic emission  
2 levels of the entity; and  
3 (II) after accounting for any in-  
4 creases in indirect emissions described  
5 in paragraph (1)(C)(i); or  
6 (ii) actual increases in net sequestra-  
7 tion.

8 (4) FAILURE TO SUBMIT REPORT.—An entity  
9 that participates or has participated in the registry  
10 and that fails to submit a report required under this  
11 subsection shall be prohibited from using, or allow-  
12 ing another entity to use, its registered emissions re-  
13 ductions or increases in sequestration to satisfy the  
14 requirements of section 301.

15 (5) INDEPENDENT THIRD-PARTY  
16 VERIFICATION.—To meet the requirements of this  
17 section and section 203, an entity that is required  
18 to submit a report under this section may—

19 (A) obtain independent third-party  
20 verification; and

21 (B) present the results of the third-party  
22 verification to the Administrator.

23 (6) AVAILABILITY OF DATA.—

1           (A) IN GENERAL.—The Administrator  
2 shall ensure that information in the database  
3 is—

- 4                   (i) published; and  
5                   (ii) accessible to the public, including  
6 in electronic format on the Internet.

7           (B) EXCEPTION.—Subparagraph (A) shall  
8 not apply in any case in which the Adminis-  
9 trator determines that publishing or otherwise  
10 making available information described in that  
11 subparagraph poses a risk to national security  
12 or discloses confidential business information  
13 that can not be derived from information that  
14 is otherwise publicly available and that would  
15 cause competitive harm if published.

16           (7) DATA INFRASTRUCTURE.—The Adminis-  
17 trator shall ensure, to the maximum extent prac-  
18 ticable, that the database uses, and is integrated  
19 with, Federal, State, and regional greenhouse gas  
20 data collection and reporting systems in effect as of  
21 the date of enactment of this Act.

22           (8) ADDITIONAL ISSUES TO BE CONSIDERED.—  
23 In promulgating the regulations under section  
24 201(c)(1) and implementing the database, the Ad-  
25 ministrator shall take into consideration a broad

1 range of issues involved in establishing an effective  
2 database, including—

3 (A) the data and information systems and  
4 measures necessary to identify, track, and  
5 verify greenhouse gas emissions in a manner  
6 that will encourage private sector trading and  
7 exchanges;

8 (B) the greenhouse gas reduction and se-  
9 questration measurement and estimation meth-  
10 ods and standards applied in other countries, as  
11 applicable or relevant;

12 (C) the extent to which available fossil  
13 fuels, greenhouse gas emissions, and greenhouse  
14 gas production and importation data are ade-  
15 quate to implement the database; and

16 (D) the differences in, and potential  
17 uniqueness of, the facilities, operations, and  
18 business and other relevant practices of persons  
19 and entities in the private and public sectors  
20 that may be expected to participate in the data-  
21 base.

22 (d) ANNUAL REPORT.—The Administrator shall pub-  
23 lish an annual report that—

1 (1) describes the total greenhouse gas emissions  
2 and emission reductions reported to the database  
3 during the year covered by the report;

4 (2) provides entity-by-entity and sector-by-sec-  
5 tor analyses of the emissions and emission reduc-  
6 tions reported;

7 (3) describes the atmospheric concentrations of  
8 greenhouse gases;

9 (4) provides a comparison of current and past  
10 atmospheric concentrations of greenhouse gases; and

11 (5) describes the activity during the year cov-  
12 ered by the period in the trading of greenhouse gas  
13 emission allowances.

14 **SEC. 204. MEASUREMENT AND VERIFICATION.**

15 (a) STANDARDS.—

16 (1) IN GENERAL.—Not later than 1 year after  
17 the date of enactment of this Act, the Secretary  
18 shall establish by rule, in coordination with the Ad-  
19 ministrator, the Secretary of Energy, and the Sec-  
20 retary of Agriculture, comprehensive measurement  
21 and verification methods and standards to ensure a  
22 consistent and technically accurate record of green-  
23 house gas emissions, emission reductions, sequestra-  
24 tion, and atmospheric concentrations for use in the  
25 registry.

1           (2) REQUIREMENTS.—The methods and stand-  
2           ards established under paragraph (1) shall include—

3                   (A) a requirement that a covered entity  
4                   use a continuous emissions monitoring system,  
5                   or another system of measuring or estimating  
6                   emissions that is determined by the Secretary  
7                   to provide information with precision, reli-  
8                   ability, accessibility, and timeliness similar to  
9                   that provided by a continuous emissions moni-  
10                  toring system where technologically feasible;

11                  (B) establishment of standardized meas-  
12                  urement and verification practices for reports  
13                  made by all entities participating in the reg-  
14                  istry, taking into account—

15                          (i) protocols and standards in use by  
16                          entities requiring or desiring to participate  
17                          in the registry as of the date of develop-  
18                          ment of the methods and standards under  
19                          paragraph (1);

20                          (ii) boundary issues, such as leakage;

21                          (iii) avoidance of double counting of  
22                          greenhouse gas emissions and emission re-  
23                          ductions;

24                          (iv) protocols to prevent a covered en-  
25                          tity from avoiding the requirements of this

1 Act by reorganization into multiple entities  
2 that are under common control; and

3 (v) such other factors as the Sec-  
4 retary, in consultation with the Adminis-  
5 trator, determines to be appropriate;

6 (C) establishment of methods of—

7 (i) estimating greenhouse gas emis-  
8 sions, for those cases in which the Sec-  
9 retary determines that methods of moni-  
10 toring, measuring or estimating such emis-  
11 sions with precision, reliability, accessi-  
12 bility, and timeliness similar to that pro-  
13 vided by a continuous emissions monitoring  
14 system are not technologically feasible at  
15 present; and

16 (ii) reporting the accuracy of such es-  
17 timations;

18 (D) establishment of measurement and  
19 verification standards applicable to actions  
20 taken to reduce, avoid, or sequester greenhouse  
21 gas emissions;

22 (E) in coordination with the Secretary of  
23 Agriculture, standards to measure the results of  
24 the use of carbon sequestration and carbon re-  
25 capture technologies, including—

1 (i) soil carbon sequestration practices;

2 and

3 (ii) forest preservation and reforest-  
4 ation activities that adequately address the  
5 issues of permanence, leakage, and  
6 verification;

7 (E) establishment of such other measure-  
8 ment and verification standards as the Sec-  
9 retary, in consultation with the Secretary of Ag-  
10 riculture, the Administrator, and the Secretary  
11 of Energy, determines to be appropriate;

12 (F) establishment of standards for obtain-  
13 ing the Secretary's approval of the suitability of  
14 geological storage sites that include evaluation  
15 of both the geology of the site and the entity's  
16 capacity to manage the site; and

17 (G) establishment of other features that,  
18 as determined by the Secretary, will allow enti-  
19 ties to adequately establish a fair and reliable  
20 measurement and reporting system.

21 (b) REVIEW AND REVISION.—The Secretary shall pe-  
22 riodically review, and revise as necessary, the methods and  
23 standards developed under subsection (a).

24 (c) PUBLIC PARTICIPATION.—The Secretary shall—

1           (1) make available to the public for comment,  
2           in draft form and for a period of at least 90 days,  
3           the methods and standards developed under sub-  
4           section (a); and

5           (2) after the 90-day period referred to in para-  
6           graph (1), in coordination with the Secretary of En-  
7           ergy, the Secretary of Agriculture, and the Adminis-  
8           trator, adopt the methods and standards developed  
9           under subsection (a) for use in implementing the  
10          database.

11          (d) EXPERTS AND CONSULTANTS.—

12           (1) IN GENERAL.—The Secretary may obtain  
13           the services of experts and consultants in the private  
14           and nonprofit sectors in accordance with section  
15           3109 of title 5, United States Code, in the areas of  
16           greenhouse gas measurement, certification, and  
17           emission trading.

18           (2) AVAILABLE ARRANGEMENTS.—In obtaining  
19           any service described in paragraph (1), the Sec-  
20           retary may use any available grant, contract, cooper-  
21           ative agreement, or other arrangement authorized by  
22           law.

1       **TITLE III—MARKET-DRIVEN**  
2       **GREENHOUSE GAS REDUCTIONS**

3       SUBTITLE A—EMISSION REDUCTION REQUIREMENTS;  
4                   USE OF TRADEABLE ALLOWANCES

5       **SEC. 301. COVERED ENTITIES MUST SUBMIT ALLOWANCES**  
6                   **FOR EMISSIONS.**

7       (a) IN GENERAL.—Beginning with calendar year  
8       2010—

9               (1) each covered entity in the electric genera-  
10              tion, industrial, and commercial sectors shall submit  
11              to the Administrator one tradeable allowance for  
12              every metric ton of greenhouse gases, measured in  
13              units of carbon dioxide equivalents, that it emits  
14              from stationary sources, except those described in  
15              paragraph (2);

16             (2) each producer or importer of  
17             hydrofluorocarbons, perfluorocarbons, or sulfur  
18             hexafluoride that is a covered entity shall submit to  
19             the Administrator one tradeable allowance for every  
20             metric ton of hydrofluorocarbons, perfluorocarbons,  
21             or sulfur hexafluoride, measured in units of carbon  
22             dioxide equivalents; that it produces or imports and  
23             that will ultimately be emitted in the United States,  
24             as determined by the Administrator under sub-  
25             section (d) and

1           (3) each petroleum refiner or importer that is  
2           a covered entity shall submit one tradeable allowance  
3           for every unit of petroleum product it sells that will  
4           produce one metric ton of greenhouse gases, meas-  
5           ured in units of carbon dioxide equivalents, as deter-  
6           mined by the Administrator under subsection (b),  
7           when used for transportation.

8           (b) DETERMINATION OF TRANSPORTATION SECTOR  
9           AMOUNT.—For the transportation sector, the Adminis-  
10          trator shall determine the amount of greenhouse gases,  
11          measured in units of carbon dioxide equivalents, that will  
12          be emitted when petroleum products are used for trans-  
13          portation.

14          (c) EXCEPTION FOR CERTAIN DEPOSITED EMIS-  
15          SIONS.—Notwithstanding subsection (a), a covered entity  
16          is not required to submit a tradeable allowance for any  
17          amount of greenhouse gas that would otherwise have been  
18          emitted from a facility under the ownership or control of  
19          that entity if—

20                 (1) the emission is deposited in a geological  
21                 storage facility approved by the Administrator under  
22                 section 204(a)(2)(F); and

23                 (2) the entity agrees to submit tradeable allow-  
24                 ances for any portion of the deposited emission that  
25                 is subsequently emitted from that facility.

1 (d) DETERMINATION OF HYDROFLUOROCARBON,  
2 PERFLUOROCARBON, AND SULFUR HEXAFLUORIDE  
3 AMOUNT.—The Administrator shall determine the  
4 amounts of hydrofluorocarbons, perfluorocarbons, or sul-  
5 fur hexafluoride, measured in units of carbon dioxide  
6 equivalents, that will be deemed to be emitted for purposes  
7 of this Act.

8 **SEC. 302. COMPLIANCE.**

9 (a) IN GENERAL.—

10 (1) SOURCE OF TRADEABLE ALLOWANCES  
11 USED.—A covered entity may use a tradeable allow-  
12 ance to meet the requirements of this section with-  
13 out regard to whether the tradeable allowance was  
14 allocated to it under subtitle B or acquired from an-  
15 other entity or the Climate Change Credit Corpora-  
16 tion established under section 351.

17 (2) VERIFICATION BY ADMINISTRATOR.—At  
18 various times during each year, the Administrator  
19 shall determine whether each covered entity has met  
20 the requirements of this section. In making that de-  
21 termination, the Administrator shall—

22 (A) take into account the tradeable allow-  
23 ances submitted by the covered entity to the  
24 Administrator; and

1 (B) retire the serial number assigned to  
2 each such tradeable allowance.

3 (b) ALTERNATIVE MEANS OF COMPLIANCE.—For the  
4 years 2010 and after, a covered entity may satisfy up to  
5 15 percent of its total allowance submission requirement  
6 under this section by—

7 (1) submitting tradeable allowances from an-  
8 other nation’s market in greenhouse gas emissions  
9 if—

10 (A) the Secretary determines that the  
11 other nation’s system for trading in greenhouse  
12 gas emissions is complete, accurate, and trans-  
13 parent and reviews that determination at least  
14 once every 5 years;

15 (B) the other nation has adopted enforce-  
16 able limits on its greenhouse gas emissions  
17 which the tradeable allowances were issued to  
18 implement; and

19 (C) the covered entity certifies that the  
20 tradeable allowance has been retired unused in  
21 the other nation’s market;

22 (2) submitting a registered net increase in se-  
23 questration, as registered in the database, adjusted,  
24 if necessary, to comply with the accounting stand-  
25 ards and methods established under section 372;

1           (3) submitting a greenhouse gas emissions re-  
2           duction (other than a registered net increase in se-  
3           questration) that was registered in the database by  
4           a person that is not a covered entity; or

5           (4) submitting credits obtained from the Ad-  
6           ministrator under section 303.

7           (c) DEDICATED PROGRAM FOR SEQUESTRATION IN  
8           AGRICULTURAL SOILS.—If a covered entity chooses to  
9           satisfy 15 percent of its total allowance submission re-  
10          quirements under the provisions of subsection (b), it shall  
11          satisfy at least 01.5 percent of its total allowance submis-  
12          sion requirement by submitting registered net increases in  
13          sequestration in agricultural soils, as registered in the  
14          database, adjusted, if necessary, to comply with the ac-  
15          counting standards and methods established under section  
16          371.

17          **SEC. 303. BORROWING AGAINST FUTURE REDUCTIONS.**

18          (a) IN GENERAL.—The Administrator shall establish  
19          a program under which a covered entity may—

20                 (1) receive a credit in the current calendar year  
21                 for anticipated reductions in emissions in a future  
22                 calendar year; and

23                 (2) use the credit in lieu of a tradeable allow-  
24                 ance to meet the requirements of this Act for the

1 current calendar year, subject to the limitation im-  
2 posed by section 302(b).

