

109TH CONGRESS
1ST SESSION

S. 1151

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.

IN THE SENATE OF THE UNITED STATES

MAY 26, 2005

Mr. MCCAIN (for himself and Mr. LIEBERMAN) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

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. 2. Table of contents.
- Sec. 3. Definitions.

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- Sec. 102. Report on United States impact of Kyoto protocol.
- Sec. 103. Research grants.
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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.

25 (5) COVERED ENTITY.—The term “covered en-
26 tity” means an entity (including a branch, depart-

1 ment, agency, or instrumentality of Federal, State,
2 or local government) that—

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

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

15 (i) petroleum products that, when
16 combusted, will emit,

17 (ii) hydrofluorocarbons,
18 perfluorocarbons, or sulfur hexafluoride
19 that, when used, will emit, or

20 (iii) other greenhouse gases that,
21 when used, will emit,

22 over 10,000 metric tons of greenhouse gas per
23 year, measured in units of carbon dioxide
24 equivalents.

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

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

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

12 (9) GREENHOUSE GAS.—The term “greenhouse
13 gas” means—

14 (A) carbon dioxide;

15 (B) methane;

16 (C) nitrous oxide;

17 (D) hydrofluorocarbons;

18 (E) perfluorocarbons; and

19 (F) sulfur hexafluoride.

20 (10) INDIRECT EMISSIONS.—The term “indirect
21 emissions” means greenhouse gas emissions that
22 are—

23 (A) a result of the activities of an entity;

24 but

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

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

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

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

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

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

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

23 (15) SECRETARY.—The term “Secretary”
24 means the Secretary of Commerce.

25 (16) SEQUESTRATION.—

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

5 (B) INCLUSIONS.—The term “sequestra-
6 tion” includes—

7 (i) agricultural and conservation prac-
8 tices;

9 (ii) reforestation;

10 (iii) forest preservation; and

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

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

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

20 (ii) any introduction of non-native
21 species.

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

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

5 **TITLE I—FEDERAL CLIMATE**
6 **CHANGE RESEARCH AND RE-**
7 **LATED ACTIVITIES**

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

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

14 **SEC. 102. REPORT ON UNITED STATES IMPACT OF KYOTO**
15 **PROTOCOL.**

16 Within 6 months after the date of enactment of this
17 Act, the Secretary shall execute a contract with the Na-
18 tional Academy of Science for a report to the Senate Com-
19 mittee on Commerce, Science, and Transportation and the
20 House of Representatives Committee on Science on the ef-
21 fects that the entry into force of the Kyoto Protocol with-
22 out United States participation will have on—

23 (1) United States industry and its ability to
24 compete globally;

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

3 (3) United States participation in international
4 environmental climate change mitigation efforts and
5 technology deployment.

6 **SEC. 103. RESEARCH GRANTS.**

7 Section 105 of the Global Change Research Act of
8 1990 (15 U.S.C. 2935) is amended—

9 (1) by redesignating subsection (c) as sub-
10 subsection (d); and

11 (2) by inserting after subsection (b) the fol-
12 lowing:

13 “(c) RESEARCH GRANTS.—

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

19 “(2) DIRECTOR OF OSTP TO TRANSMIT LIST TO
20 NSF.—The Director of the Office of Science and
21 Technology Policy shall transmit the list to the Na-
22 tional Science Foundation.

23 “(3) FUNDING THROUGH NSF.—

24 “(A) BUDGET REQUEST.—The National
25 Science Foundation shall include, as part of the

1 annual request for appropriations for the
2 Science and Technology Policy Institute, a re-
3 quest for appropriations to fund research in the
4 priority areas on the list developed under para-
5 graph (1).

6 “(B) AUTHORIZATION.—For fiscal year
7 2005 and each fiscal year thereafter, there are
8 authorized to be appropriated to the National
9 Science Foundation not less than \$25,000,000,
10 to be made available through the Science and
11 Technology Policy Institute, for research in
12 those priority areas.”.

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

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

18 (1) to develop a global array of terrestrial and
19 oceanographic indicators of paleoclimate in order
20 sufficiently to identify and describe past instances of
21 abrupt climate change;

22 (2) to improve understanding of thresholds and
23 nonlinearities in geophysical systems related to the
24 mechanisms of abrupt climate change;

1 those measures and programs on low-income popu-
2 lations;

3 (3) identify appropriate climate change mitiga-
4 tion strategies and programs for developing coun-
5 tries and low-income populations and assess the im-
6 pact of those strategies and programs on developing
7 countries and on low-income populations in the
8 United States; and

9 (4) include an estimate of the costs of devel-
10 oping and implementing those climate change adap-
11 tation and mitigation programs.

12 (b) REPORT.—Within 1 year after the date of enact-
13 ment of this Act, the Secretary shall transmit a report
14 on the research conducted under subsection (a) to the Sen-
15 ate Committee on Commerce, Science, and Transpor-
16 tation, the Senate Committee on Environment and Public
17 Works, the House of Representatives Committee on
18 Science, and the House of Representatives Committee on
19 Energy and Commerce.

20 (c) AUTHORIZATION OF APPROPRIATIONS.—There
21 are authorized to be appropriated to the Secretary
22 \$2,000,000 to carry out the research required by sub-
23 section (a).

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

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

4 (1) by striking “and” after the semicolon in
5 paragraph (21);

6 (2) by redesignating paragraph (22) as para-
7 graph (23); and

8 (3) by inserting after paragraph (21) the fol-
9 lowing:

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

17 **SEC. 107. DEVELOPMENT OF NEW MEASUREMENT TECH-**
18 **NOLOGIES.**

19 To facilitate implementation of section 204, the Sec-
20 retary shall initiate a program to develop, with technical
21 assistance from appropriate Federal agencies, innovative
22 standards and measurement technologies to calculate
23 greenhouse gas emissions or reductions for which no accu-
24 rate or reliable measurement technology exists. The pro-
25 gram shall include—

1 a global climate change standards and processes re-
2 search program.

