

# CCSReg Project



## Model Legislation: The Carbon Capture and Sequestration Regulatory Act of 2010

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## About the Model Legislation

The policy briefs developed by the CCSReg Project, available at <http://www.ccsreg.org>, recommend statutory and regulatory actions that would enable large-scale use of CCS to reduce emissions of carbon dioxide. We have developed the following draft model legislative language in order to clarify the recommendations in these policy briefs.

The following model legislative language can be used freely, with or without attribution, for development of legislative and regulatory proposals.

We welcome comments on any aspect of this draft and specifically invite comments as to its consistency with and adequacy for, implementation of the measures recommended in our policy briefs. Please direct any comments on this draft to Sean McCoy at [stmccoy@cmu.edu](mailto:stmccoy@cmu.edu).

## About the CCSReg Project

The CCSReg Project is an interdisciplinary project which aims to design and facilitate the rapid adoption of a U.S. regulatory environment for the capture, transport and geological sequestration of carbon dioxide. Our objective is to assure that CCS will be done in a manner that is safe, environmentally sound, affordable, compatible with evolving international carbon control regimes (including emissions trading) and socially equitable.

The project is anchored in the Department of Engineering and Public Policy at Carnegie Mellon University. Other members of the project team are located at the Hubert H. Humphrey Institute of Public Affairs at the University of Minnesota, the Institute for Energy and the Environment at the Vermont Law School, and the Washington, DC law firm of Van Ness Feldman.

This project was made possible through support from the Doris Duke Charitable Foundation (Grant 2007117) to Carnegie Mellon University, Department of Engineering and Public Policy for the project, "Regulation of Capture and Deep Geological Sequestration of Carbon Dioxide". Additional funding for some analyses is provided by the National Science Foundation (SES-0345798) through the Climate Decision Making Center and the Carnegie Mellon Electricity Industry Center.

More information on the CCSReg Project is available at: <http://www.ccsreg.org/>



## A BILL

To establish a comprehensive system for the safe and effective transport and geologic sequestration of carbon dioxide.

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

3           **SECTION 1. SHORT TITLE.**

4           This Act may be cited as the "Carbon Capture and Sequestra-  
5           tion Regulatory Act of 2010".

6           **SEC. 2. TABLE OF CONTENTS.**

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1 **SEC. 3. FINDINGS**

2           The Congress finds that facilitating the sequestration of carbon  
3 dioxide in appropriate geologic formations in order to mitigate the de-  
4 trimental effects of climate change is in the public interest. The Con-  
5 gress further finds that a nationally-coordinated flexible and adaptive  
6 regulatory approach is needed to assure that such sequestration is un-  
7 dertaken in a manner that is safe, environmentally sound, affordable,  
8 socially equitable, and compatible with evolving international CO<sub>2</sub>  
9 control regimes.

10 **SEC. 4. DEFINITIONS**

11           For the purposes of this Act:

12           (a) GEOLOGIC SEQUESTRATION FACILITY.—The term "geologic  
13 sequestration facility" or "GS facility" means a facility that receives  
14 and permanently stores or sequesters carbon dioxide in a geologic

1 formation. Such term includes an enhanced hydrocarbon recovery op-  
2 eration only if a CO<sub>2</sub> injection permit has been issued for such project.

3 (b) LONG-TERM STEWARDSHIP.—The term "long-term steward-  
4 ship" means the monitoring, measurement, verification, and remedia-  
5 tion and related activities associated with a GS project after issuance  
6 of a certificate of closure.

7 (c) CARBON DIOXIDE.—The term "carbon dioxide" or "CO<sub>2</sub>"  
8 means carbon dioxide that has been captured from the air or from an  
9 emission source, including incidental substances derived from the  
10 source materials and the capture process, and any substances added to  
11 the stream to enable or improve the injection process.

12 (d) ADMINISTRATOR.—The term "Administrator" means the  
13 Administrator of the Environmental Protection Agency.

14 (e) BOARD.—The term "Board" refers to the Federal Geologic  
15 Sequestration Board that is established under title IV of this act.

16 (f) CCS— The term "CCS" refers to carbon capture and se-  
17 questration, which is the process of capture, transport, and geologic  
18 sequestration of CO<sub>2</sub> for the purpose of permanently preventing its re-  
19 lease to the atmosphere.

20 (g) ENHANCED HYDROCARBON RECOVERY— The term "en-  
21 hanced hydrocarbon recovery" or "EHR" means injection of CO<sub>2</sub> for  
22 the purpose of increasing production of oil or natural gas.