3 (b) DETERMINATION OF TRADEABLE ALLOWANCE

4 CREDITS.—The Administrator may make credits available  
5 under subsection (a) only for anticipated reductions in  
6 emissions that—

7 (1) are attributable to the realization of capital  
8 investments in equipment, the construction, recon-  
9 struction, or acquisition of facilities, or the deploy-  
10 ment of new technologies—

11 (A) for which the covered entity has exe-  
12 cuted a binding contract and secured, or ap-  
13 plied for, all necessary permits and operating or  
14 implementation authority;

15 (B) that will not become operational within  
16 the current calendar year; and

17 (C) that will become operational and begin  
18 to reduce emissions from the covered entity  
19 within 5 years after the year in which the credit  
20 is used; and

21 (2) will be realized within 5 years after the year  
22 in which the credit is used.

23 (c) CARRYING COST.—If a covered entity uses a cred-  
24 it under this section to meet the requirements of this Act  
25 for a calendar year (referred to as the use year), the

1 tradeable allowance requirement for the year from which  
2 the credit was taken (referred to as the source year) shall  
3 be increased by an amount equal to—

4 (1) 10 percent for each credit borrowed from  
5 the source year; multiplied by

6 (2) the number of years beginning after the use  
7 year and before the source year.

8 (d) MAXIMUM BORROWING PERIOD.—A credit from  
9 a year beginning more than 5 years after the current year  
10 may not be used to meet the requirements of this Act for  
11 the current year.

12 (e) FAILURE TO ACHIEVE REDUCTIONS GENERATING  
13 CREDIT.—If a covered entity that uses a credit under this  
14 section fails to achieve the anticipated reduction for which  
15 the credit was granted for the year from which the credit  
16 was taken, then—

17 (1) the covered entity's requirements under this  
18 Act for that year shall be increased by the amount  
19 of the credit, plus the amount determined under  
20 subsection (c);

21 (2) any tradeable allowances submitted by the  
22 covered entity for that year shall be counted first  
23 against the increase in those requirements; and

1           (3) the covered entity may not use credits  
2           under this section to meet the increased require-  
3           ments.

4 **SEC. 304. OTHER USES OF TRADEABLE ALLOWANCES.**

5           (a) IN GENERAL.—Tradeable allowances may be sold,  
6           exchanged, purchased, retired, or used as provided in this  
7           section.

8           (b) INTERSECTOR TRADING.—Covered entities may  
9           purchase or otherwise acquire tradeable allowances from  
10          other covered sectors to satisfy the requirements of section  
11          301.

12          (c) CLIMATE CHANGE CREDIT ORGANIZATION.—The  
13          Climate Change Credit Corporation established under sec-  
14          tion 351 may sell tradeable allowances allocated to it  
15          under section 332(a)(2) to any covered entity or to any  
16          investor, broker, or dealer in such tradeable allowances.  
17          The Climate Change Credit Corporation shall use all pro-  
18          ceeds from such sales in accordance with the provisions  
19          of section 352.

20          (d) BANKING OF TRADEABLE ALLOWANCES.—Not-  
21          withstanding the requirements of section 301, a covered  
22          entity that has more than a sufficient amount of tradeable  
23          allowances to satisfy the requirements of section 301, may  
24          refrain from submitting a tradeable allowance to satisfy

1 the requirements in order to sell, exchange, or use the  
2 tradeable allowance in the future.

3 **SEC. 305. EXEMPTION OF SOURCE CATEGORIES.**

4 (a) IN GENERAL.—The Administrator may grant an  
5 exemption from the requirements of this Act to a source  
6 category if the Administrator determines, after public no-  
7 tice and comment, that it is not feasible to measure or  
8 estimate emissions from that source category, until such  
9 time as measurement or estimation becomes feasible.

10 (b) REDUCTION OF LIMITATIONS.—If the Adminis-  
11 trator exempts a source category under subsection (a), the  
12 Administrator shall also reduce the total tradeable allow-  
13 ances under section 331(a)(1) by the amount of green-  
14 house gas emissions that the exempted source category  
15 emitted in calendar year 2000, as identified in the 2000  
16 Inventory.

17 (c) LIMITATION ON EXEMPTION.—The Administrator  
18 may not grant an exemption under subsection (a) to car-  
19 bon dioxide produced from fossil fuel.

20 SUBTITLE B—ESTABLISHMENT AND ALLOCATION OF  
21 TRADEABLE ALLOWANCES

22 **SEC. 331. ESTABLISHMENT OF TRADEABLE ALLOWANCES.**

23 (a) IN GENERAL.—The Administrator shall promul-  
24 gate regulations to establish tradeable allowances, denomi-

1 nated in units of carbon dioxide equivalents, for calendar  
2 years beginning after 2009, equal to—

3 (1) 5896 million metric tons, measured in units  
4 of carbon dioxide equivalents, reduced by

5 (2) the amount of emissions of greenhouse  
6 gases in calendar year 2000 from non-covered enti-  
7 ties.

8 (b) SERIAL NUMBERS.—The Administrator shall as-  
9 sign a unique serial number to each tradeable allowance  
10 established under subsection (a), and shall take such ac-  
11 tion as may be necessary to prevent counterfeiting of  
12 tradeable allowances.

13 (c) NATURE OF TRADEABLE ALLOWANCES.—A  
14 tradeable allowance is not a property right, and nothing  
15 in this title or any other provision of law limits the author-  
16 ity of the United States to terminate or limit a tradeable  
17 allowance.

18 (d) NON-COVERED ENTITY.—

19 (1) IN GENERAL.—In this section the term  
20 “non-covered entity” means an entity that—

21 (A) owns or controls a source of green-  
22 house gas emissions in the electric power, in-  
23 dustrial, or commercial sectors of the United  
24 States economy (as defined in the Inventory),  
25 refines or imports petroleum products for use in

1 transportation, or produces or imports  
2 hydrofluorocarbons, perfluorocarbons, or sulfur  
3 hexafluoride; and

4 (B) is not a covered entity.

5 (2) EXCEPTION.—Notwithstanding paragraph  
6 (1), an entity that is a covered entity for any cal-  
7 endar year beginning after 2009 shall not be consid-  
8 ered to be a non-covered entity for purposes of sub-  
9 section (a) only because it emitted, or its products  
10 would have emitted, 10,000 metric tons or less of  
11 greenhouse gas, measured in units of carbon dioxide  
12 equivalents, in the year 2000.

13 **SEC. 332. DETERMINATION OF TRADEABLE ALLOWANCE**  
14 **ALLOCATIONS.**

15 (a) IN GENERAL.—The Secretary shall determine—

16 (1) the amount of tradeable allowances to be al-  
17 located to each covered sector of that sector's allot-  
18 ments; and

19 (2) the amount of tradeable allowances to be al-  
20 located to the Climate Change Credit Corporation  
21 established under section 351.

22 (b) ALLOCATION FACTORS.—In making the deter-  
23 mination required by subsection (a), the Secretary shall  
24 consider—

1           (1) the distributive effect of the allocations on  
2 household income and net worth of individuals;

3           (2) the impact of the allocations on corporate  
4 income, taxes, and asset value;

5           (3) the impact of the allocations on income lev-  
6 els of consumers and on their energy consumption;

7           (4) the effects of the allocations in terms of eco-  
8 nomic efficiency;

9           (5) the ability of covered entities to pass  
10 through compliance costs to their customers;

11           (6) the degree to which the amount of alloca-  
12 tions to the covered sectors should decrease over  
13 time; and

14           (7) the need to maintain the international com-  
15 petitiveness of United States manufacturing and  
16 avoid the additional loss of United States manufac-  
17 turing jobs.

18       (c) ALLOCATION RECOMMENDATIONS AND IMPLE-  
19 MENTATION.—Before allocating or providing tradeable al-  
20 lowances under subsection (a) and within 24 months after  
21 the date of enactment of this Act, the Secretary shall sub-  
22 mit the determinations under subsection (a) to the Senate  
23 Committee on Commerce, Science, and Transportation,  
24 the Senate Committee on Environment and Public Works,  
25 the House of Representatives Committee on Science, and

1 the House of Representatives Committee on Energy and  
2 Commerce. The Secretary's determinations under para-  
3 graph (1), including the allocations and provision of  
4 tradeable allowances pursuant to that determination, are  
5 deemed to be a major rule (as defined in section 804(2)  
6 of title 5, United States Code), and subject to the provi-  
7 sions of chapter 8 of that title.

8 **SEC. 333. ALLOCATION OF TRADEABLE ALLOWANCES.**

9 (a) IN GENERAL.—Beginning with calendar year  
10 2010 and after taking into account any initial allocations  
11 under section 335, the Administrator shall—

12 (1) allocate to each covered sector that sector's  
13 allotments determined by the Administrator under  
14 section 332 (adjusted for any such initial allocations  
15 and the allocation to the Climate Change Credit  
16 Corporation established under section 351); and

17 (2) allocate to the Climate Change Credit Cor-  
18 poration established under section 351 the tradeable  
19 allowances allocable to that Corporation.

20 (b) INTRASECTORIAL ALLOTMENTS.—The Adminis-  
21 trator shall, by regulation, establish a process for the allo-  
22 cation of tradeable allowances under this section, without  
23 cost to covered entities, that will—

1           (1) encourage investments that increase the ef-  
2           ficiency of the processes that produce greenhouse  
3           gas emissions;

4           (2) minimize the costs to the government of al-  
5           locating the tradeable allowances;

6           (3) not penalize a covered entity for emissions  
7           reductions made before 2010 and registered with the  
8           database; and

9           (4) provide sufficient allocation for new en-  
10          trants into the sector.

11          (c) POINT SOURCE ALLOCATION.—The Adminis-  
12          trator shall allocate the tradeable allowances for the elec-  
13          tricity generation, industrial, and commercial sectors to  
14          the entities owning or controlling the point sources of  
15          greenhouse gas emissions within that sector.

16          (d) HYDROFLUOROCARBONS, PERFLUOROCARBONS,  
17          AND SULFUR HEXAFLUORIDE.—The Administrator shall  
18          allocate the tradeable allowances for producers or import-  
19          ers of hydrofluorocarbons, perfluorocarbons, or sulfur  
20          hexafluoride to such producers or importers.

21          (e) SPECIAL RULE FOR ALLOCATION WITHIN THE  
22          TRANSPORTATION SECTOR.—The Administrator shall al-  
23          locate the tradeable allowances for the transportation sec-  
24          tor to petroleum refiners or importers that produce or im-

1 port petroleum products that will be used as fuel for trans-  
2 portation.

3 (f) ALLOCATIONS TO RURAL ELECTRIC COOPERA-  
4 TIVES.—For each electric generating unit that is owned  
5 or operated by a rural electric cooperative, the Adminis-  
6 trator shall allocate each year, at no cost, allowances in  
7 an amount equal to the greenhouse gas emissions of each  
8 such unit in 2000, plus an amount equal to the average  
9 emissions growth expected for all such units. The alloca-  
10 tions shall be offset from the allowances allocated to the  
11 Climate Change Credit Corporation.

12 (g) EARLY AUCTION FOR TECHNOLOGY DEPLOY-  
13 MENT AND DISSEMINATION.—

14 (1) IN GENERAL.—Within 1 year after the date  
15 of enactment of this Act, the Administrator, in con-  
16 sultation with the Secretary of Energy and the Sec-  
17 retary of Commerce, shall allocate tradeable allow-  
18 ances by the Climate Change Credit Corporation for  
19 auction before 2010. The Climate Change Credit  
20 Corporation shall use the proceeds of the auction,  
21 together with any funds received as reimbursements  
22 under subtitle C of title IV of this Act, to support  
23 the programs established by that subtitle until the  
24 secretary of Energy and the Corporation jointly de-  
25 termine that the purposes of those programs have

1       been accomplished. The Corporation shall also use  
2       the proceeds of the auction to support the programs  
3       established by subtitle D of title IV of this Act until  
4       2010.

5           (2) DETERMINATION OF ALLOCATION.—In de-  
6       termining the amount of tradeable allowances to be  
7       allocated to the Climate Change Credit Corporation  
8       under this subsection, the Administrator shall con-  
9       sider—

10           (A) the expected market value of tradeable  
11       allowances for auction;

12           (B) the annual funding required for the  
13       programs established by subtitle C of title IV;

14           (C) the repayment provisions of those pro-  
15       grams; and

16           (D) the allocation factors in section  
17       332(b).

18           (3) LIMITATION.—In allocating tradeable allow-  
19       ances under paragraph (1) the Administrator shall  
20       take into account the purposes of section 331 and  
21       the impact, if any, the allocation under paragraph  
22       (1) may have on achieving those purposes.

23       (h) ALLOCATION TO COVERED ENTITIES IN STATES  
24       ADOPTING MANDATORY GREENHOUSE GAS EMISSIONS  
25       REDUCTION PROGRAMS.—For a covered entity operating

1 in any State that has adopted a legally binding and en-  
2 forceable program to achieve and maintain reductions that  
3 are consistent with, or more stringent than, reductions  
4 mandated by this Act, and which requirements are effec-  
5 tive prior to 2010, the Administrator shall consider such  
6 binding state actions in making the final determination  
7 of allocation to such covered entities.

8 **SEC. 334. ENSURING TARGET ADEQUACY.**

9 (a) IN GENERAL.—Beginning 2 years after the date  
10 of enactment of this Act, the Under Secretary of Com-  
11 merce for Oceans and Atmosphere shall review the allow-  
12 ances established by section 331 no less frequently than  
13 biennially—

14 (1) to re-evaluate the levels established by that  
15 subsection, after taking into account the best avail-  
16 able science and the most currently available data,  
17 and

18 (2) to re-evaluate the environmental and public  
19 health impacts of specific concentration levels of  
20 greenhouse gases,

21 to determine whether the allowances established by sub-  
22 section (a) continue to be consistent with the objective of  
23 the United Nations' Framework Convention on Climate  
24 Change of stabilizing levels of greenhouse gas emissions

1 at a level that will prevent dangerous anthropogenic inter-  
2 ference with the climate system.