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

11 “(A) to develop and provide the enhanced
12 measurements, calibrations, data, models, and
13 reference material standards which will enable
14 the monitoring of greenhouse gases;

15 “(B) to assist in establishing a baseline
16 reference point for future trading in greenhouse
17 gases and the measurement of progress in emis-
18 sions reduction;

19 “(C) that will be exchanged internationally
20 as scientific or technical information which has
21 the stated purpose of developing mutually rec-
22 ognized measurements, standards, and proce-
23 dures for reducing greenhouse gases; and

1 “(D) to assist in developing improved in-
2 dustrial processes designed to reduce or elimi-
3 nate greenhouse gases.

4 “(c) NATIONAL MEASUREMENT LABORATORIES.—

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

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

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

21 “(B) developing chemical processes to be
22 used by industry that, compared to similar
23 processes in commercial use, result in reduced
24 emissions of greenhouse gases or increased se-
25 questration of greenhouse gases; and

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

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

15 “(d) NATIONAL VOLUNTARY LABORATORY ACCREDI-
16 TATION PROGRAM.—The Director shall utilize the Na-
17 tional Voluntary Laboratory Accreditation Program under
18 this section to establish a program to include specific cali-
19 bration or test standards and related methods and proto-
20 cols assembled to satisfy the unique needs for accredita-
21 tion in measuring the production of greenhouse gases. In
22 carrying out this subsection the Director may cooperate
23 with other departments and agencies of the Federal Gov-
24 ernment, State and local governments, and private organi-
25 zations.”.

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

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

9 **SEC. 110. AGRICULTURAL OUTREACH PROGRAM.**

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

17 (b) PROGRAM COMPONENTS.—The program—

18 (1) shall be designed to ensure that agricultural
19 organizations and individual farmers receive detailed
20 information about—

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

23 (B) market-driven economic opportunities
24 that may come from storing carbon in soils and
25 vegetation, including emerging private sector
26 markets for carbon storage; and

1 (C) techniques for measuring, monitoring,
2 verifying, and inventorying such carbon capture
3 efforts;

4 (2) may incorporate existing efforts in any area
5 of activity referenced in paragraph (1) or in related
6 areas of activity;

7 (3) shall provide—

8 (A) outreach materials to interested par-
9 ties;

10 (B) workshops; and

11 (C) technical assistance; and

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

17 **TITLE II—NATIONAL**
18 **GREENHOUSE GAS DATABASE**

19 **SEC. 201. NATIONAL GREENHOUSE GAS DATABASE AND**
20 **REGISTRY ESTABLISHED.**

21 (a) ESTABLISHMENT.—As soon as practicable after
22 the date of enactment of this Act, the Administrator, in
23 coordination with the Secretary, the Secretary of Energy,
24 the Secretary of Agriculture, and private sector and non-
25 governmental organizations, shall establish, operate, and

1 maintain a database, to be known as the “National Green-
2 house Gas Database”, to collect, verify, and analyze infor-
3 mation on greenhouse gas emissions by entities.

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

6 (1) an inventory of greenhouse gas emissions;

7 and

8 (2) a registry of greenhouse gas emission reduc-
9 tions and increases in greenhouse gas sequestra-
10 tions.

11 (c) COMPREHENSIVE SYSTEM.—

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

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

19 (A) the comprehensive system described in
20 paragraph (1) is designed to—

21 (i) maximize completeness, trans-
22 parency, and accuracy of information re-
23 ported; and

1 (ii) minimize costs incurred by entities
2 in measuring and reporting greenhouse gas
3 emissions; and

4 (B) the regulations promulgated under
5 paragraph (1) establish procedures and proto-
6 cols necessary—

7 (i) to prevent the double-counting of
8 greenhouse gas emissions or emission re-
9 ductions reported by more than 1 reporting
10 entity;

11 (ii) to provide for corrections to errors
12 in data submitted to the database;

13 (iii) to provide for adjustment to data
14 by reporting entities that have had a sig-
15 nificant organizational change (including
16 mergers, acquisitions, and divestiture), in
17 order to maintain comparability among
18 data in the database over time;

19 (iv) to provide for adjustments to re-
20 flect new technologies or methods for
21 measuring or calculating greenhouse gas
22 emissions;

23 (v) to account for changes in registra-
24 tion of ownership of emission reductions

1 resulting from a voluntary private trans-
2 action between reporting entities; and

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

6 (3) SERIAL NUMBERS.—Through regulations
7 promulgated under paragraph (1), the Administrator
8 shall develop and implement a system that pro-
9 vides—

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

12 (B) for the provision of unique serial num-
13 bers to identify the registered emission reduc-
14 tions made by an entity relative to the baseline
15 of the entity;

16 (C) for the tracking of the registered re-
17 ductions associated with the serial numbers;
18 and

19 (D) for such action as may be necessary to
20 prevent counterfeiting of the registered reduc-
21 tions.