23 (h) GEOLOGIC FORMATION.—The term "geologic formation" re-  
24 fers to a body of rock in the subsurface that is distinct from the sur-  
25 rounding rock and is capable of permanently retaining injected carbon  
26 dioxide.

27 (i) PORE SPACE.—The term "pore space" means the voids in a  
28 geologic formation that can contain a fluid.

29 (j) REMEDIATION.—The term "remediation" means any activity  
30 undertaken at any stage during the operation, closure or long-term  
31 stewardship of a sequestration site that is intended to correct a health,



1 safety, or environmental problem with the performance of a site such  
2 as undesired movement of the injected fluid, or possible release of car-  
3 bon dioxide to the atmosphere.

4 (k) SITE OPERATOR—The term "site operator" refers to the  
5 entity responsible for the operation of the geological sequestration fa-  
6 cility.

7 (l) CO<sub>2</sub> PIPELINE.—The term "CO<sub>2</sub> pipeline" means any pipe-  
8 line constructed for, or converted for, use in the transport of carbon  
9 dioxide for purposes of geologic sequestration.

10 **SEC. 5. SEVERABILITY OF PROVISIONS.**

11 If any provision of this act, or the application of any provision  
12 of this act to any person or circumstance, is held invalid, the applica-  
13 tion of such provision to other persons or circumstances and the re-  
14 mainder of this act shall not be affected thereby.

15

1 **TITLE I—CARBON DIOXIDE PIPELINES**

2 **SEC. 101. SITING AND CONSTRUCTION OF CO<sub>2</sub> PIPELINES.**

3 (a) DEFINITIONS.—For purposes of this title:

4 (1) CO<sub>2</sub> PIPELINE PROJECT.—The term "CO<sub>2</sub> pipeline  
5 project" means a project to construct a CO<sub>2</sub> pipeline after the  
6 date of enactment of this section.

7 (2) CERTIFICATED CO<sub>2</sub> PIPELINE.—The term "certificated  
8 CO<sub>2</sub> pipeline" project means a CO<sub>2</sub> pipeline project for which a  
9 certificate has been issued under subsection (b)(3).

10 (3) COMMISSION.—The term "Commission" means the  
11 Federal Energy Regulatory Commission.

12 (b) ELECTIVE PROCEDURE FOR SITING AND CONSTRUCTION OF  
13 CO<sub>2</sub> PIPELINE PROJECTS.—

14 (1) APPLICATION.—Any person may apply to the Commis-  
15 sion for a certificate of public convenience and necessity that  
16 authorizes such person to:

17 (A) construct, acquire or operate a CO<sub>2</sub> pipeline  
18 project, or

19 (B) modify a certificated CO<sub>2</sub> pipeline project.

20 (2) APPLICATION PROCEDURE.—

21 (A) Application for a certificate shall be made in  
22 writing to the Commission, and shall be in such form, con-  
23 tain such information, and notice thereof shall be served  
24 upon such interested parties (including State Commis-  
25 sions), in such manner as the Commission shall, by rule,  
26 require. The Commission shall set the matter for hearing  
27 and shall give notice of the hearing to interested persons;  
28 and the application shall be issued or denied in accordance  
29 with the procedure provided in paragraph (3)

30 (B) Notwithstanding subparagraph (A), the Com-  
31 mission may issue a temporary certificate in cases of emer-

1           gency, to assure maintenance of adequate service or to  
2           serve particular customers, without notice or hearing, pend-  
3           ing the determination on an application for a certificate, and  
4           may by regulation exempt from the requirements of this  
5           subsection acts or operations for which the issuance of a  
6           certificate will not be required in the public interest.

7           (3) GRANT OF CERTIFICATE.—Except in the cases governed  
8           by paragraph (2)(B), a certificate shall be issued to a qualified  
9           applicant therefore, authorizing the whole or any part of the  
10          operation, construction, acquisition, or modification covered by  
11          the application, if it is found that the applicant is able and will-  
12          ing properly to do the acts and to perform the service proposed  
13          and to conform to the provisions of this title and rules of the  
14          Commission thereunder, and that the proposed operation, con-  
15          struction, acquisition, or modification, to the extent authorized  
16          by the certificate, is or will be required by the present or future  
17          public convenience and necessity; otherwise such application  
18          shall be denied. The Commission shall have the power to at-  
19          tach to the issuance of the certificate and to the exercise of the  
20          rights granted thereunder such reasonable terms and conditions  
21          as the public convenience and necessity may require.