3 (b) REVIEW OF 2010 LEVELS.—The Under Secretary  
4 shall specifically review in 2008 the level established under  
5 section 331(a)(1), and transmit a report on his reviews,  
6 together with any recommendations, including legislative  
7 recommendations, for modification of the levels, to the  
8 Senate Committee on Commerce, Science, and Transpor-  
9 tation, the Senate Committee on Environment and Public  
10 Works, the House of Representatives Committee on  
11 Science, and the House of Representatives Committee on  
12 Energy and Commerce.

13 **SEC. 335. INITIAL ALLOCATIONS FOR EARLY PARTICIPA-**  
14 **TION AND ACCELERATED PARTICIPATION.**

15 (a) Before making any allocations under section 333,  
16 the Administrator shall allocate—

17 (1) to any covered entity an amount of  
18 tradeable allowances equivalent to the amount of  
19 greenhouse gas emissions reductions registered by  
20 that covered entity in the national greenhouse gas  
21 database if—

22 (A) the covered entity has requested to use  
23 the registered reduction in the year of alloca-  
24 tion;

1 (B) the reduction was registered prior to  
2 2010; and

3 (C) the Administrator retires the unique  
4 serial number assigned to the reduction under  
5 section 201(c)(3); and

6 (2) to any covered entity that has entered into  
7 an accelerated participation agreement under section  
8 336, such tradeable allowances as the Administrator  
9 has determined to be appropriate under that section.

10 (b) Any covered entity that is subject to a State man-  
11 datory greenhouse gas emissions reduction program that  
12 meets the requirements of subsection (h) of section 333  
13 shall be eligible for the allocation of allowances under this  
14 section and section 336 if the requirements of the State  
15 mandatory greenhouse gas emission reduction program  
16 are consistent with, or more stringent than, the emission  
17 targets established by this Act.

18 **SEC. 336. BONUS FOR ACCELERATED PARTICIPATION.**

19 (a) IN GENERAL.—If a covered entity executes an  
20 agreement with the Administrator under which it agrees  
21 to reduce its level of greenhouse gas emissions to a level  
22 no greater than the level of its greenhouse gas emissions  
23 for calendar year 1990 by the year 2010, then, for the  
24 6-year period beginning with calendar year 2010, the Ad-  
25 ministrator shall—

1           (1) provide additional tradeable allowances to  
2           that entity when allocating allowances under section  
3           334 in order to recognize the additional emissions  
4           reductions that will be required of the covered entity;

5           (2) allow that entity to satisfy 20 percent of its  
6           requirements under section 301 by—

7                   (A) submitting tradeable allowances from  
8                   another nation's market in greenhouse gas  
9                   emissions under the conditions described in sec-  
10                  tion 312(b)(1);

11                   (B) submitting a registered net increase in  
12                   sequestration, as registered in the National  
13                   Greenhouse Gas Database established under  
14                   section 201, and as adjusted by the appropriate  
15                   sequestration discount rate established under  
16                   section 371; or

17                   (C) submitting a greenhouse gas emission  
18                   reduction (other than a registered net increase  
19                   in sequestration) that was registered in the Na-  
20                   tional Greenhouse Gas Database by a person  
21                   that is not a covered entity.

22           (b) TERMINATION.—An entity that executes an  
23           agreement described in subsection (a) may terminate the  
24           agreement at any time.

1 (c) FAILURE TO MEET COMMITMENT.—If an entity  
2 that executes an agreement described in subsection (a)  
3 fails to achieve the level of emissions to which it committed  
4 by calendar year 2010—

5 (1) its requirements under section 301 shall be  
6 increased by the amount of any tradeable allowances  
7 provided to it under subsection (a)(1); and

8 (2) any tradeable allowances submitted there-  
9 after shall be counted first against the increase in  
10 those requirements.

11 SUBTITLE C—CLIMATE CHANGE CREDIT CORPORATION

12 **SEC. 351. ESTABLISHMENT.**

13 (a) IN GENERAL.—The Climate Change Credit Cor-  
14 poration is established as a nonprofit corporation without  
15 stock. The Corporation shall not be considered to be an  
16 agency or establishment of the United States Government.

17 (b) APPLICABLE LAWS.—The Corporation shall be  
18 subject to the provisions of this title and, to the extent  
19 consistent with this title, to the District of Columbia Busi-  
20 ness Corporation Act.

21 (c) BOARD OF DIRECTORS.—The Corporation shall  
22 have a board of directors of 5 individuals who are citizens  
23 of the United States, of whom 1 shall be elected annually  
24 by the board to serve as chairman. No more than 3 mem-  
25 bers of the board serving at any time may be affiliated

1 with the same political party. The members of the board  
2 shall be appointed by the President of the United States,  
3 by and with the advice and consent of the Senate and shall  
4 serve for terms of 5 years.

5 **SEC. 352. PURPOSES AND FUNCTIONS.**

6 (a) **TRADING.**—The Corporation—

7 (1) shall receive and manage tradeable allow-  
8 ances allocated to it under section 333(a)(2); and

9 (2) shall buy and sell tradeable allowances,  
10 whether allocated to it under that section or ob-  
11 tained by purchase, trade, or donation from other  
12 entities; but

13 (3) may not retire tradeable allowances unused.

14 (b) **USE OF TRADEABLE ALLOWANCES AND PRO-**  
15 **CEEDS.**—

16 (1) **IN GENERAL.**—The Corporation shall use  
17 the tradeable allowances, and proceeds derived from  
18 its trading activities in tradeable allowances, to re-  
19 duce costs borne by consumers as a result of the  
20 greenhouse gas reduction requirements of this Act.

21 The reductions—

22 (A) may be obtained by buy-down, subsidy,  
23 negotiation of discounts, consumer rebates, or  
24 otherwise;

1 (B) shall be, as nearly as possible, equi-  
2 tably distributed across all regions of the  
3 United States; and

4 (C) may include arrangements for pref-  
5 erential treatment to consumers who can least  
6 afford any such increased costs.

7 (2) TRANSITION ASSISTANCE TO DISLOCATED  
8 WORKERS AND COMMUNITIES.—The Corporation  
9 shall allocate a percentage of the proceeds derived  
10 from its trading activities in tradeable allowances to  
11 provide transition assistance to dislocated workers  
12 and communities. Transition assistance may take  
13 the form of—

14 (A) grants to employers, employer associa-  
15 tions, and representatives of employees—

16 (i) to provide training, adjustment as-  
17 sistance, and employment services to dis-  
18 located workers; and

19 (ii) to make income-maintenance and  
20 needs-related payments to dislocated work-  
21 ers; and

22 (B) grants to State and local governments  
23 to assist communities in attracting new employ-  
24 ers or providing essential local government serv-  
25 ices.

1           (3) PHASE-OUT OF TRANSITION ASSISTANCE.—

2           The percentage allocated by the Corporation under  
3           paragraph (2)—

4                   (A) shall be 20 percent for 2010;

5                   (B) shall be reduced by 2 percentage  
6           points each year thereafter; and

7                   (C) may not be reduced below zero.

8           (4) ADAPTATION AND MITIGATION ASSISTANCE  
9           FOR LOW-INCOME PERSONS AND COMMUNITIES.—

10          The Corporation shall allocate at least 10 percent of  
11          the proceeds derived from its trading activities to  
12          funding climate change adaptation and mitigation  
13          programs to assist low-income populations identified  
14          in the report submitted under section 106(b) as hav-  
15          ing particular needs in addressing the impact of cli-  
16          mate change.

17          (5) ADAPTATION ASSISTANCE FOR FISH AND  
18          WILDLIFE HABITAT.—The Corporation shall fund ef-  
19          forts to strengthen and restore habitat that improves  
20          the ability of fish and wildlife to adapt successfully  
21          to climate change. The Corporation shall deposit the  
22          proceeds from no less than 10 percent of the total  
23          allowances allocated to it in the wildlife restoration  
24          fund subaccount known as the Wildlife Conservation  
25          and Restoration Account established under section 3

1 of the Pittman-Robertson Wildlife Restoration Act  
2 (16 U.S.C. 669b). Amounts deposited in the sub-  
3 account under this paragraph shall be available  
4 without further appropriation for obligation and ex-  
5 penditure under that Act.

6 (6) TECHNOLOGY DEPLOYMENT PROGRAMS.—  
7 The Corporation shall establish and carry out a pro-  
8 gram, through direct grants, revolving loan pro-  
9 grams, or other financial measures, to provide sup-  
10 port for the deployment of technology to assist in  
11 compliance with this Act by distributing the pro-  
12 ceeds from no less than 50 percent of the total al-  
13 lowances allocated in support of the program estab-  
14 lished under section 491.

15 SUBTITLE D—SEQUESTRATION ACCOUNTING;

16 PENALTIES

17 **SEC. 371. SEQUESTRATION ACCOUNTING.**

18 (a) SEQUESTRATION ACCOUNTING.—If a covered en-  
19 tity uses a registered net increase in sequestration to sat-  
20 isfy the requirements of section 301 for any year, that  
21 covered entity shall submit information to the Adminis-  
22 trator every 5 years thereafter sufficient to allow the Ad-  
23 ministrator to determine, using the methods and stand-  
24 ards created under section 204, whether that net increase  
25 in sequestration still exists. Unless the Administrator de-

1 terminates that the net increase in sequestration continues  
2 to exist, the covered entity shall offset any loss of seques-  
3 tration by submitting additional tradeable allowances of  
4 equivalent amount in the calender year following that de-  
5 termination.

6 (b) REGULATIONS REQUIRED.—The Secretary, act-  
7 ing through the Under Secretary of Commerce for Science  
8 and Technology, in coordination with the Secretary of Ag-  
9 riculture, the Secretary of Energy, and the Administrator,  
10 shall issue regulations establishing the sequestration ac-  
11 counting rules for all classes of sequestration projects.

12 (c) CRITERIA FOR REGULATIONS.—In issuing regula-  
13 tions under this section, the Secretary shall use the fol-  
14 lowing criteria:

15 (1) If the range of possible amounts of net in-  
16 crease in sequestration for a particular class of se-  
17 questration project is not more than 10 percent of  
18 the median of that range, the amount of sequestra-  
19 tion awarded shall be equal to the median value of  
20 that range.

21 (2) If the range of possible amounts of net in-  
22 crease in sequestration for a particular class of se-  
23 questration project is more than 10 percent of the  
24 median of that range, the amount of sequestration

1 awarded shall be equal to the fifth percentile of that  
2 range.

3 (3) The regulations shall include procedures for  
4 accounting for potential leakage from sequestration  
5 projects and for ensuring that any registered in-  
6 crease in sequestration is in addition that which  
7 would have occurred if this Act had not been en-  
8 acted.

9 (d) UPDATES.—The Secretary shall update the se-  
10 questration accounting rules for every class of sequestra-  
11 tion project at least once every 5 years.

12 **SEC. 372. PENALTIES.**

13 Any covered entity that fails to meet the require-  
14 ments of section 301 for a year shall be liable for a civil  
15 penalty, payable to the Administrator, equal to thrice the  
16 market value (determined as of the last day of the year  
17 at issue) of the tradeable allowances that would be nec-  
18 essary for that covered entity to meet those requirements  
19 on the date of the emission that resulted in the violation.

20 **TITLE IV—INNOVATION AND**  
21 **COMPETITIVENESS**

22 **SEC. 401. FINDINGS.**

23 The Congress finds the following:

24 (1) Innovation, the process that ultimately pro-  
25 vides new and improved products, manufacturing

1 processes, and services, is the basis for technological  
2 progress. This technological advancement is a key  
3 element of sustained economic growth.

4 (2) The innovation economy is fundamentally  
5 different from the industrial or even the information  
6 economy. It requires a new vision and new ap-  
7 proaches.

8 (3) Changing innovation processes and the evo-  
9 lution of the relative contribution made by the pri-  
10 vate and public sectors have emphasized the need for  
11 strong industry-science linkages.

12 (4) Patent regimes play an increasingly complex  
13 role in encouraging innovation, disseminating sci-  
14 entific and technical knowledge, and enhancing mar-  
15 ket entry and firm creation.

16 (5) Increasing participation and maintaining  
17 quality standards in tertiary education in science  
18 and technology are imperative to meet growing de-  
19 mand for workers with scientific and technological  
20 knowledge and skills.

21 (6) Research, innovation, and human capital  
22 are our principal strengths. By sustaining United  
23 States investments in research and finding collabo-  
24 rative arrangements to leverage existing resources  
25 and funds in a scarce budget environment, we en-

1       sure that America remains at the forefront of sci-  
2       entific and technological capability.

3           (7) Technology transfer of publicly funded re-  
4       search is a critical mechanism for optimizing the re-  
5       turn on taxpayer investment, particularly where  
6       other benefits are not measurable at all or are very  
7       long-term.

8           (8) Identifying metrics to quantify program ef-  
9       fectiveness is of increasing importance because the  
10      entire innovation process is continuing to evolve in  
11      an arena of increasing global competition. Metrics  
12      need to take into account a wide range of steps in  
13      a highly complex process, as well as the ultimate  
14      product or service, but should not constrain the con-  
15      tinued evolution or development of new technology  
16      transfer approaches.

17          (9) The United States lacks a national innova-  
18      tion strategy and agenda, including an aggressive  
19      public policy strategy that energizes the environment  
20      for national innovation, and no Federal agency is re-  
21      sponsible for developing national innovation policy.