22 **SEC. 202. INVENTORY OF GREENHOUSE GAS EMISSIONS**
23 **FOR COVERED ENTITIES.**

24 (a) IN GENERAL.—Not later than July 1st of each
25 calendar year after 2008, each covered entity shall submit

1 to the Administrator a report that states, for the pre-
2 ceding calendar year, the entity-wide greenhouse gas emis-
3 sions (as reported at the facility level), including—

4 (1) the total quantity of direct greenhouse gas
5 emissions from stationary sources, expressed in units
6 of carbon dioxide equivalents, except those reported
7 under paragraph (3);

8 (2) the amount of petroleum products sold or
9 imported by the entity and the amount of green-
10 house gases, expressed in units of carbon dioxide
11 equivalents, that would be emitted when these prod-
12 ucts are used for transportation in the United
13 States, as determined by the Administrator under
14 section 301(b);

15 (3) the amount of hydrofluorocarbons,
16 perfluorocarbons, or sulfur hexafluoride, expressed
17 in units of carbon dioxide equivalents, that are sold
18 or imported by the entity and will ultimately be
19 emitted in the United States, as determined by the
20 Administrator under section 301(d); and

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

1 (A) indirect emissions from imported elec-
2 tricity, heat, and steam;

3 (B) process and fugitive emissions; and

4 (C) production or importation of green-
5 house gases.

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

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

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

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

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

18 (b) REQUIREMENTS.—

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

22 (A) establish a baseline; and

23 (B) submit the report described in sub-
24 section (c)(1).

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

9 (c) REPORTS.—

10 (1) REQUIRED REPORT.—Not later than July
11 1st of the each calendar year beginning more than
12 2 years after the date of enactment of this Act, but
13 subject to paragraph (3), an entity described in sub-
14 section (a) shall submit to the Administrator a re-
15 port that states, for the preceding calendar year, the
16 entity-wide greenhouse gas emissions (as reported at
17 the facility level), including—

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

21 (B) the amount of petroleum products sold
22 or imported by the entity and the amount of
23 greenhouse gases, expressed in units of carbon
24 dioxide equivalents, that would be emitted when
25 these products are used for transportation in

1 the United States, as determined by the Admin-
2 istrator under section 301(b);

3 (C) the amount of hydrofluorocarbons,
4 perfluorocarbons, or sulfur hexafluoride, ex-
5 pressed in units of carbon dioxide equivalents,
6 that are sold or imported by the entity and will
7 ultimately be emitted in the United States, as
8 determined by the Administrator under section
9 301(d); and

10 (D) such other categories of emissions as
11 the Administrator determines in the regulations
12 promulgated under section 201(c)(1) may be
13 practicable and useful for the purposes of this
14 Act, such as—

15 (i) indirect emissions from imported
16 electricity, heat, and steam;

17 (ii) process and fugitive emissions;

18 and

19 (iii) production or importation of
20 greenhouse gases.

21 (2) VOLUNTARY REPORTING.—An entity de-
22 scribed in subsection (a) may (along with estab-
23 lishing a baseline and reporting emissions under this
24 section)—

1 (A) submit a report described in paragraph
2 (1) before the date specified in that paragraph
3 for the purposes of achieving and
4 commoditizing greenhouse gas reductions
5 through use of the registry and for other pur-
6 poses; and

7 (B) submit to the Administrator, for inclu-
8 sion in the registry, information that has been
9 verified in accordance with regulations promul-
10 gated under section 201(c)(1) and that relates
11 to—

12 (i) any activity that resulted in the
13 net reduction of the greenhouse gas emis-
14 sions of the entity or a net increase in se-
15 questration by the entity that were carried
16 out during or after 1990 and before the es-
17 tablishment of the database, verified in ac-
18 cordance with regulations promulgated
19 under section 201(c)(1), and submitted to
20 the Administrator before the date that is 4
21 years after the date of enactment of this
22 Act; and

23 (ii) with respect to the calendar year
24 preceding the calendar year in which the
25 information is submitted, any project or

1 activity that resulted in the net reduction
2 of the greenhouse gas emissions of the en-
3 tity or a net increase in net sequestration
4 by the entity.

5 (3) PROVISION OF VERIFICATION INFORMATION
6 BY REPORTING ENTITIES.—Each entity that submits
7 a report under this subsection shall provide informa-
8 tion sufficient for the Administrator to verify, in ac-
9 cordance with measurement and verification methods
10 and standards developed under section 204, that the
11 greenhouse gas report of the reporting entity—

12 (A) has been accurately reported; and

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

15 (i) actual reductions in direct green-
16 house gas emissions—

17 (I) relative to historic emission
18 levels of the entity; and

19 (II) after accounting for any in-
20 creases in indirect emissions described
21 in paragraph (1)(C)(i); or

22 (ii) actual increases in net sequestra-
23 tion.

24 (4) FAILURE TO SUBMIT REPORT.—An entity
25 that participates or has participated in the registry

1 and that fails to submit a report required under this
2 subsection shall be prohibited from using, or allow-
3 ing another entity to use, its registered emissions re-
4 ductions or increases in sequestration to satisfy the
5 requirements of section 301.

6 (5) INDEPENDENT THIRD-PARTY
7 VERIFICATION.—To meet the requirements of this
8 section and section 203, an entity that is required
9 to submit a report under this section may—

10 (A) obtain independent third-party
11 verification; and

12 (B) present the results of the third-party
13 verification to the Administrator.

14 (6) AVAILABILITY OF DATA.—

15 (A) IN GENERAL.—The Administrator
16 shall ensure that information in the database
17 is—

18 (i) published; and

19 (ii) accessible to the public, including
20 in electronic format on the Internet.

21 (B) EXCEPTION.—Subparagraph (A) shall
22 not apply in any case in which the Adminis-
23 trator determines that publishing or otherwise
24 making available information described in that
25 subparagraph poses a risk to national security

1 or discloses confidential business information
2 that can not be derived from information that
3 is otherwise publicly available and that would
4 cause competitive harm if published.