22          (4) OPEN ACCESS AND RATE CONDITIONS.—In granting a  
23          certificate under paragraph (3), the Commission shall include  
24          conditions under paragraph (3) that are designed to ensure—

25                  (A) That the capacity of the pipeline is sufficient to  
26                  accommodate all potential shippers that execute legally  
27                  binding undertakings (including adequate collateral or evi-  
28                  dence of creditworthiness) to pay a contractually estab-  
29                  lished rate for requested capacity for a term necessary to  
30                  support financing of the pipeline.

1 (B) That any unused capacity of the pipeline is  
2 made available on a non-discriminatory basis.

3 (C) In cases where the pipeline and the shipper can-  
4 not agree on rates and terms and conditions of service, that  
5 rates and terms and conditions of service are not unreason-  
6 able.

7 The Commission may modify conditions of a certificate if  
8 it determines on the record after hearing that the public conven-  
9 ience and necessity so require.

10 (5) RIGHT OF EMINENT DOMAIN.—When any holder of a  
11 certificate issued under paragraph (3) cannot acquire by con-  
12 tract, or is unable to agree with the owner of property to the  
13 compensation to be paid for, the necessary right-of-way to con-  
14 struct, operate, and maintain the project to which the certificate  
15 relates, and the necessary land or other property necessary to  
16 the proper operation of such project, it may acquire the same  
17 by the exercise of the right of eminent domain in the district  
18 court of the United States for the district in which such proper-  
19 ty may be located, or in the State courts. The practice and pro-  
20 cedure in any action or proceeding for that purpose in the dis-  
21 trict court of the United States shall conform as nearly as may  
22 be with the practice and procedure in similar action or proceed-  
23 ing in the courts of the State where the property is situated.

24 (c) FEDERAL AGENCY COORDINATION.—

25 (1) RIGHTS OF WAY ON FEDERAL LANDS.—In the case of  
26 any CO<sub>2</sub> pipeline project for which an application is filed under  
27 subsection (b)(1) or granted under subsection (b)(3), the Com-  
28 mission shall exercise authority over such project comparable  
29 to that which it exercises under section 15 of the Natural Gas  
30 Act with respect to natural gas pipelines.

1           (2) NEPA REVIEW.—The Commission shall be lead federal  
2           agency for purposes of Federal environmental review and, in  
3           consultation with affected agencies, shall prepare a single envi-  
4           ronmental review document that would be used as the basis for  
5           all decisions under federal law related to the proposed project.

6           (3) ADMINISTRATIVE POWERS OF THE COMMISSION.—The  
7           Commission shall have the same authority under sections 8  
8           through 25 of the Natural Gas Act with respect to certificated  
9           CO<sub>2</sub> pipelines and owners and operators of such pipelines as it  
10          has with respect to natural gas pipelines and natural gas com-  
11          panies.

12   **SEC. 102. SAVINGS PROVISIONS**

13          (a) STATE REGULATION.—Nothing in this title shall modify or  
14          limit State siting and economic regulation of any CO<sub>2</sub> pipeline that is  
15          not a certificated CO<sub>2</sub> pipeline.

16          (b) PIPELINE SAFETY.—Federal pipeline safety regulation under  
17          chapter 601 of title 49, United States Code, applies according to its  
18          terms to CO<sub>2</sub> pipelines, whether or not they are certificated CO<sub>2</sub> pipe-  
19          lines.

1 **TITLE II—ADAPTIVE AND PERFORMANCE-**  
2 **BASED APPROACH**

3 **SEC. 201. NEED FOR AN ADAPTIVE APPROACH TO THE**  
4 **GEOLOGIC SEQUESTRATION OF CARBON**  
5 **DIOXIDE**

6 (a) THE CONGRESS FINDS AND DECLARES:

7 (1) IN GENERAL.—Because at present there is limited expe-  
8 rience with large-scale geologic sequestration of carbon dio-  
9 xide, regulations developed to govern the operation and is-  
10 suance of a certificate of closure, including criteria for a transi-  
11 tion to long-term stewardship, should be periodically reviewed  
12 and revised in light of the accumulated experience from GS  
13 projects operated in the United States and elsewhere. Similarly,  
14 regulatory requirements for any geologic sequestration facility  
15 should be formulated in such a way as to allow the operator of  
16 a project to request a change in the operating permit require-  
17 ments of the project as more site-specific or general informa-  
18 tion is gained over the course of the injection period, provided  
19 that such changes are consistent with the overriding objective  
20 of providing reasonable protection to health, safety and the en-  
21 vironment. Any change that increases the stringency of the  
22 regulations or requirements governing an existing GS that has  
23 received a CO<sub>2</sub> injection permit project should only be adopted  
24 to prevent or mitigate a significant risk to health, safety or the  
25 environment in light of new information and should, to the ex-  
26 tent possible, avoid placing an undue burden on any previously  
27 licensed injection project.