1           SUBTITLE A—INNOVATION INFRASTRUCTURE

2   **SEC. 421. THE INNOVATION ADMINISTRATION.**

3           (a) IN GENERAL.—Section 5 of the Stevenson-  
4 Wydler Technology Innovation Act of 1990 (15 U.S.C.  
5 3704) is amended—

6           (1) by striking “a Technology” in subsection  
7 (a) and inserting “an Innovation”;

8           (2) by striking “The Technology” in subsection  
9 (a) and inserting “The Innovation”;

10           (3) by striking “of Technology” in subsection  
11 (a)(3) and inserting “of Innovation”;

12           (4) by striking “Technology” each place it ap-  
13 pears in subsection (b) and in subsection (c)(1) and  
14 inserting “Innovation”;

15           (5) by inserting “(1) IN GENERAL.—” before  
16 “The Secretary” in subsection (c) and redesignating  
17 paragraphs (1) through (15) as subparagraphs (A)  
18 through (O); and

19           (6) by adding at the end of subsection (c) the  
20 following:

21           “(2) SPECIFIC INNOVATION-RELATED DU-  
22 TIES.—

23           “(A) IN GENERAL.—The Secretary,  
24 through the Under Secretary, shall—

1                   “(i) provide advice to the President  
2                   with respect to the policies and conduct of  
3                   the Innovation Administration, including  
4                   ways to improve research and development  
5                   concerning climate change innovation and  
6                   the methods of collecting and dissemi-  
7                   nating findings of such research;

8                   “(ii) provide advice to the President  
9                   and the Congress on the development of  
10                  climate change innovation research pro-  
11                  grams;

12                  “(iii) develop and monitor metrics to  
13                  be used by the Federal government in  
14                  managing the innovation process;

15                  “(iv) develop and establish govern-  
16                  ment wide climate change innovation policy  
17                  and strategic plans, consistent with the  
18                  strategic plans of the United States Cli-  
19                  mate Change Science Program and the  
20                  United States Climate Technology Chal-  
21                  lenge Program, including an implementa-  
22                  tion plan, developed in consultation with  
23                  the Secretary of Energy and the Climate  
24                  Change Credit Corporation, for the Cli-  
25                  mate Technology Challenge Program under

1 section 491, addressing technology prior-  
2 ities, total funding, opportunities for Fed-  
3 eral procurement, and other issues;

4 “(v) review and evaluate on a con-  
5 tinuing basis—

6 “(I) technologies available for  
7 transfer and deployment to the com-  
8 mercial sector;

9 “(II) all statutes and regulations  
10 pertaining to Federal programs which  
11 assist in the transfer and deployment  
12 of technologies, both domestically and  
13 internationally; and

14 “(III) new and emerging innova-  
15 tion policy issues affecting the deploy-  
16 ment of new technologies, including  
17 identification of barriers to commer-  
18 cialization and recommendations for  
19 removal of those barriers;

20 “(vi) assess the extent to which such  
21 policies, programs, practices, and proce-  
22 dures facilitate or impede the promotion of  
23 the policies set forth in subsection (b);

24 “(vii) gather information about the  
25 implementation, effectiveness, and impact

1 of the deployed climate change related  
2 technologies based on metrics developed  
3 under clause (iii);

4 “(viii) make recommendations to the  
5 President and the Congress and other offi-  
6 cials of Federal agencies or other Federal  
7 entities, regarding ways to better promote  
8 the policies developed under paragraph  
9 (1)(B);

10 “(ix) provide advice, recommenda-  
11 tions, legislative proposals to the Congress  
12 on a continuing basis, and any additional  
13 information the Agency or the Congress  
14 deems appropriate;

15 “(x) make recommendations to the  
16 President, the Congress, and Federal agen-  
17 cies or entities regarding policy on Federal  
18 purchasing behavior that would provide in-  
19 centives to industry to bring new products  
20 to market faster;

21 “(xi) conduct economic analysis in  
22 support of climate change technology de-  
23 velopment and deployment;

1                   “(xii) work with academia to develop  
2 education programs to support the multi-  
3 disciplinary nature of innovation;

4                   “(xiii) establish partnerships with in-  
5 dustry to determine the needs for the fu-  
6 ture workforce to support deployed tech-  
7 nologies;

8                   “(xiv) assist in the search for partners  
9 to establish public-private partnerships,  
10 and in searching for capital funds from the  
11 investment community for new businesses  
12 in the climate change technology sector;  
13 and

14                   “(xv) identify opportunities to pro-  
15 mote cooperation on research, development,  
16 and commercialization with other countries  
17 and make recommendations, based on the  
18 opportunities so identified to the Secretary  
19 of State.

20                   “(B) ANNUAL REPORT.—

21                   “(i) IN GENERAL.—The Administrator  
22 shall prepare and submit to the President  
23 and the appropriate committees of the  
24 Congress a report entitled ‘Climate Change  
25 Innovation: A Progress Report’ within 6

1 months after the date of enactment of the  
2 Climate Stewardship and Innovation Act of  
3 2005 and annually thereafter.

4 “(ii) CONTENTS.—The report shall  
5 assess the status of the Nation in achiev-  
6 ing the purposes set forth in subsection  
7 (b), with particular focus on the new and  
8 emerging issues impacting the deployment  
9 of new climate change technologies. The  
10 report shall present, as appropriate, avail-  
11 able data on research, education, work-  
12 force, financing, and market opportunities.  
13 The report shall include recommendations  
14 for policy change.

15 “(iii) CONSULTATION REQUIRED.—In  
16 determining the findings, conclusions, and  
17 recommendations of the report, the Agency  
18 shall seek input from industry, academia,  
19 and other interested parties.”.

20 (b) REFERENCES.—Any reference to the Technology  
21 Administration in any other Federal law, Executive order,  
22 rule, regulation, or delegation of authority, or any docu-  
23 ment or pertaining to the Technology Administration or  
24 an officer or employee of the Technology Administration,  
25 is deemed to refer to the Innovation Administration or an

1 officer or employee of the Innovation Administration, as  
2 appropriate.

3 **SEC. 422. TECHNOLOGY TRANSFER OPPORTUNITIES.**

4 (a) IN GENERAL.—The Secretary of Commerce shall  
5 conduct a study of technology transfer barriers, best prac-  
6 tices, and outcomes of technology transfer activities at  
7 Federal laboratories related to the licensing and commer-  
8 cialization of energy efficient technologies, and other tech-  
9 nologies that, compared to similar technology in commer-  
10 cial use, result in reduced emissions of greenhouse gases,  
11 increased ability to adapt to climate change impacts, or  
12 increased sequestration of greenhouse gases. The Sec-  
13 retary shall submit a report setting forth the findings and  
14 conclusions of the study to the Senate Committee on Com-  
15 merce, Science, and Transportation and the House of Rep-  
16 resentatives Committee on Science within 6 months after  
17 the date of enactment of this Act. The Secretary shall  
18 work with the existing interagency working group to ad-  
19 dress identified barriers to technology transfer.

20 (b) BUSINESS OPPORTUNITIES STUDY.—The Sec-  
21 retary of Commerce shall perform an analysis of business  
22 opportunities, both domestically and internationally, avail-  
23 able for climate change technologies. The Secretary shall  
24 transmit the Secretary's findings and recommendations  
25 from the first such analysis to the Senate Committee on

1 Commerce, Science, and Transportation and the House of  
2 Representatives Committee on Science within 6 months  
3 after the date of enactment of this Act, and shall transmit  
4 a revised report of such findings and recommendations to  
5 those Committees annually thereafter.

6 (c) AGENCY REPORT TO INCLUDE INFORMATION ON  
7 TECHNOLOGY TRANSFER INCOME AND ROYALTIES.—  
8 Paragraph (2)(B) of section 11(f) of the Stevenson-  
9 Wydler Technology Innovation Act of 1980 (15 U.S.C.  
10 3710(f)) is amended—

11 (1) by striking “and” after the semicolon in  
12 clause (vi);

13 (2) by redesignating clause (vii) as clause (ix);  
14 and

15 (3) by inserting after clause (vi) the following:

16 “(vii) the number of fully-executed li-  
17 censes which received royalty income in the  
18 preceding fiscal year for climate-change or  
19 energy-efficient technology;

20 “(viii) the total earned royalty income  
21 for climate-change or energy-efficient tech-  
22 nology; and”.

23 (d) INCREASED INCENTIVES FOR DEVELOPMENT OF  
24 CLIMATE-CHANGE OR ENERGY-EFFICIENT TECH-  
25 NOLOGY.—Section 14(a) of the Stevenson-Wydler Tech-

1 nology Innovation Act of 1980 (15 U.S.C. 3710c(a)) is  
2 amended—

3 (1) by striking “15 percent,” in paragraph  
4 (1)(A) and inserting “15 percent (25 percent for cli-  
5 mate change-related technologies),”; and

6 (2) by inserting “(\$250,000 for climate change-  
7 related technologies)” after “\$150,000” each place  
8 it appears in paragraph (3).

9 **SEC. 423. GOVERNMENT-SPONSORED TECHNOLOGY IN-**  
10 **VESTMENT PROGRAM.**

11 (a) **PURPOSE.**—It is the purpose of this section to  
12 provide financial support for the development, through  
13 private enterprise, of technology that has potential appli-  
14 cation to climate change adaptation and mitigation.

15 (b) **FINANCIAL SUPPORT.**—The Secretary of Com-  
16 merce may establish a nonprofit government sponsored en-  
17 terprise for the purpose of providing investment in private  
18 sector technologies that show promise for climate change  
19 adaptation and mitigation applications.

20 (c) **TERMS; CONDITIONS; TRANSPARENCY.**—The Sec-  
21 retary shall report within 30 days after the end of each  
22 calendar quarter to the Senate Committee on Commerce,  
23 Science, and Transportation and the House of Represent-  
24 atives Committee on Science on its operations during that  
25 preceding calendar quarter.

1 (d) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated to the Secretary of Com-  
3 merce for the use of the enterprise established under sub-  
4 section (b) such sums as may be necessary to carry out  
5 the purpose of this section.

6 **SEC. 424. FEDERAL TECHNOLOGY INNOVATION PER-**  
7 **SONNEL INCENTIVES.**

8 The Stevenson-Wydler Technology Innovation Act of  
9 1980 (15 U.S.C. 3701 et seq.) is amended by adding at  
10 the end the following:

11 **“SEC. 24. FEDERAL TECHNOLOGY INNOVATION PERSONNEL**  
12 **INCENTIVES.**

13 “(a) IN GENERAL.—The head of a Federal labora-  
14 tory may authorize the participation by any employee of  
15 the laboratory in an activity described in subsection (b)  
16 in order to achieve the purposes of this Act.

17 “(b) AUTHORIZED ACTIVITIES.—

18 “(1) COMMERCIAL DEVELOPMENT PARTICIPA-  
19 TION ARRANGEMENTS.—

20 “(A) IN GENERAL.—The head of a Federal  
21 laboratory may, under the authority provided by  
22 section 12(b)(5) of this Act, authorize an em-  
23 ployee to participate, as an officer or employee,  
24 in the creation of an enterprise established to  
25 commercially exploit research work realized in

1 carrying out that employee's responsibilities as  
2 an employee of that laboratory for a period of  
3 up to 24 months. The authority may be re-  
4 newed for an additional 12-month period.

5 “(B) LIMITATIONS.—In addition to the re-  
6 quirements set forth in section 12, an employee  
7 may not be authorized under subparagraph (A)  
8 to participate in such an enterprise if—

9 “(i) it would be prejudicial to the nor-  
10 mal functioning of the laboratory;

11 “(ii) by its nature, terms and condi-  
12 tions, or the manner in which the authority  
13 would be exercised, participation by that  
14 employ would reflect adversely on the func-  
15 tions exercised by that employee as an em-  
16 ployee of the laboratory, or risk compro-  
17 mising or calling in question the independ-  
18 ence or neutrality of the laboratory; or

19 “(iii) the interests of the enterprise  
20 are of such a nature as to be prejudicial to  
21 the mission or integrity of the laboratory  
22 or employee.

23 “(C) RELATIONSHIP TO LABORATORY EM-  
24 PLOYMENT.—

1                   “(i) REPRESENTATION.—The em-  
2                   ployee may not represent the employee’s  
3                   official position or the laboratory while  
4                   participating in the creation of the enter-  
5                   prise.

6                   “(ii) FEDERAL EMPLOYMENT STA-  
7                   TUS.—Beginning with the effective date of  
8                   the authorization under subsection (a), an  
9                   employee shall be placed in a temporary  
10                  status without duties or pay and shall  
11                  cease all duties in connection with the lab-  
12                  oratory.

13                  “(iii) RETURN TO SERVICE.—At the  
14                  end of the authorization period, the em-  
15                  ployee may be restored to his former posi-  
16                  tion in the laboratory upon termination of  
17                  any employment or professional relation-  
18                  ship with the enterprise.

19                  “(2) SERVICE IN PRIVATE SECTOR ADVISORY  
20                  CAPACITY.—

21                  “(A) IN GENERAL.—The head of a Federal  
22                  laboratory may, under the authority provided by  
23                  section 12(b)(5) of this Act, authorize an em-  
24                  ployee to serve, as a member of the board of di-  
25                  rectors of, as a member of an advisory com-



1 to increase and establish priorities for funding for multi-  
2 disciplinary and interdisciplinary research at universities  
3 in support of the adaptation to and mitigation of climate  
4 change. The plan shall—

5 (1) address the cross-fertilization and fusion of  
6 research within and across the biological and phys-  
7 ical sciences, the spectrum of engineering disciplines,  
8 and entirely new fields of scientific exploration; and

9 (2) include the area of emerging service  
10 sciences.

11 (b) REPORT TO CONGRESS.—The Director shall  
12 transmit a copy of the plan to the Senate Committee on  
13 Commerce, Science, and Transportation and the House of  
14 Representatives Committee on Science within 6 months  
15 after the date of enactment of this Act.

16 (c) SERVICE SCIENCE DEFINED.—In this section, the  
17 term “service science” means the melding together of the  
18 fields of computer science, operations research, industrial  
19 engineering, mathematics, management science, decision  
20 sciences, social sciences, and legal sciences in a manner  
21 that may transform entire enterprises and drive innova-  
22 tion at the intersection of business and technology exper-  
23 tise.