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

11 (8) ADDITIONAL ISSUES TO BE CONSIDERED.—
12 In promulgating the regulations under section
13 201(c)(1) and implementing the database, the Ad-
14 ministrator shall take into consideration a broad
15 range of issues involved in establishing an effective
16 database, including—

17 (A) the data and information systems and
18 measures necessary to identify, track, and
19 verify greenhouse gas emissions in a manner
20 that will encourage private sector trading and
21 exchanges;

22 (B) the greenhouse gas reduction and se-
23 questration measurement and estimation meth-
24 ods and standards applied in other countries, as
25 applicable or relevant;

1 (C) the extent to which available fossil
2 fuels, greenhouse gas emissions, and greenhouse
3 gas production and importation data are ade-
4 quate to implement the database; and

5 (D) the differences in, and potential
6 uniqueness of, the facilities, operations, and
7 business and other relevant practices of persons
8 and entities in the private and public sectors
9 that may be expected to participate in the data-
10 base.

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

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

16 (2) provides entity-by-entity and sector-by-sec-
17 tor analyses of the emissions and emission reduc-
18 tions reported;

19 (3) describes the atmospheric concentrations of
20 greenhouse gases;

21 (4) provides a comparison of current and past
22 atmospheric concentrations of greenhouse gases; and

23 (5) describes the activity during the year cov-
24 ered by the period in the trading of greenhouse gas
25 emission allowances.

1 **SEC. 204. MEASUREMENT AND VERIFICATION.**

2 (a) STANDARDS.—

3 (1) IN GENERAL.—Not later than 1 year after
4 the date of enactment of this Act, the Secretary
5 shall establish by rule, in coordination with the Ad-
6 ministrator, the Secretary of Energy, and the Sec-
7 retary of Agriculture, comprehensive measurement
8 and verification methods and standards to ensure a
9 consistent and technically accurate record of green-
10 house gas emissions, emission reductions, sequestra-
11 tion, and atmospheric concentrations for use in the
12 registry.

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

15 (A) a requirement that a covered entity
16 use a continuous emissions monitoring system,
17 or another system of measuring or estimating
18 emissions that is determined by the Secretary
19 to provide information with precision, reli-
20 ability, accessibility, and timeliness similar to
21 that provided by a continuous emissions moni-
22 toring system where technologically feasible;

23 (B) establishment of standardized meas-
24 urement and verification practices for reports
25 made by all entities participating in the reg-
26 istry, taking into account—

1 (i) protocols and standards in use by
2 entities requiring or desiring to participate
3 in the registry as of the date of develop-
4 ment of the methods and standards under
5 paragraph (1);

6 (ii) boundary issues, such as leakage;

7 (iii) avoidance of double counting of
8 greenhouse gas emissions and emission re-
9 ductions;

10 (iv) protocols to prevent a covered en-
11 tity from avoiding the requirements of this
12 Act by reorganization into multiple entities
13 that are under common control; and

14 (v) such other factors as the Sec-
15 retary, in consultation with the Adminis-
16 trator, determines to be appropriate;

17 (C) establishment of methods of—

18 (i) estimating greenhouse gas emis-
19 sions, for those cases in which the Sec-
20 retary determines that methods of moni-
21 toring, measuring or estimating such emis-
22 sions with precision, reliability, accessi-
23 bility, and timeliness similar to that pro-
24 vided by a continuous emissions monitoring

1 system are not technologically feasible at
2 present; and

3 (ii) reporting the accuracy of such es-
4 timations;

5 (D) establishment of measurement and
6 verification standards applicable to actions
7 taken to reduce, avoid, or sequester greenhouse
8 gas emissions;

9 (E) in coordination with the Secretary of
10 Agriculture, standards to measure the results of
11 the use of carbon sequestration and carbon re-
12 capture technologies, including—

13 (i) soil carbon sequestration practices;

14 and

15 (ii) forest preservation and reforest-
16 ation activities that adequately address the
17 issues of permanence, leakage, and
18 verification;

19 (E) establishment of such other measure-
20 ment and verification standards as the Sec-
21 retary, in consultation with the Secretary of Ag-
22 riculture, the Administrator, and the Secretary
23 of Energy, determines to be appropriate;

24 (F) establishment of standards for obtain-
25 ing the Secretary's approval of the suitability of

1 geological storage sites that include evaluation
2 of both the geology of the site and the entity's
3 capacity to manage the site; and

4 (G) establishment of other features that,
5 as determined by the Secretary, will allow enti-
6 ties to adequately establish a fair and reliable
7 measurement and reporting system.

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

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

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

16 (2) after the 90-day period referred to in para-
17 graph (1), in coordination with the Secretary of En-
18 ergy, the Secretary of Agriculture, and the Adminis-
19 trator, adopt the methods and standards developed
20 under subsection (a) for use in implementing the
21 database.

22 (d) EXPERTS AND CONSULTANTS.—

23 (1) IN GENERAL.—The Secretary may obtain
24 the services of experts and consultants in the private
25 and nonprofit sectors in accordance with section

1 3109 of title 5, United States Code, in the areas of
 2 greenhouse gas measurement, certification, and
 3 emission trading.

4 (2) AVAILABLE ARRANGEMENTS.—In obtaining
 5 any service described in paragraph (1), the Sec-
 6 retary may use any available grant, contract, cooper-
 7 ative agreement, or other arrangement authorized by
 8 law.

9 **TITLE III—MARKET-DRIVEN**
 10 **GREENHOUSE GAS REDUCTIONS**

11 **SUBTITLE A—EMISSION REDUCTION REQUIREMENTS;**
 12 **USE OF TRADEABLE ALLOWANCES**

13 **SEC. 301. COVERED ENTITIES MUST SUBMIT ALLOWANCES**
 14 **FOR EMISSIONS.**

15 (a) IN GENERAL.—Beginning with calendar year
 16 2010—

17 (1) each covered entity in the electric genera-
 18 tion, industrial, and commercial sectors shall submit
 19 to the Administrator one tradeable allowance for
 20 every metric ton of greenhouse gases, measured in
 21 units of carbon dioxide equivalents, that it emits
 22 from stationary sources, except those described in
 23 paragraph (2);

24 (2) each producer or importer of
 25 hydrofluorocarbons, perfluorocarbons, or sulfur

1 hexafluoride that is a covered entity shall submit to
2 the Administrator one tradeable allowance for every
3 metric ton of hydrofluorocarbons, perfluorocarbons,
4 or sulfur hexafluoride, measured in units of carbon
5 dioxide equivalents; that it produces or imports and
6 that will ultimately be emitted in the United States,
7 as determined by the Administrator under sub-
8 section (d) and

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

16 (b) DETERMINATION OF TRANSPORTATION SECTOR
17 AMOUNT.—For the transportation sector, the Adminis-
18 trator shall determine the amount of greenhouse gases,
19 measured in units of carbon dioxide equivalents, that will
20 be emitted when petroleum products are used for trans-
21 portation.

22 (c) EXCEPTION FOR CERTAIN DEPOSITED EMIS-
23 SIONS.—Notwithstanding subsection (a), a covered entity
24 is not required to submit a tradeable allowance for any
25 amount of greenhouse gas that would otherwise have been

1 emitted from a facility under the ownership or control of
2 that entity if—

3 (1) the emission is deposited in a geological
4 storage facility approved by the Administrator under
5 section 204(a)(2)(F); and

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

9 (d) DETERMINATION OF HYDROFLUOROCARBON,
10 PERFLUOROCARBON, AND SULFUR HEXAFLUORIDE
11 AMOUNT.—The Administrator shall determine the
12 amounts of hydrofluorocarbons, perfluorocarbons, or sul-
13 fur hexafluoride, measured in units of carbon dioxide
14 equivalents, that will be deemed to be emitted for purposes
15 of this Act.

16 **SEC. 302. COMPLIANCE.**

17 (a) IN GENERAL.—

18 (1) SOURCE OF TRADEABLE ALLOWANCES
19 USED.—A covered entity may use a tradeable allow-
20 ance to meet the requirements of this section with-
21 out regard to whether the tradeable allowance was
22 allocated to it under subtitle B or acquired from an-
23 other entity or the Climate Change Credit Corpora-
24 tion established under section 351.

1 (2) VERIFICATION BY ADMINISTRATOR.—At
2 various times during each year, the Administrator
3 shall determine whether each covered entity has met
4 the requirements of this section. In making that de-
5 termination, the Administrator shall—

6 (A) take into account the tradeable allow-
7 ances submitted by the covered entity to the
8 Administrator; and

9 (B) retire the serial number assigned to
10 each such tradeable allowance.

11 (b) ALTERNATIVE MEANS OF COMPLIANCE.—For the
12 years 2010 and after, a covered entity may satisfy up to
13 15 percent of its total allowance submission requirement
14 under this section by—

15 (1) submitting tradeable allowances from an-
16 other nation’s market in greenhouse gas emissions
17 if—

18 (A) the Secretary determines that the
19 other nation’s system for trading in greenhouse
20 gas emissions is complete, accurate, and trans-
21 parent and reviews that determination at least
22 once every 5 years;

23 (B) the other nation has adopted enforce-
24 able limits on its greenhouse gas emissions

1 which the tradeable allowances were issued to
2 implement; and

3 (C) the covered entity certifies that the
4 tradeable allowance has been retired unused in
5 the other nation's market;

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

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

14 (4) submitting credits obtained from the Ad-
15 ministrator under section 303.

16 (c) DEDICATED PROGRAM FOR SEQUESTRATION IN
17 AGRICULTURAL SOILS.—If a covered entity chooses to
18 satisfy 15 percent of its total allowance submission re-
19 quirements under the provisions of subsection (b), it shall
20 satisfy at least 01.5 percent of its total allowance submis-
21 sion requirement by submitting registered net increases in
22 sequestration in agricultural soils, as registered in the
23 database, adjusted, if necessary, to comply with the ac-
24 counting standards and methods established under section
25 371.

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

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

4 (1) receive a credit in the current calendar year
5 for anticipated reductions in emissions in a future
6 calendar year; and

7 (2) use the credit in lieu of a tradeable allow-
8 ance to meet the requirements of this Act for the
9 current calendar year, subject to the limitation im-
10 posed by section 302(b).

11 (b) DETERMINATION OF TRADEABLE ALLOWANCE
12 CREDITS.—The Administrator may make credits available
13 under subsection (a) only for anticipated reductions in
14 emissions that—

15 (1) are attributable to the realization of capital
16 investments in equipment, the construction, recon-
17 struction, or acquisition of facilities, or the deploy-
18 ment of new technologies—

19 (A) for which the covered entity has exe-
20 cuted a binding contract and secured, or ap-
21 plied for, all necessary permits and operating or
22 implementation authority;

23 (B) that will not become operational within
24 the current calendar year; and

25 (C) that will become operational and begin
26 to reduce emissions from the covered entity

1 within 5 years after the year in which the credit
2 is used; and

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

5 (c) CARRYING COST.—If a covered entity uses a cred-
6 it under this section to meet the requirements of this Act
7 for a calendar year (referred to as the use year), the
8 tradeable allowance requirement for the year from which
9 the credit was taken (referred to as the source year) shall
10 be increased by an amount equal to—

11 (1) 10 percent for each credit borrowed from
12 the source year; multiplied by

13 (2) the number of years beginning after the use
14 year and before the source year.