1 **SEC. 426. CLIMATE INNOVATION PARTNERSHIPS.**

2 (a) IN GENERAL.—The Secretary of Commerce, in  
3 consultation with the Director of the National Science  
4 Foundation, shall create a program of public-private part-  
5 nerships that—

6 (1) focus on supporting climate change related  
7 regional innovation;

8 (2) bridge the gap between the long-term re-  
9 search and commercialization;

10 (3) focus on deployment of technologies needed  
11 by a particular region in adapting or mitigating the  
12 impacts of climate change; and

13 (4) support activities that are selected from  
14 proposals submitted in merit-based competitions.

15 (b) INSTITUTIONAL DIVERSITY.—In creating the pro-  
16 gram, the Secretary and the Administrator shall—

17 (1) encourage institutional diversity; and

18 (2) provide that universities, research centers,  
19 national laboratories, and other non-profit organiza-  
20 tions are allowed to partner with private industry in  
21 submitting applications.

22 (c) GRANTS.—The Secretary may make grants under  
23 the program to the partnerships, but the Federal share  
24 of funding for any project may not exceed 50 percent of  
25 the total investment in any fiscal year.

1 (d) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated to the Secretary such  
3 sums as may be necessary to carry out this section.

4 **SEC. 427. NATIONAL MEDAL OF CLIMATE STEWARDSHIP IN-**  
5 **NOVATION.**

6 (a) IN GENERAL.—There is established a National  
7 Medal of Climate Stewardship Innovation, which shall be  
8 of such design and materials, and bear such inscription,  
9 as the President may prescribe. The President shall award  
10 the medal on the basis of recommendations submitted by  
11 the National Science Foundation and the Secretary of  
12 Commerce to individuals who, in the judgment of the  
13 President, are deserving of special recognition by reason  
14 of their outstanding contributions to knowledge in the field  
15 of climate change innovation.

16 (b) CRITERIA.—The medal shall be awarded in ac-  
17 cordance with the following criteria:

18 (1) ANNUAL LIMIT.—No more than 20 individ-  
19 uals may be awarded the medal in any calendar  
20 year.

21 (2) CITIZENSHIP.—No individual may be  
22 awarded the medal unless, at the time the award is  
23 made, the individual is—

24 (A) a citizen or other national of the  
25 United States; or

1 (B) an alien lawfully admitted to the  
2 United States for permanent residence who—

3 (i) has filed a petition for naturaliza-  
4 tion in the manner prescribed by section  
5 334 of the Immigration and Nationality  
6 Act (8 U.S.C. 1445); and

7 (ii) is not permanently ineligible to be-  
8 come a citizen of the United States.

9 (3) POSTHUMOUS AWARD.—

10 (A) IN GENERAL.—Notwithstanding para-  
11 graph (2), the medal may be awarded post-  
12 humously to an individual who, at the time of  
13 death, met the conditions set forth in para-  
14 graph (2).

15 (B) 5-YEAR LIMITATION.—Notwith-  
16 standing subparagraph (A), the medal may not  
17 be awarded posthumously to an individual after  
18 the fifth anniversary of that individual's death.

19 (c) INSCRIPTION AND CERTIFICATE.—Each medal  
20 shall be suitably inscribed. Each individual awarded the  
21 medal shall also receive a citation descriptive of the award.

22 (d) PRESENTATION.—The presentation of the medal  
23 shall be made by the President with such ceremonies as  
24 the President deems proper, including attendance by ap-  
25 propriate Members of Congress.

1 **SEC. 428. MATH AND SCIENCE TEACHERS' ENHANCEMENT**  
2 **PROGRAM.**

3 (a) IN GENERAL.—The Director of the National  
4 Science Foundation shall establish within the Foundation  
5 a climate change science and technology enhancement pro-  
6 gram for teachers.

7 (b) PURPOSE.—The purpose of the program is to  
8 provide for professional development of mathematics and  
9 science teachers at elementary, middle, and secondary  
10 schools (as defined by the Director), including improving  
11 the education and skills of those teachers with respect  
12 to—

- 13 (1) teaching strategies;
- 14 (2) subject-area expertise; and
- 15 (3) the understanding of climate change science  
16 and technology and the environmental, economic,  
17 and social impacts of climate change on commerce.

18 (c) PROGRAM AREAS.—In carrying out the program  
19 under this section, the Director shall focus on the areas  
20 of—

- 21 (1) scientific measurements;
- 22 (2) tests and standards development;
- 23 (3) industrial competitiveness and quality;
- 24 (4) manufacturing;
- 25 (5) technology transfer; and

1           (6) any other area of expertise that the Direc-  
2           tor determines to be appropriate.

3           (d) APPLICATION PROCEDURE.—The Director shall  
4           prescribe procedures and selection criteria for participants  
5           in the program.

6           (e) AWARDS.—The Director shall issue awards under  
7           the program to participants. In issuing the awards, the  
8           Director shall ensure that the maximum number of par-  
9           ticipants practicable participate in the program. In order  
10          to ensure a maximum level of participation of participants,  
11          the program under this section shall be conducted on an  
12          annual basis during the summer months, when a majority  
13          of elementary, middle, and secondary schools are not in  
14          classes.

15          (f) AUTHORIZATION OF APPROPRIATIONS.—There  
16          are authorized to be appropriated to the Director for car-  
17          rying out this section—

18                (1) \$2,500,000 for fiscal year 2006; and

19                (2) \$2,500,000 for fiscal year 2007.

20   **SEC. 429. PATENT STUDY.**

21          (a) IN GENERAL.—The Director of the Patent and  
22          Trademark Office, in consultation with representatives of  
23          interested parties in the private sector, shall conduct a  
24          study to determine the extent to which changes to the  
25          United States patent system are necessary to increase the

1 flow of climate change-related technologies. The study  
2 shall address—

3 (1) the balance between the protection of the  
4 inventor and the disclosure of information;

5 (2) the role of patents in innovation within the  
6 covered sectors;

7 (3) the extent to which patents facilitate in-  
8 creased investments in climate change research and  
9 development;

10 (4) the international deployment of United  
11 States developed climate change related technologies  
12 on the United States patent system;

13 (5) ways to leverage databases as innovation  
14 tools;

15 (6) best practices for collaborative standard set-  
16 ting; and

17 (7) any other issues the Director deems appro-  
18 priate.

19 (b) REPORT.—Within 6 months after the date of en-  
20 actment of this Act, the Director shall transmit a report  
21 setting forth the findings and conclusions of the study to  
22 the Congress.

23 **SEC. 430. LESSONS-LEARNED PROGRAM.**

24 (a) IN GENERAL.—Within 180 days after the date  
25 of enactment of this Act, the Secretary of Energy shall

1 establish a national lessons-learned and best practices pro-  
2 gram to ensure that lessons learned and best practices  
3 concerning energy efficiency and greenhouse gas emission  
4 reductions are available to the public. The program shall  
5 contain consumer awareness initiatives including product  
6 labeling and campaigns to raise public awareness. The  
7 Secretary shall determine the process and frequency by  
8 which the information is provided.

9 (b) PROGRAM CONTENT.—The program—

10 (1) may include experiences realized outside of  
11 the Federal government;

12 (2) shall include criteria by which entries in the  
13 program are determined;

14 (3) shall use a standardized, user-friendly for-  
15 mat for data reports; and

16 (4) may include any other matters the Sec-  
17 retary deems appropriate.

18 SUBTITLE B—SPECIFIC PROGRAM INITIATIVES

19 **SEC. 451. TRANSPORTATION.**

20 (a) IN GENERAL.—The Secretary of Energy, the Ad-  
21 ministrator of the Environmental Protection Agency, and  
22 the Secretary of Transportation shall establish jointly a  
23 competitive, merit-based research program to fund pro-  
24 posals that—

1           (1) develop technologies that aid in reducing  
2 fuel use or reduce greenhouse gas emissions associ-  
3 ated with any fuel;

4           (2) further develop existing or new technologies  
5 to create renewable fuels created from less carbon or  
6 energy-intensive practices than current renewable  
7 fuel production; or

8           (3) remove existing barriers for deployment of  
9 existing fuels that dramatically reduce greenhouse  
10 gas emissions;

11           (4) support low-carbon transportation fuels, in-  
12 cluding renewable hydrogen, advanced cellulosic eth-  
13 anol, and biomass-based diesel substitutes, and the  
14 technical hurdles to market entry;

15           (5) support short-term and long-term tech-  
16 nology improvements for United States cars and  
17 light trucks that reduce greenhouse gas emissions,  
18 including advanced, high-power hybrid vehicle bat-  
19 teries, advanced gasoline engine designs, fuel cells,  
20 hydrogen storage, power electronics, and lightweight  
21 materials;

22           (6) support advanced heavy-duty truck tech-  
23 nologies to reduce greenhouse gas emissions from  
24 the existing and new fleets, including aerodynamics,  
25 weight reduction, improved tires, anti-idling tech-

1 nology, high-efficiency engines, and hybrid systems;  
2 or

3 (7) expand research into the climatological im-  
4 pacts of air travel and support advanced tech-  
5 nologies to reduce greenhouse gas emissions from  
6 aircraft including advanced turbines, aerodynamics,  
7 and logistics technology that reduces delays, in-  
8 creases load factors and cuts in-air emissions.

9 (b) REAL-WORLD TEST PROCEDURES.—The Admin-  
10 istrator of the Environmental Protection Agency, in con-  
11 sultation with the Secretary of Transportation, shall—

12 (1) conduct research and establish a Federal  
13 test procedure for certifying fuel economy of heavy  
14 duty vehicles; and

15 (2) update Federal test procedures for certi-  
16 fying fuel economy of automobiles and light duty  
17 trucks so the results better reflect real-world oper-  
18 ating conditions.

19 (c) INCORPORATION INTO PROGRAM.—The Secre-  
20 taries shall ensure that the program established under  
21 subsection (a) is incorporated into the United States Cli-  
22 mate Technology Challenge Program.

23 (d) MARKETING STUDY.—The Secretary of Trans-  
24 portation, in coordination with the Secretary of Com-  
25 merce, shall conduct a study on how the government can

1 accelerate the market for low-carbon vehicles. The results  
2 of the study shall be submitted to the Congress within 6  
3 months after the date of enactment of this Act.

4 **SEC. 452. AGRICULTURAL SEQUESTRATION.**

5 (a) IN GENERAL.—The Director of the Office of  
6 Science and Technology Policy shall establish an inter-  
7 agency panel of representatives from the United States  
8 Forest Service, Agriculture Research Service, Agricultural  
9 Experiment Stations and Extension Service, Economic  
10 Research Service Natural Resource Conservation Service,  
11 Environmental Protection Agency, the U.S. Geological  
12 Survey, and the National Institute of Standards and Tech-  
13 nology to establish standards for measurement (and re-  
14 measurement) of sequestered carbon, including lab proce-  
15 dures, field sampling methods, and accuracy of sampling  
16 statistics.

17 (b) DUTIES.—The interagency panel shall—

18 (1) develop discounted default values for the  
19 amount of greenhouse gas emission reductions due  
20 to carbon sequestration or emissions reductions from  
21 improved practices and technologies;

22 (2) develop technologies for low-cost laboratory  
23 and field measurement;

24 (3) develop procedures to improve the accuracy  
25 of equations used to estimate greenhouse gas emis-

1       sions reductions produced by adoption of improved  
2       land management technologies and practices;

3           (4) develop local and regional databases on car-  
4       bon sequestration in soils and biomass, greenhouse  
5       gas emissions, and adopted land management tech-  
6       nologies and practices;

7           (5) develop computation methods for  
8       additionality discounts for prospective greenhouse  
9       gas offsets;

10          (6) develop entitywide reporting requirements  
11       to evaluate project-level leakage;

12          (7) develop commodity-specific greenhouse gas  
13       offset discount factors for market-level leakage, and  
14       update those factors periodically;

15          (8) develop guidelines and standards for green-  
16       house gas offset and reduction project monitoring  
17       and verification and uniform qualifications for third  
18       party verifiers, including specification of conflict of  
19       interest conditions;

20          (9) increase landowner accessibility to tech-  
21       nologies and practices by—

22           (A) improving and expanding availability  
23       and adoption of best management practices for  
24       soils, crop residues, and forests to achieve addi-

1            tional carbon sequestration that meets stand-  
2            ards as bona fide greenhouse gas offsets;

3            (B) improving and expanding availability  
4            and adoption of best management practices for  
5            soils, crop residues, and forests to achieve re-  
6            ductions in emissions of carbon dioxide, meth-  
7            ane, and nitrous oxides that meet standards as  
8            bona fide greenhouse gas emissions reductions;  
9            and

10           (C) establishing incentives for land man-  
11           agers to help finance investments in facilities  
12           that produce bona fide greenhouse gas offsets  
13           or reductions through carbon sequestration or  
14           direct greenhouse gas emissions reductions; and

15           (10) establish best practices to address non-per-  
16           manence and risk of release of sequestered green-  
17           house gases by—

18           (A) assessing and quantifying risks, both  
19           advertent and inadvertent, of release of green-  
20           house gases sequestered in soils and biomass;  
21           and

22           (B) establishing insurance instruments  
23           concerning the release, both advertent and inad-  
24           vertent, of sequestered greenhouse gases.

1 (c) ADDITIONALITY DEFINED.—In this section the  
2 term “additionality” means emissions reduction and se-  
3 questration activities that result in atmospheric benefits  
4 that would not otherwise have occurred.

5 **SEC. 453. GEOLOGICAL STORAGE OF SEQUESTERED**  
6 **GREENHOUSE GASES.**

7 (a) IN GENERAL.—The Secretary of Energy, in con-  
8 sultation with the Secretary of Agriculture and the Admin-  
9 istrator of the Environmental Protection Agency, shall es-  
10 tablish guidelines for setting individual project baselines  
11 for reductions of greenhouse gas emissions and greenhouse  
12 gas storage in various types of geological formations to  
13 serve as the basis for determining the amount of green-  
14 house gas reductions produced by the project.