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

19 (e) FAILURE TO ACHIEVE REDUCTIONS GENERATING
20 CREDIT.—If a covered entity that uses a credit under this
21 section fails to achieve the anticipated reduction for which
22 the credit was granted for the year from which the credit
23 was taken, then—

24 (1) the covered entity's requirements under this
25 Act for that year shall be increased by the amount

1 of the credit, plus the amount determined under
2 subsection (c);

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

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

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

10 (a) IN GENERAL.—Tradeable allowances may be sold,
11 exchanged, purchased, retired, or used as provided in this
12 section.

13 (b) INTERSECTOR TRADING.—Covered entities may
14 purchase or otherwise acquire tradeable allowances from
15 other covered sectors to satisfy the requirements of section
16 301.

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

1 (d) BANKING OF TRADEABLE ALLOWANCES.—Not-
2 withstanding the requirements of section 301, a covered
3 entity that has more than a sufficient amount of tradeable
4 allowances to satisfy the requirements of section 301, may
5 refrain from submitting a tradeable allowance to satisfy
6 the requirements in order to sell, exchange, or use the
7 tradeable allowance in the future.

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

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

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

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

1 SUBTITLE B—ESTABLISHMENT AND ALLOCATION OF
2 TRADEABLE ALLOWANCES

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

4 (a) IN GENERAL.—The Administrator shall promul-
5 gate regulations to establish tradeable allowances, denomi-
6 nated in units of carbon dioxide equivalents, for calendar
7 years beginning after 2009, equal to—

8 (1) 5896 million metric tons, measured in units
9 of carbon dioxide equivalents, reduced by

10 (2) the amount of emissions of greenhouse
11 gases in calendar year 2000 from non-covered enti-
12 ties.

13 (b) SERIAL NUMBERS.—The Administrator shall as-
14 sign a unique serial number to each tradeable allowance
15 established under subsection (a), and shall take such ac-
16 tion as may be necessary to prevent counterfeiting of
17 tradeable allowances.

18 (c) NATURE OF TRADEABLE ALLOWANCES.—A
19 tradeable allowance is not a property right, and nothing
20 in this title or any other provision of law limits the author-
21 ity of the United States to terminate or limit a tradeable
22 allowance.

23 (d) NON-COVERED ENTITY.—

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

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

9 (B) is not a covered entity.

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

18 **SEC. 332. DETERMINATION OF TRADEABLE ALLOWANCE**

19 **ALLOCATIONS.**

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

21 (1) the amount of tradeable allowances to be al-
22 located to each covered sector of that sector's allot-
23 ments; and

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

4 (b) ALLOCATION FACTORS.—In making the deter-
5 mination required by subsection (a), the Secretary shall
6 consider—

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

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

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

13 (4) the effects of the allocations in terms of eco-
14 nomic efficiency;

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

17 (6) the degree to which the amount of alloca-
18 tions to the covered sectors should decrease over
19 time; and

20 (7) the need to maintain the international com-
21 petitiveness of United States manufacturing and
22 avoid the additional loss of United States manufac-
23 turing jobs.

24 (c) ALLOCATION RECOMMENDATIONS AND IMPLE-
25 MENTATION.—Before allocating or providing tradeable al-

1 lowances under subsection (a) and within 24 months after
2 the date of enactment of this Act, the Secretary shall sub-
3 mit the determinations under subsection (a) to the Senate
4 Committee on Commerce, Science, and Transportation,
5 the Senate Committee on Environment and Public Works,
6 the House of Representatives Committee on Science, and
7 the House of Representatives Committee on Energy and
8 Commerce. The Secretary's determinations under para-
9 graph (1), including the allocations and provision of
10 tradeable allowances pursuant to that determination, are
11 deemed to be a major rule (as defined in section 804(2)
12 of title 5, United States Code), and subject to the provi-
13 sions of chapter 8 of that title.

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

15 (a) IN GENERAL.—Beginning with calendar year
16 2010 and after taking into account any initial allocations
17 under section 335, the Administrator shall—

18 (1) allocate to each covered sector that sector's
19 allotments determined by the Administrator under
20 section 332 (adjusted for any such initial allocations
21 and the allocation to the Climate Change Credit
22 Corporation established under section 351); and

23 (2) allocate to the Climate Change Credit Cor-
24 poration established under section 351 the tradeable
25 allowances allocable to that Corporation.

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

5 (1) encourage investments that increase the ef-
6 ficiency of the processes that produce greenhouse
7 gas emissions;

8 (2) minimize the costs to the government of al-
9 locating the tradeable allowances;

10 (3) not penalize a covered entity for emissions
11 reductions made before 2010 and registered with the
12 database; and

13 (4) provide sufficient allocation for new en-
14 trants into the sector.

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

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

1 (e) SPECIAL RULE FOR ALLOCATION WITHIN THE
2 TRANSPORTATION SECTOR.—The Administrator shall al-
3 locate the tradeable allowances for the transportation sec-
4 tor to petroleum refiners or importers that produce or im-
5 port petroleum products that will be used as fuel for trans-
6 portation.

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

16 (g) EARLY AUCTION FOR TECHNOLOGY DEPLOY-
17 MENT AND DISSEMINATION.—

18 (1) IN GENERAL.—Within 1 year after the date
19 of enactment of this Act, the Administrator, in con-
20 sultation with the Secretary of Energy and the Sec-
21 retary of Commerce, shall allocate tradeable allow-
22 ances by the Climate Change Credit Corporation for
23 auction before 2010. The Climate Change Credit
24 Corporation shall use the proceeds of the auction,
25 together with any funds received as reimbursements

1 under subtitle C of title IV of this Act, to support
2 the programs established by that subtitle until the
3 secretary of Energy and the Corporation jointly de-
4 termine that the purposes of those programs have
5 been accomplished. The Corporation shall also use
6 the proceeds of the auction to support the programs
7 established by subtitle D of title IV of this Act until
8 2010.