15 (b) SPECIFIC ACTIVITIES.—The Secretary of Energy,  
16 in consultation with the Director of the U.S. Geological  
17 Survey, shall—

18 (1) develop local and regional databases on ex-  
19 isting practices and technologies for greenhouse gas  
20 injection in underground aquifers;

21 (2) develop methods for computation of  
22 additionality discounts for prospective greenhouse  
23 gas reductions or offsets due to carbon dioxide injec-  
24 tion and storage in underground aquifers;

1           (3) develop accepted standards for monitoring  
2 of carbon dioxide stored in geological subsurface res-  
3 ervoirs by—

4           (A) developing minimum suitability stand-  
5 ards for identifying and monitoring of geologi-  
6 cal storage sites including oil, gas, and coal bed  
7 methane reservoir and deep saline aquifers; and

8           (B) testing monitoring standards using  
9 sites with long term (multi-decade) large injec-  
10 tions of carbon dioxide into oil field enhanced  
11 recovery projects; and

12           (4) address non-permanence and risk of release  
13 of sequestered greenhouse gas by—

14           (A) establishing guidelines for risk assess-  
15 ment of inadvertent greenhouse gas release,  
16 both long-term and short-term, associated with  
17 geological sequestration sites; and

18           (B) developing insurance instruments to  
19 address greenhouse gas release liability in geo-  
20 logical sequestration.

21           (c) NATIONAL GEOLOGICAL CARBON SEQUESTRA-  
22 TION ASSESSMENT.—

23           (1) FINDINGS.—The Congress finds the fol-  
24 lowing:

1 (A) One of the most promising options for  
2 avoiding emissions of carbon dioxide is through  
3 long-term storage by geological sequestration in  
4 stable geological formations, which involves—

5 (i) capturing carbon dioxide from in-  
6 dustrial sources; and

7 (ii) injecting the captured carbon di-  
8 oxide into geological storage sites, such as  
9 deep saline formations, unmineable coal  
10 seams, and depleted gas and oil fields.

11 (B) As of the date of introduction of this  
12 Act, there are only very broad estimates of na-  
13 tional geological storage capacity.

14 (C) The potential to recover additional oil  
15 and gas resources through enhanced oil and gas  
16 recovery using captured carbon dioxide emis-  
17 sions is an option that could add the equivalent  
18 of tens-of-billions of barrels of oil to the na-  
19 tional resource base.

20 (D) An initial geological survey of storage  
21 capacity in the subsurface of sedimentary ba-  
22 sins in the United States would—

23 (i) provide estimates of storage capac-  
24 ity based on clearly defined geological pa-  
25 rameters with stated ranges of uncertainty;

1 (ii) allow for an initial determination  
2 of whether a basin or 1 or more portions  
3 of the basin may be developed into a stor-  
4 age site; and

5 (iii) provide information on—

6 (I) a baseline for monitoring in-  
7 jections and post injection phases of  
8 storage; and

9 (II) early opportunities for  
10 matching carbon dioxide sources and  
11 sinks for early deployment of zero-  
12 emissions fossil fuel plants using cap-  
13 ture and storage technologies.

14 (2) NATIONAL GEOLOGICAL CARBON SEQUES-  
15 TRATION ASSESSMENT.—

16 (A) DEVELOPMENT AND TESTING OF AS-  
17 SESSMENT METHODOLOGY.—

18 (i) IN GENERAL.—Not later than 1  
19 year after the date of enactment of this  
20 Act, the Director of the United States Geo-  
21 logical Survey shall develop and test meth-  
22 ods for the conduct of a national assess-  
23 ment of geological storage capacity for car-  
24 bon dioxide.

1 (ii) OPPORTUNITY FOR REVIEW AND  
2 COMMENT.—During the period beginning  
3 on the date that is 180 days after the date  
4 of enactment of this Act and ending on the  
5 date of completion of the development and  
6 testing of the methodologies under clause  
7 (i), the Director shall provide the Under  
8 Secretary for Oceans and Atmosphere of  
9 the Department of Commerce, the Sec-  
10 retary of Energy, the Administrator of the  
11 Environmental Protection Agency, the Di-  
12 rector of the Minerals Management Serv-  
13 ice, the Director of the Bureau of Land  
14 Management, the heads of other Federal  
15 land management agencies, the heads of  
16 State land management agencies, industry  
17 stakeholders, and other interested parties  
18 with an opportunity to review and com-  
19 ment on the proposed methodologies.

20 (B) ASSESSMENT.—

21 (i) IN GENERAL.—The Director shall  
22 conduct the assessment during the period  
23 beginning on the date on which the devel-  
24 opment and testing of the methodologies is  
25 completed under subparagraph (A) and

1 ending 4 years after the date of enactment  
2 of this Act.

3 (ii) AVAILABILITY OF INFORMA-  
4 TION.—The Director shall establish an  
5 Internet database accessible to the public  
6 that provides the results of the assessment,  
7 including a detailed description of the data  
8 collected under the assessment.

9 (iii) REPORT.—Not later than 1 year  
10 after the date on which the assessment is  
11 completed under clause (i), the Director  
12 shall submit to the appropriate committees  
13 of Congress and the President a report  
14 that describes the findings of the assess-  
15 ment.

16 (3) AUTHORIZATION OF APPROPRIATIONS.—  
17 There are authorized to be appropriated  
18 \$15,000,000 to carry out this section for fiscal years  
19 2006 through 2009.

20 **SEC. 454. ENERGY EFFICIENCY AUDITS.**

21 (a) IN GENERAL.—The Secretary of Energy shall es-  
22 tablish a program to reduce greenhouse gas emissions  
23 through the deployment of energy efficiency measures, in-  
24 cluding appropriate technologies, by large commercial cus-  
25 tomers by providing for energy audits. The program shall

1 provide incentives for large users of electricity or natural  
2 gas to obtain an energy audit.

3 (b) COMPONENTS.—The energy audit shall provide  
4 users with an inventory of potential energy efficiency  
5 measures, including appropriate technologies, and their  
6 cost savings over time, along with financing options to ini-  
7 tiate the project.

8 (c) REIMBURSEMENT OF AUDIT COSTS.—If any of  
9 the recommendations of an energy audit implemented by  
10 a facility owner result in cost savings greater than 5 times  
11 the cost of the original audit, then the facility owner shall  
12 reimburse the Secretary for the cost of the audit.

13 **SEC. 455. ADAPTATION TECHNOLOGIES.**

14 (a) IN GENERAL.—The Director of the Office of  
15 Science and Technology Policy shall establish a program  
16 on adaptation technologies as part of the Climate Tech-  
17 nology Challenge Program. The Director shall perform an  
18 assessment of the climate change technological needs of  
19 various regions of the country. This assessment shall be  
20 provided to the Senate Committee on Commerce, Science,  
21 and Transportation and the House of Representatives  
22 Committee on Science within 6 months after the date of  
23 enactment of this Act.

24 (b) REGIONAL ESTIMATES.—The Director of the Of-  
25 fice of Science and Technology Policy, in consultation with

1 the Secretaries of Transportation, Homeland Security,  
2 Agriculture, Housing and Urban Development, Health  
3 and Human Services, Defense, Interior, Energy, and Com-  
4 merce, the Administrator of the Environmental Protection  
5 Agency , the Director of U.S. Geologic Survey, and other  
6 such Federal offices as the Director deems necessary,  
7 along with relevant State agencies, shall perform 6 re-  
8 gional infrastructure cost assessments covering the United  
9 States, and a national cost assessment, to provide esti-  
10 mates of the range of costs that should be anticipated for  
11 adaptation to the impacts of climate change. The Director  
12 shall develop those estimates for low, medium, and high  
13 probabilities of climate change and its potential impacts.  
14 The assessments shall be provided to the Senate Com-  
15 mittee on Commerce, Science, and Transportation and the  
16 House of Representatives Committee on Science within 1  
17 year after the date of enactment of this Act.

18 **SEC. 456. ADVANCED RESEARCH AND DEVELOPMENT FOR**  
19 **SAFETY AND NONPROLIFERATION.**

20 The Secretary of Energy shall establish, operate, and  
21 report biannually to Congress the results of—

- 22 (1) a program of research and development fo-  
23 cused on advanced once-through fuel cycles;  
24 (2) a Nuclear System Modeling project to carry  
25 out the analysis, research, simulation, and collection

1 of engineering data needed to evaluate all fuel cycles  
2 with respect to cost, inherent safety, waste manage-  
3 ment and proliferation-avoidance and -resistance;  
4 and

5 (3) an Advanced Diversified Waste-Disposal  
6 Research Program, to complement the current re-  
7 pository authorized under the Nuclear Waste Policy  
8 Act, for deep-bore hole disposal options, alternative  
9 geological environments, and improved engineered  
10 barriers.

11 SUBTITLE C—CLIMATE TECHNOLOGY DEPLOYMENT

12 PROGRAM

13 PART I—PROGRAM AUTHORITY

14 **SEC. 471. GOVERNMENT-INDUSTRY PARTNERSHIPS FOR**  
15 **FIRST-OF-A-KIND ENGINEERING DESIGN.**

16 (a) IN GENERAL.—The Corporation may provide  
17 funding for a cost-sharing program to address first-of-a-  
18 kind engineering costs inherent in building the first facil-  
19 ity of a substantially new design that generates electricity  
20 with low or no net greenhouse gas emissions or produces  
21 transportation fuels that result in low or no net green-  
22 house gas emissions, including Integrated Gasification  
23 Combined Cycle Advanced Coal power generating facilities  
24 using carbon capture technology with geological storage  
25 of greenhouse gases, advanced reactor designs, large scale

1 biofuels facilities that maximize the use of cellulosic bio-  
2 mass, and large scale solar concentrating power facilities.

3 (b) PROJECT SELECTION.—The Secretary of Energy  
4 in coordination with the Corporation shall select the final  
5 designs to be supported, in terms of reducing greenhouse  
6 gas emissions, demonstrating a new technology, meeting  
7 other clean air attainment goals, generating economic ben-  
8 efits, contributing to energy security, contributing to fuel  
9 and technology diversity, maintaining price stability, and  
10 attaining cost effectiveness and economic competitiveness.

11 (c) COST-SHARING LIMITATIONS.—

12 (1) CORPORATION'S SHARE OF COSTS.—Costs  
13 for the program shall be shared equally between the  
14 Corporation and the builder of such first facilities.

15 (2) NUCLEAR REACTORS.—Funding under this  
16 section for any nuclear facility—

17 (A) may not exceed \$200,000,000 for an  
18 individual project; and

19 (B) shall be available for no more than 1  
20 of each of the 3 designs certified by the Nuclear  
21 Regulatory Commission.

22 (d) REIMBURSEMENT OF COSTS.—For any subse-  
23 quently-built facility that uses a design supported by the  
24 cost-sharing program under this section, the Secretary of  
25 Energy and the Corporation shall specify an amount to

1 be paid to the Corporation in order for the Corporation  
2 to receive full reimbursement for costs the Corporation in-  
3 curred in connection with the design, considering the pro-  
4 gram's objectives, including the costs of promoting the de-  
5 ployment of cost-effective, economically competitive tech-  
6 nologies with no or low net greenhouse gas emissions.

7 (e) REIMBURSEMENT FOR DELAY.—If the construc-  
8 tion of such a first facility of a substantially new design  
9 is not started within 10 years after the date on which a  
10 commitment under the cost-sharing program is made by  
11 the Secretary, then the industry partner shall reimburse  
12 the Corporation for any costs incurred by the Corporation  
13 under the program.

14 (f) JURISDICTION.—

15 (1) NUCLEAR REGULATORY COMMISSION.—  
16 Nothing in this Act shall affect the jurisdiction of  
17 the Nuclear Regulatory Commission over nuclear  
18 power plant design approvals or combined construc-  
19 tion and operating licenses pursuant to the Atomic  
20 Energy Act of 1954 (42 U.S.C. 2011 et seq.).

21 (2) REGULATORY AGENCIES.—Nothing in this  
22 Act affects the jurisdiction of any Federal, State, or  
23 local government regulatory agency.

1 **SEC. 472. DEMONSTRATION PROGRAMS.**

2 (a) NUCLEAR REGULATORY COMMISSION LICENSING  
3 PROCESS.—

4 (1) DEMONSTRATION PROGRAM.—Within 24  
5 months after the date of enactment of this Act, the  
6 Secretary of Energy shall establish a demonstration  
7 program to reduce the first-time regulatory costs of  
8 the current Nuclear Regulatory Commission licens-  
9 ing process incurred by the first applicant using an  
10 advanced reactor design.

11 (2) PERMITS; LICENSES; COST-SHARING.—

12 (A) The demonstration program shall—

13 (i) address the Early Site Permit ap-  
14 plications and the combined construction  
15 and operating license applications; and

16 (ii) be jointly funded by the Depart-  
17 ment of Energy and the applicant.

18 (B) The Secretary shall work with the ap-  
19 plicant to determine the appropriate percentage  
20 of costs that the Department and the applicant  
21 shall each provide.

22 (3) REIMBURSEMENT FOR LICENSE TRANS-  
23 FER.—If an applicant decides to transfer a permit  
24 granted by the Commission under the program to  
25 another entity, the applicant shall reimburse the De-  
26 partment for its costs in obtaining the permit.

1 (b) RETOOLING OF ADVANCED VEHICLE MANUFAC-  
2 TURING.—

3 (1) IN GENERAL.—Within 24 months after the  
4 date of enactment of this Act, the Secretary of En-  
5 ergy shall establish a program to demonstrate the  
6 effectiveness of retooling an existing vehicle or vehi-  
7 cle component manufacturing facility to reduce re-  
8 duced greenhouse gas emissions from vehicles and  
9 increasing competitiveness of advanced technology  
10 vehicle production facilities.