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

14 (A) the expected market value of tradeable
15 allowances for auction;

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

18 (C) the repayment provisions of those pro-
19 grams; and

20 (D) the allocation factors in section
21 332(b).

22 (3) LIMITATION.—In allocating tradeable allow-
23 ances under paragraph (1) the Administrator shall
24 take into account the purposes of section 331 and

1 the impact, if any, the allocation under paragraph
2 (1) may have on achieving those purposes.

3 (h) ALLOCATION TO COVERED ENTITIES IN STATES
4 ADOPTING MANDATORY GREENHOUSE GAS EMISSIONS
5 REDUCTION PROGRAMS.—For a covered entity operating
6 in any State that has adopted a legally binding and en-
7 forceable program to achieve and maintain reductions that
8 are consistent with, or more stringent than, reductions
9 mandated by this Act, and which requirements are effec-
10 tive prior to 2010, the Administrator shall consider such
11 binding state actions in making the final determination
12 of allocation to such covered entities.

13 **SEC. 334. ENSURING TARGET ADEQUACY.**

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

19 (1) to re-evaluate the levels established by that
20 subsection, after taking into account the best avail-
21 able science and the most currently available data,
22 and

23 (2) to re-evaluate the environmental and public
24 health impacts of specific concentration levels of
25 greenhouse gases,

1 to determine whether the allowances established by sub-
2 section (a) continue to be consistent with the objective of
3 the United Nations' Framework Convention on Climate
4 Change of stabilizing levels of greenhouse gas emissions
5 at a level that will prevent dangerous anthropogenic inter-
6 ference with the climate system.

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

17 **SEC. 335. INITIAL ALLOCATIONS FOR EARLY PARTICIPA-**
18 **TION AND ACCELERATED PARTICIPATION.**

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

21 (1) to any covered entity an amount of
22 tradeable allowances equivalent to the amount of
23 greenhouse gas emissions reductions registered by
24 that covered entity in the national greenhouse gas
25 database if—

1 (A) the covered entity has requested to use
2 the registered reduction in the year of alloca-
3 tion;

4 (B) the reduction was registered prior to
5 2010; and

6 (C) the Administrator retires the unique
7 serial number assigned to the reduction under
8 section 201(c)(3); and

9 (2) to any covered entity that has entered into
10 an accelerated participation agreement under section
11 336, such tradeable allowances as the Administrator
12 has determined to be appropriate under that section.

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

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

22 (a) IN GENERAL.—If a covered entity executes an
23 agreement with the Administrator under which it agrees
24 to reduce its level of greenhouse gas emissions to a level
25 no greater than the level of its greenhouse gas emissions

1 for calendar year 1990 by the year 2010, then, for the
2 6-year period beginning with calendar year 2010, the Ad-
3 ministrator shall—

4 (1) provide additional tradeable allowances to
5 that entity when allocating allowances under section
6 334 in order to recognize the additional emissions
7 reductions that will be required of the covered entity;

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

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

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

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

1 (b) TERMINATION.—An entity that executes an
2 agreement described in subsection (a) may terminate the
3 agreement at any time.

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

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

11 (2) any tradeable allowances submitted there-
12 after shall be counted first against the increase in
13 those requirements.

14 SUBTITLE C—CLIMATE CHANGE CREDIT CORPORATION

15 **SEC. 351. ESTABLISHMENT.**

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

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

24 (c) BOARD OF DIRECTORS.—The Corporation shall
25 have a board of directors of 5 individuals who are citizens

1 of the United States, of whom 1 shall be elected annually
2 by the board to serve as chairman. No more than 3 mem-
3 bers of the board serving at any time may be affiliated
4 with the same political party. The members of the board
5 shall be appointed by the President of the United States,
6 by and with the advice and consent of the Senate and shall
7 serve for terms of 5 years.

8 **SEC. 352. PURPOSES AND FUNCTIONS.**

9 (a) **TRADING.**—The Corporation—

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

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

16 (3) may not retire tradeable allowances unused.

17 (b) **USE OF TRADEABLE ALLOWANCES AND PRO-**
18 **CEEDS.**—

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

1 (A) may be obtained by buy-down, subsidy,
2 negotiation of discounts, consumer rebates, or
3 otherwise;

4 (B) shall be, as nearly as possible, equi-
5 tably distributed across all regions of the
6 United States; and

7 (C) may include arrangements for pref-
8 erential treatment to consumers who can least
9 afford any such increased costs.

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

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

19 (i) to provide training, adjustment as-
20 sistance, and employment services to dis-
21 located workers; and

22 (ii) to make income-maintenance and
23 needs-related payments to dislocated work-
24 ers; and

1 (B) grants to State and local governments
2 to assist communities in attracting new employ-
3 ers or providing essential local government serv-
4 ices.

5 (3) PHASE-OUT OF TRANSITION ASSISTANCE.—
6 The percentage allocated by the Corporation under
7 paragraph (2)—

8 (A) shall be 20 percent for 2010;

9 (B) shall be reduced by 2 percentage
10 points each year thereafter; and

11 (C) may not be reduced below zero.

12 (4) ADAPTATION AND MITIGATION ASSISTANCE
13 FOR LOW-INCOME PERSONS AND COMMUNITIES.—
14 The Corporation shall allocate at least 10 percent of
15 the proceeds derived from its trading activities to
16 funding climate change adaptation and mitigation
17 programs to assist low-income populations identified
18 in the report submitted under section 106(b) as hav-
19 ing particular needs in addressing the impact of cli-
20 mate change.