11 (2) PROGRAM ELEMENTS.—

12 (A) ACTIVITIES SUPPORTED.—The dem-  
13 onstration program shall be designed—

14 (i) to re-equip an existing manufac-  
15 turing facility to produce advanced tech-  
16 nology vehicles or components that will re-  
17 sult in reduced greenhouse gas emissions;  
18 and

19 (ii) to conduct engineering integration  
20 activities of advanced technological vehicles  
21 and components.

22 (B) FUNDING.—The program shall be  
23 jointly funded by the private sector and the De-  
24 partment of Energy. Secretary of Energy shall  
25 work with participating entities to determine

1 the appropriate percentage of costs that each  
2 shall provide.

3 (C) ELIGIBLE COMPONENTS AND ACTIVITIES.—The Secretary, in coordination with the  
4 Administrator of the Environmental Protection  
5 Agency and the Secretary of Transportation,  
6 shall determine what advanced technology com-  
7 ponents and engineering integration activities  
8 will qualify for support under the program.

10 (D) ELIGIBLE COSTS.—Costs eligible to be  
11 shared under this subsection include the cost of  
12 engineering tasks related to—

13 (i) incorporating qualifying compo-  
14 nents into the design of advanced tech-  
15 nology vehicles; and

16 (ii) designing new tooling and equip-  
17 ment for production facilities that produce  
18 qualifying components or advanced tech-  
19 nology vehicles.

20 (3) LIMITATION.—No more than 2 facilities  
21 may receive financial assistance under the program  
22 for re-equipment and expansion or for engineering  
23 integration.

24 (4) ADVANCED TECHNOLOGY VEHICLE DE-  
25 FINED.—In this subsection, the term “advanced

1 technology vehicle” means a light duty motor vehicle  
2 that is either a hybrid or advanced lean burn tech-  
3 nology motor vehicle, and that meets the following  
4 additional performance criteria:

5 (A) The vehicle shall meet the Tier II Bin  
6 5 emission standard established in regulations  
7 prescribed by the Administrator under that Act.

8 (B) The vehicle shall meet any new emis-  
9 sion standard for fine particulate matter pre-  
10 scribed by the Administrator under that Act.

11 (C) The vehicle shall achieve at least 125  
12 percent of the base year city fuel economy for  
13 its weight class.

14 PART II—FINANCING

15 **SEC. 481. CLIMATE TECHNOLOGY FINANCING BOARD.**

16 (a) PURPOSE.—The Climate Technology Financing  
17 Board shall work with the Secretary of Energy to make  
18 financial assistance available to joint venture partnerships  
19 and promote private sector participation in financing eligi-  
20 ble projects under this subtitle.

21 (b) ESTABLISHMENT.—

22 (1) IN GENERAL.—Not later than 90 days after  
23 the date of enactment of this Act, the Secretary of  
24 Energy shall establish within the Department of En-  
25 ergy a Climate Technology Financing Board, which

1 shall be responsible for assisting the Secretary in  
2 carrying out this subtitle.

3 (2) MEMBERSHIP.—The Climate Technology  
4 Financing Board shall be comprised of—

5 (A) the Secretary of Energy, who shall  
6 serve as chair; and

7 (B) 6 additional members appointed by the  
8 Secretary, including—

9 (i) the Chief Financial Officer of the  
10 Department of Energy;

11 (ii) at least 1 representative of the  
12 Corporation; and

13 (iii) other members with experience in  
14 corporate and project finance in the energy  
15 sector as deemed necessary by the Sec-  
16 retary to carry out the functions of the  
17 Board.

18 (3) REPRESENTATION OF FEDERAL INTER-  
19 EST.—The Climate Technology Financing Board  
20 shall represent the Federal government’s interest in  
21 all negotiations with project developers interested in  
22 forming joint venture partnerships and obtaining se-  
23 cured loans or loan guarantees under this subtitle.

24 (c) REGULATIONS.—

1           (1) IN GENERAL.—Not later than 12 months  
2 after the date of enactment of this Act, the Climate  
3 Technology Financing Board, through the Secretary  
4 of Energy, shall publish in the Federal Register such  
5 final regulations as may be necessary to implement  
6 section 482 of this title.

7           (2) PROJECT SELECTION CRITERIA.—In select-  
8 ing eligible projects for financial assistance under  
9 this subtitle, the Board shall consider, among other  
10 relevant criteria—

11           (A) the extent to which the project reduces  
12 greenhouse gases, demonstrates new tech-  
13 nologies, meets other clean air attainment  
14 goals, generates economic benefits, contributes  
15 to energy security, contributes to fuel and tech-  
16 nology diversity, and maintains price stability,  
17 cost effectiveness, and economic competitive-  
18 ness;

19           (B) the extent to which assistance under  
20 this subtitle would foster innovative public-pri-  
21 vate partnerships and attract private equity in-  
22 vestment;

23           (C) the likelihood that assistance under  
24 this subtitle would enable the project to proceed

1 at an earlier date than the project would other-  
2 wise be able to proceed without such assistance;

3 (D) the extent to which the project rep-  
4 represents the construction of the first generation  
5 of facilities that use substantially new tech-  
6 nology; and

7 (E) any other criteria deemed necessary by  
8 the Secretary for the promotion of long-term  
9 cost effective climate change-related tech-  
10 nologies.

11 (3) MANDATORY REGULATORY PROVISIONS.—

12 The regulations required by paragraph (1) shall in-  
13 clude the following:

14 (A) The general terms and conditions  
15 under which non-recourse financial assistance  
16 will be provided. Those terms shall include—

17 (i) a debt-to-equity ratio of up to 80  
18 percent debt from the Corporation, ap-  
19 proved by the Secretary, and no less than  
20 20 percent equity from the project devel-  
21 oper;

22 (ii) a pledge of the eligible project's  
23 assets to the Secretary and the project de-  
24 veloper to secure their respective loan and  
25 equity contributions; and

1 (iii) loan repayment terms generally  
2 consistent with financial terms available to  
3 project developers in the United States  
4 power generation industry.

5 (B) The general terms and conditions  
6 under which loan guarantees will be provided,  
7 which shall be consistent with section 483(c).

8 (C) The procedures by which project own-  
9 ers and project developers may request such fi-  
10 nancial assistance.

11 (D) A process under which the Climate  
12 Technology Financing Board, the joint venture  
13 partnership, and the project developer shall ne-  
14 gotiate commercially reasonable terms con-  
15 sistent with terms generally available in the  
16 United States power generation industry re-  
17 garding cost, construction schedule, and other  
18 conditions under which the project developer  
19 shall acquire the loan from the joint venture  
20 partnership and repay the secured loan and ac-  
21 quire an undivided interest in the eligible  
22 project when the project achieves commercial  
23 operation. Terms prescribed under this sub-  
24 paragraph shall include—

1 (i) a defined right of the joint venture  
2 partnership to terminate the loan agree-  
3 ment upon a date certain for project delays  
4 that are not the fault of the project devel-  
5 oper; and

6 (ii) may not refer to the Federal Ac-  
7 quisition Regulations.

8 (E) Provisions to retain independent third-  
9 party engineering assistance, satisfactory to the  
10 Climate Technology Financing Board, the  
11 project developer, and the joint venture partner-  
12 ship, to verify and validate construction costs  
13 and construction schedules, to monitor con-  
14 struction, and authorize draws on financing  
15 during construction to ensure that construction  
16 is consistent with generally accepted utility  
17 practice, and to make recommendations as to  
18 the cause of delay or cost increases should such  
19 delays or cost increases occur.

20 (F) Provisions to ensure—

21 (i) continued project development and  
22 construction in the event of a delay to  
23 achieving commercial operation caused by  
24 an event outside the control of the joint de-

1                   velopment partners and the project devel-  
2                   oper; and

3                   (ii) continued project operations in the  
4                   event the sale of the eligible project to the  
5                   project developer is not executed due to an  
6                   event outside the control of the project de-  
7                   veloper.

8                   (G) Any other information necessary for  
9                   the Secretary of Energy to discharge fully the  
10                  obligation conferred under this subtitle, includ-  
11                  ing a process for negotiating the terms and con-  
12                  ditions of such financial assistance.

13               (d) COMPREHENSIVE IMPLEMENTATION PLAN.—Not  
14               later than 12 months after the date of enactment of this  
15               Act, the Climate Technology Financing Board shall pre-  
16               pare and transmit to the President and Congress a com-  
17               prehensive plan for implementation of this subtitle.

18               (e) PROGRESS REPORTS.—Not later than 12 months  
19               after the comprehensive plan required by subsection (d)  
20               and annually thereafter the Secretary shall prepare and  
21               transmit to the President and the Congress a report sum-  
22               marizing progress in satisfying the requirements estab-  
23               lished by the subtitle.

1 **SEC. 482. RESPONSIBILITIES OF THE SECRETARY.**

2 (a) FINANCIAL ASSISTANCE.—Subject to the require-  
3 ments of the Federal Credit Reform Act of 1990 (2 U.S.C.  
4 661 et seq.), the Secretary, in coordination with the Cor-  
5 poration, may make available to joint venture partnerships  
6 for eligible project costs such Federal financial assistance  
7 as the Climate Technology Financing Board determines  
8 is necessary to enable access to, or to supplement, private  
9 sector financing for projects if the Board determines that  
10 such projects are needed to reduce greenhouse gas emis-  
11 sions, contribute to energy security, fuel or technology di-  
12 versity, or clean air attainment goals. The Secretary, in  
13 coordination with the Corporation, shall prescribe such  
14 terms and conditions for financial assistance as the Sec-  
15 retary deems necessary or appropriate to protect the fi-  
16 nancial interests of the United States.

17 (b) REQUIREMENTS.—Approval criteria for financial  
18 assistance under subsection (a) shall include—

19 (1) the creditworthiness of the project;

20 (2) the extent to which Federal financial assist-  
21 ance would encourage public-private partnerships,  
22 attract private-sector investment, and demonstrate  
23 safe and secure electric generation or fuel production  
24 technology;

25 (3) the likelihood that Federal financial assist-  
26 ance would hasten commencement of the project;

1           (4) in the case of a nuclear power plant, wheth-  
2           er the project developer provides reasonable assur-  
3           ance to the Secretary that the project developer can  
4           successfully manage nuclear power plant operations;

5           (5) the extent to which the project will dem-  
6           onstrate safe and secure reduced or zero greenhouse  
7           gas emitting electric generating or fuel production  
8           technology; and

9           (6) any other criteria the Secretary deems nec-  
10          essary or appropriate.

11         (c) RESERVE AMOUNT.—Before entering into any  
12         agreements under this subtitle, the Secretary, in consulta-  
13         tion with the Director of the Office of Management and  
14         Budget, shall determine an appropriate capital reserve  
15         subsidy amount for any loan or loan guarantee provided  
16         by the agreement. The Secretary, in consultation with the  
17         project developer, shall determine the appropriate type of  
18         Federal financial assistance to be provided for eligible  
19         projects.

20         (d) CONFIDENTIALITY.—The Secretary and the Cor-  
21         poration shall protect the confidentiality of any informa-  
22         tion that is certified by a project developer to be commer-  
23         cially sensitive.

24         (e) FULL FAITH AND CREDIT.—All loans or loan  
25         guarantees provided by the Secretary under this subtitle

1 shall be general obligations of the United States backed  
2 by the full faith and credit of the United States.

3 **SEC. 483. LIMITATIONS.**

4 (a) SECURED LOANS.—

5 (1) IN GENERAL.—The financial assistance pro-  
6 vided by this subtitle for secured loans or loan guar-  
7 antees—

8 (A) shall be available for new low or zero  
9 greenhouse gas emitting energy generating or  
10 fuel production facilities, including—

11 (i) no more than 3 integrated gasifi-  
12 cation combined cycle coal power plants  
13 with carbon capture and geological storage  
14 of greenhouse gases;

15 (ii) no more than the first of each of  
16 the 3 advanced reactor design projects for  
17 which applications for combined construc-  
18 tion and operating licenses have been filed  
19 on or before December 31, 2015;

20 (iii) no more than 3 large scale  
21 biofuels production facilities that encour-  
22 age a diversity of pioneer projects relying  
23 on different feedstocks in different regions  
24 of the country and maximizing the use of  
25 cellulosic biomass; and

1 (iv) no more than 3 large scale solar  
2 facilities of greater than 5 megawatts ca-  
3 pacity which begin operation after Decem-  
4 ber 31, 2005, and before January 1, 2011;  
5 and

6 (B) may not exceed 80 percent of eligible  
7 project costs for each project.

8 (2) GOVERNMENT-CAUSED DELAYS.—Para-  
9 graph (1)(B) of this subsection does not apply if—

10 (A) with respect to a nuclear power  
11 plant—

12 (i) the conditions specified in the con-  
13 struction and operation license issued by  
14 the Nuclear Regulatory Commission  
15 change; and

16 (ii) the changed conditions result in  
17 project delays or changes in project scope  
18 after the start of construction that are not  
19 attributable to private sector project man-  
20 agement, construction, or variances from  
21 the Nuclear Regulatory Commission's ap-  
22 proved design criteria or safety require-  
23 ments; or

1 (B) with respect to an advanced coal power  
2 plant, biofuels production facility, solar power  
3 facility, or other eligible facility—

4 (i) the conditions specified in the con-  
5 struction permit change; and

6 (ii) the changed conditions result in  
7 project delays or changes in project scope  
8 after the start of construction that are not  
9 attributable to private sector project man-  
10 agement, construction, or variances from  
11 the approved design criteria or safety re-  
12 quirements.

13 (3) ADDITIONAL ASSISTANCE.—If paragraph  
14 (1)(B) of this subsection does not apply for reasons  
15 described in paragraph (2), then the financial assist-  
16 ance payable to the project developer shall include  
17 additional capital costs, costs of project oversight,  
18 lost replacement power, and calculated interest, as  
19 determined appropriate by the Secretary of Energy.

20 (b) LOAN REPAYMENT TERMS.—

21 (1) The repayment terms for non-recourse se-  
22 cured loans made under this subtitle shall be nego-  
23 tiated among the Climate Technology Financing  
24 Board, the joint venture partnership, and the project

1 developer prior to issuance of the loan and com-  
2 mencement of construction.

3 (2) The project developer shall purchase the  
4 joint venture partnership's interest in the project  
5 after the start of the eligible project's commercial  
6 operation pursuant to the conditions of the loan with  
7 the proceeds of refinancing from non-Federal fund-  
8 ing sources.

9 (3) The value of the joint venture partnership's  
10 interest in the eligible project shall be determined in  
11 negotiations prior to issuance of a secured loan  
12 under the subtitle.

13 (4) The interest rate on loans made under this  
14 subtitle shall not be less than the yield on United  
15 States Treasury securities of a similar maturity to  
16 the maturity of the loan on the date of execution of  
17 the loan agreement.

18 (5) A secured loan for an eligible project under  
19 this subtitle shall be non-recourse to the joint ven-  
20 ture partnership in the event of bankruptcy, insol-  
21 vency, liquidation, or failure of the project to start  
22 commercial operation when the project is ready for  
23 commercial operation.

24 (c) LOAN GUARANTEES.—



1 approved and certified by the Nuclear Regulatory  
2 Commission.

3 (2) CELLULOSIC ETHANOL.—The term “cel-  
4 lulosic ethanol” means ethanol produced from fi-  
5 brous or woody plant materials.

6 (3) COMMERCIAL OPERATION.—

7 (A) NUCLEAR POWER FACILITY.—With re-  
8 spect to a nuclear power plant, the term “com-  
9 mercial operation” means the date—

10 (i) on which a new nuclear power  
11 plant has received a full power 40-year op-  
12 erating license from the Nuclear Regu-  
13 latory Commission; and

14 (ii) by which all Federal, State, and  
15 local appeals and legal challenges to such  
16 operating license have become final.

17 (B) ADVANCED COAL POWER PLANTS.—

18 With respect to an advanced coal power plant,  
19 the term “commercial operation” means the  
20 date—

21 (i) on which a new power plant has  
22 received a full power rating; and

23 (ii) by which all Federal, State, and  
24 local appeals and legal challenges to the

1 operating license for the power plant have  
2 become final.

3 (4) CORPORATION.—The term “Corporation”  
4 means the Climate Change Credit Corporation.

5 (5) ELIGIBLE PROJECT.—The term “eligible  
6 project” means—

7 (A) any commercial nuclear power facility  
8 for the production of electricity that uses one or  
9 more advanced reactor designs;

10 (B) any advanced coal power plant uti-  
11 lizing the integrated gasification combined cycle  
12 technology with carbon capture and geological  
13 storage of greenhouse gases;

14 (C) any biofuels production facility which  
15 uses cellulosic feedstock; or

16 (D) any power facility which uses solar en-  
17 ergy for the production of more than 75 percent  
18 of its annual output, which output capacity  
19 shall not be less than 10 megawatts as deter-  
20 mined by common engineering practice.

21 (6) ELIGIBLE PROJECT COSTS.—The term “eli-  
22 gible project costs” means all costs related to the de-  
23 velopment and construction of an eligible project  
24 under this subtitle, including, without limitation, the  
25 cost of—

1 (A) development phase activities, including  
2 site acquisition and related real property agree-  
3 ments, environmental reviews, licensing and  
4 permitting, engineering and design work, off-  
5 taker agreements and arrangements, and other  
6 preconstruction activities;

7 (B) fabrication and acquisition of equip-  
8 ment, project construction activities and con-  
9 struction contingencies, project overheads,  
10 project management costs, and labor and engi-  
11 neering costs incurred during construction;

12 (C) capitalized interest necessary to meet  
13 market requirements, reasonably required re-  
14 serve funds, capital issuance expenses, and  
15 other carrying costs during construction; and

16 (D) any other costs that the Climate Tech-  
17 nology Financing Board deems reasonable and  
18 appropriate as eligible project costs.

19 (7) FEDERAL FINANCIAL ASSISTANCE.—The  
20 term “Federal financial assistance” means project  
21 construction financing of up to 80 percent of a  
22 project’s eligible project costs in the form of a non-  
23 recourse secured loan or loan guarantee.

24 (8) FIRST-OF-A-KIND ENGINEERING COSTS.—  
25 The term “first-of-a-kind engineering costs” means

1 the extra costs associated with the first units of a  
2 design category for engineering work that develops  
3 the design details that finish plant standardization  
4 up to a complete plant design and that can be re-  
5 used for building subsequent units.

6 (9) JOINT VENTURE PARTNERSHIP.—The term  
7 “joint venture partnership” means a special purpose  
8 entity, including corporations, partnerships, or other  
9 legal entities established to develop, construct, and  
10 finance an eligible project and to receive financing  
11 proceeds in the form of non-recourse secured loans  
12 provided by the Secretary and private equity pro-  
13 vided by project developers.

14 (10) LOAN.—The term “loan” means a direct  
15 non-recourse loan issued to a joint venture partner-  
16 ship engaged in developing an eligible project and  
17 funded by the Secretary under this subtitle, which is  
18 subject to repayment by the joint venture partner-  
19 ship under terms and conditions to be negotiated  
20 among the project developer, joint venture partner-  
21 ship, and the Secretary before the start of construc-  
22 tion on the project.

23 (11) LOAN GUARANTEE.—The term “loan guar-  
24 antee” means any guarantee or other pledge by the  
25 Secretary to pay all or part of the principle and in-

1       terest on a loan or other debt obligation issued by  
2       a project developer related to its equity investment  
3       and funded by a lender.

4           (12) PROJECT DEVELOPER.—The term “project  
5       developer” means a corporation, partnership, or lim-  
6       ited liability company that—

7           (A) provides reasonable assurance to the  
8       Secretary that the project developer can suc-  
9       cessfully manage plant operations;

10          (B) has the financial capability to con-  
11       tribute 20 percent equity to the development of  
12       the project; and

13          (C) upon commercial operation, will pur-  
14       chase the project from the joint venture part-  
15       nership.

16          (13) SECRETARY.—The term “Secretary”  
17       means the Secretary of Energy.

18          (14) SUBSIDY AMOUNT.—The term “subsidy  
19       amount” means the amount of budget authority suf-  
20       ficient to cover the estimated long-term cost to the  
21       Federal government of a loan, calculated on a net  
22       present value basis, excluding administrative costs  
23       and any incidental effects on governmental receipts  
24       or outlays, in accordance with the provisions of the

1 Federal Credit Reform Act of 1990 (2 U.S.C. 661  
2 et seq.).

3 SUBTITLE D—REVERSE AUCTION FOR TECHNOLOGY  
4 DISSEMINATION

5 **SEC. 491. CLIMATE TECHNOLOGY CHALLENGE PROGRAM.**

6 (a) IN GENERAL.—The Secretary of Energy, in co-  
7 ordination with the Climate Change Credit Corporation,  
8 shall develop and carry out a program in fiscal years 2006  
9 through 2009, to be known as the “Climate Technology  
10 Challenge Program”. The Secretary shall award funding  
11 through the program to stimulate innovation in develop-  
12 ment, demonstration, and deployment of technologies that  
13 have the greatest potential for reducing greenhouse gas  
14 emissions. The program shall be conducted as follows:

15 (1) The Secretary shall post a request for zero  
16 or low greenhouse gas energy services or products  
17 along with a suggested level of funding for each  
18 competition.

19 (2) The Secretary shall award the funding to  
20 the lowest bidder in each competition who meets all  
21 other qualifications in a form of a production incen-  
22 tive to supply—

23 (A) the requested services for a specified  
24 period of time; or

1 (B) the requested product within a speci-  
2 fied period of time.

3 (b) FUNDING.—

4 (1) SOURCE.—Notwithstanding any other provi-  
5 sion of law, or any other provision of this Act, au-  
6 thorizing or appropriating funds to carry out the  
7 provisions of this Act, no funds may be made avail-  
8 able to carry out any activity under this subtitle ex-  
9 cept proceeds from the auction authorized by section  
10 333(g) of this Act, subject to the limitation in sec-  
11 tion 333(g)(3).

12 (2) OPERATING FUNDS.—Beginning with fiscal  
13 year 2010, the Climate Change Credit Corporation  
14 shall administer the Climate Technology Challenge  
15 Program using funds generated under section 352 of  
16 this Act.

17 (c) PROGRAM REQUIREMENTS.—

18 (1) COMPETITIVE PROCESS.—Recipients of  
19 awards under the program shall be selected through  
20 competitions conducted by the Secretary.

21 (2) ADVERTISEMENT OF COMPETITIONS.—The  
22 Secretary shall widely advertise any competitions  
23 conducted under the program.

24 (3) CATEGORIES OF COMPETITIONS.—The Sec-  
25 retary shall conduct separate competitions in the fol-

1       lowing areas of energy and fuel production and serv-  
2       ices:

3               (A) Advanced coal (including integrated  
4               gasification combined cycle) with carbon cap-  
5               ture and storage.

6               (B) Renewable electricity.

7               (C) Energy efficiency (including transpor-  
8               tation).

9               (D) Advanced technology vehicles.

10              (E) Transportation fuels.

11              (F) Carbon sequestration and storage.

12              (G) Zero and low emissions technologies.

13              (H) Adaptation technologies.

14              (I) The Secretary may also conduct com-  
15              petition for a general category to stimulate ad-  
16              ditional, unanticipated advances in technology.

17              (4) EVALUATIONS AND CRITERIA FOR COMPETI-  
18              TIONS.—

19                      (A) PANEL OF EXPERTS.—The Secretary  
20                      shall establish a separate panel of experts to  
21                      evaluate proposals submitted under each com-  
22                      petition.

23                      (B) COMPETITION CRITERIA.—The Sec-  
24                      retary, in consultation with other relevant Fed-  
25                      eral agency heads, shall set minimum criteria,

1 including performance and safety criteria, for  
2 each competition. Proposals shall be evaluated  
3 on their ability to reduce, avoid, or sequester  
4 greenhouse gas emissions at a given price.

5 (C) FULL LIFE CYCLE.—All proposals  
6 within a competition shall compete on full life  
7 cycle avoided greenhouse gas emissions (as  
8 weighted by global warming potential) per dol-  
9 lar of incentive.

10 (5) REPORT OF AWARDS.—In 2009 and every 5  
11 years thereafter the Secretary shall issue a report on  
12 the awards granted by the program, funding pro-  
13 vided, and greenhouse gas emissions avoided or se-  
14 questered.

15 (6) PROGRAM EVALUATION.—The Secretary, in  
16 coordination with the National Academies of  
17 Science, shall evaluate the continued necessity of the  
18 program and future funding needs after fiscal year  
19 2009. The evaluation shall be submitted 3 months  
20 before the end of fiscal year 2009 to the Congress  
21 and the Climate Change Credit Corporation.

22 (7) REVIEW AND REVISION BY CORPORATION.—  
23 The Climate Change Credit Corporation shall review  
24 and revise the awards program every 5 years start-  
25 ing in 2009, issuing new guidelines for the next 5

1 years of Climate Technology Challenge Program by  
2 the end of the fiscal year in which the evaluation in  
3 paragraph (6) is reported. The Climate Change  
4 Credit Corporation shall assess and adjust the cat-  
5 egories of competitions as described in paragraph  
6 (3) to ensure new developing technologies that re-  
7 duce, avoid, or sequester greenhouse gases and are  
8 in need of financial assistance for further develop-  
9 ment and deployment are the focus of the awards  
10 program.

11 (d) BUDGETING AND AWARDING OF FUNDS.—

12 (1) AVAILABILITY OF FUNDS.—Any funds ap-  
13 propriated to carry out this section shall remain  
14 available until expended, but for not more than 4  
15 fiscal years.

16 (2) DEPOSIT AND WITHDRAWAL OF FUNDS.—

17 When an award is offered, the Secretary shall de-  
18 posit the total amount of funding made available for  
19 that award in the Climate Technology Challenge  
20 Trust Fund. If funding expires before an award is  
21 granted, the Secretary shall deposit additional funds  
22 in the account to ensure the availability of funding  
23 for all awards. If an award competition expires be-  
24 fore its goals are met, the Secretary may redesignate  
25 those funds for a new challenge, but any redesis-

1 nated funds will be considered as newly deposited for  
2 the purposes of paragraph (3). All cash awards  
3 made under this section shall be paid from that ac-  
4 count.

5 (3) MAXIMUM AWARD.—No competition under  
6 the program may result in the award of more than  
7 \$100,000,000 without the approval of the Secretary.

8 (4) POST-2010 FUNDING.—Funding for the  
9 competitions after fiscal year 2010 shall be taken  
10 from the Climate Change Credit Corporation.

11 (e) REGISTRATION; ASSUMPTION OF RISK.—

12 (1) REGISTRATION.—Each potential recipient of  
13 an award in a competition under the program under  
14 this section shall register for the competition.

15 (2) ASSUMPTION OF RISK.—In registering for a  
16 competition under paragraph (1), a potential recipi-  
17 ent of a prize shall assume any and all risks, and  
18 waive claims against the United States Government  
19 and its related entities (including contractors and  
20 subcontractors at any tier, suppliers, users, cus-  
21 tomers, cooperating parties, grantees, investigators,  
22 and detailees), for any injury, death, damage, or loss  
23 of property, revenue, or profits, whether direct, indi-  
24 rect, or consequential, arising from participation in  
25 the competition, whether such injury, death, dam-

1       age, or loss arises through negligence or otherwise,  
2       except in the case of willful misconduct.

3       (f) RELATIONSHIP TO OTHER AUTHORITY.—The  
4 Secretary may exercise the authority in this section in con-  
5 junction with or in addition to any other authority of the  
6 Secretary to acquire, support, or stimulate basic and ap-  
7 plied research, technology development, or prototype dem-  
8 onstration projects that promote reduced greenhouse gas  
9 emissions.

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