21 (5) ADAPTATION ASSISTANCE FOR FISH AND
22 WILDLIFE HABITAT.—The Corporation shall fund ef-
23 forts to strengthen and restore habitat that improves
24 the ability of fish and wildlife to adapt successfully
25 to climate change. The Corporation shall deposit the

1 proceeds from no less than 10 percent of the total
 2 allowances allocated to it in the wildlife restoration
 3 fund subaccount known as the Wildlife Conservation
 4 and Restoration Account established under section 3
 5 of the Pittman-Robertson Wildlife Restoration Act
 6 (16 U.S.C. 669b). Amounts deposited in the sub-
 7 account under this paragraph shall be available
 8 without further appropriation for obligation and ex-
 9 penditure under that Act.

10 (6) TECHNOLOGY DEPLOYMENT PROGRAMS.—

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

19 SUBTITLE D—SEQUESTRATION ACCOUNTING;

20 PENALTIES

21 **SEC. 371. SEQUESTRATION ACCOUNTING.**

22 (a) SEQUESTRATION ACCOUNTING.—If a covered en-
 23 tity uses a registered net increase in sequestration to sat-
 24 isfy the requirements of section 301 for any year, that
 25 covered entity shall submit information to the Adminis-

1 trator every 5 years thereafter sufficient to allow the Ad-
2 ministrator to determine, using the methods and stand-
3 ards created under section 204, whether that net increase
4 in sequestration still exists. Unless the Administrator de-
5 termines that the net increase in sequestration continues
6 to exist, the covered entity shall offset any loss of seques-
7 tration by submitting additional tradeable allowances of
8 equivalent amount in the calendar year following that de-
9 termination.

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

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

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

1 (2) If the range of possible amounts of net in-
2 crease in sequestration for a particular class of se-
3 questration project is more than 10 percent of the
4 median of that range, the amount of sequestration
5 awarded shall be equal to the fifth percentile of that
6 range.

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

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

16 **SEC. 372. PENALTIES.**

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

1 **TITLE IV—INNOVATION AND**
2 **COMPETITIVENESS**

3 **SEC. 401. FINDINGS.**

4 The Congress finds the following:

5 (1) Innovation, the process that ultimately pro-
6 vides new and improved products, manufacturing
7 processes, and services, is the basis for technological
8 progress. This technological advancement is a key
9 element of sustained economic growth.

10 (2) The innovation economy is fundamentally
11 different from the industrial or even the information
12 economy. It requires a new vision and new ap-
13 proaches.

14 (3) Changing innovation processes and the evo-
15 lution of the relative contribution made by the pri-
16 vate and public sectors have emphasized the need for
17 strong industry-science linkages.

18 (4) Patent regimes play an increasingly complex
19 role in encouraging innovation, disseminating sci-
20 entific and technical knowledge, and enhancing mar-
21 ket entry and firm creation.

22 (5) Increasing participation and maintaining
23 quality standards in tertiary education in science
24 and technology are imperative to meet growing de-

1 mand for workers with scientific and technological
2 knowledge and skills.

3 (6) Research, innovation, and human capital
4 are our principal strengths. By sustaining United
5 States investments in research and finding collabo-
6 rative arrangements to leverage existing resources
7 and funds in a scarce budget environment, we en-
8 sure that America remains at the forefront of sci-
9 entific and technological capability.

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

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

24 (9) The United States lacks a national innova-
25 tion strategy and agenda, including an aggressive

1 public policy strategy that energizes the environment
2 for national innovation, and no Federal agency is re-
3 sponsible for developing national innovation policy.

4 SUBTITLE A—INNOVATION INFRASTRUCTURE

5 **SEC. 421. THE INNOVATION ADMINISTRATION.**

6 (a) IN GENERAL.—Section 5 of the Stevenson-
7 Wydler Technology Innovation Act of 1990 (15 U.S.C.
8 3704) is amended—

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

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

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

15 (4) by striking “Technology” each place it ap-
16 pears in subsection (b) and in subsection (c)(1) and
17 inserting “Innovation”;

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

22 (6) by adding at the end of subsection (c) the
23 following:

24 “(2) SPECIFIC INNOVATION-RELATED DU-
25 TIES.—

1 “(A) IN GENERAL.—The Secretary,
2 through the Under Secretary, shall—

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

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

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

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

1 Change Credit Corporation, for the Cli-
2 mate Technology Challenge Program under
3 section 491, addressing technology prior-
4 ities, total funding, opportunities for Fed-
5 eral procurement, and other issues;

6 “(v) review and evaluate on a con-
7 tinuing basis—

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

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

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

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

1 “(vii) gather information about the
2 implementation, effectiveness, and impact
3 of the deployed climate change related
4 technologies based on metrics developed
5 under clause (iii);

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

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

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

23 “(xi) conduct economic analysis in
24 support of climate change technology de-
25 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 mittee to, or in any similar capacity with a cor-
2 poration, partnership, joint venture, or other
3 business enterprise for a period of not more
4 than 5 years in order to provide advice and
5 counsel on ways to improve the diffusion and
6 use of an invention or other intellectual prop-
7 erty of a Federal laboratory.

8 “(B) QUALIFYING INVESTMENT.—Under
9 the authorization, an employee authorized to
10 serve on the board of directors of a corporation
11 may purchase and hold the number of quali-
12 fying shares of stock needed to serve as a mem-
13 ber of that board.

14 “(C) PARTICIPATION IN CERTAIN PRO-
15 CEEDINGS.—An employee authorized under
16 subparagraph (A) may not participate in any
17 grant evaluation, contract negotiation, or other
18 proceeding in which the corporation, partner-
19 ship, joint venture, or other business enterprise
20 has an interest during the authorization pe-
21 riod.”.

22 **SEC. 425. INTERDISCIPLINARY RESEARCH AND COMMERCIALIZATION.**
23

24 (a) IN GENERAL.—The Director of the National
25 Science Foundation shall develop and implement a plan

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 capae-
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.

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

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 redesi-

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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