28 (b) DEVELOPMENT OF PERFORMANCE-BASED STANDARDS.—  
29 The objective of standards developed by the Environmental Protection  
30 Agency for permitting and monitoring the operation of GS Projects

1 shall be to assure that these activities are conducted in a manner that  
2 provides reasonable protection to health, safety and the environment.  
3 Similarly, the objective of the standards or criteria developed by the  
4 Federal Geologic Sequestration Board for accepting GS sites into  
5 long-term stewardship and managing those sites once they have en-  
6 tered long-term stewardship shall be to assure that these standards, cri-  
7 teria and management activities continue to provide reasonable protec-  
8 tion to health, safety and the environment. Consistent with those objec-  
9 tives, both the Environmental Protection Agency and the Federal Geo-  
10 logic Sequestration Board shall formulate these standards as perfor-  
11 mance-based standards rather than procedure-based standards to the  
12 extent they deem this to be practicable. In general, the objective of per-  
13 formance-based standards is to provide a greater degree of flexibility  
14 and cost-effectiveness in achieving the safe operation of a GS project.

15 **SEC. 202. CREATION OF A CCS TECHNICAL ADVISORY**  
16 **COMMITTEE OF THE NATIONAL RESEARCH**  
17 **COUNCIL.**

18 (a) FORMATION OF THE TECHNICAL ADVISORY COMMITTEE.—  
19 Within three months of the adoption of this Act, the EPA shall contract  
20 with the National Research Council (NRC) to establish an independent  
21 expert CCS Technical Advisory Committee. Membership of this  
22 committee shall consist of at least nine experts, chosen by the NRC for  
23 their technical expertise in accordance with standard NRC procedures.

24 (b) INITIAL REVIEW.—Within one year of its establishment, the  
25 CCS Technical Advisory Committee of the NRC shall complete a re-  
26 view of the available accumulated data and experience from opera-  
27 tional carbon dioxide sequestration projects in the U.S. and elsewhere,  
28 and publish a summary of its findings together with recommendations,  
29 based on those findings, as to:

30 (1) how regulations and standards for permitting and oper-  
31 ating a carbon dioxide geologic sequestration facility should

1 best be shaped to provide reasonable protection to health, safe-  
2 ty and the environment;

3 (2) the feasibility of adaptive strategies and performance-  
4 based standards that improve the effectiveness of GS opera-  
5 tions with no loss of protection to health, safety and the envi-  
6 ronment; and,

7 (3) research needed to provide the foundation for improv-  
8 ing standards in the future.

9 (c) PERIODIC REVIEW.—Seven years after the Administrator  
10 first promulgates performance-based standards for GS projects, and at  
11 least every seventh year thereafter, the Administrator and the Chair-  
12 person the Federal Geologic Sequestration Board shall jointly request  
13 the CCS Technical Advisory Committee of the NRC be reconvened to:

14 (1) update and evaluate the cumulative experience from all  
15 geologic sequestration facilities operating in the U.S. or else-  
16 where;

17 (2) publish a summary of its findings along with recom-  
18 mendations for any changes in GS regulations it believes are  
19 needed; and ,

20 (3) identify research to provide the foundation for improv-  
21 ing the formulation of standards in the future.

22 (d) FUNDING MECHANISM.—Funding for the first review by the  
23 CCS Technical Advisory Committee of the NRC shall be provided  
24 from the operating budget of the Environmental Protection Agency in  
25 an amount not to exceed \$800,000. Funding for subsequent reviews by  
26 the CCS Technical Advisory Committee shall be provided from, in  
27 amount determined by the Administrator to be appropriate, the carbon  
28 sequestration trust fund established under section 403(d).

29 **SEC. 203. REQUIREMENTS FOR PERIODIC REVIEW AND**  
30 **REVISIONS**



1 (a) PERIODIC REVIEW AND REVISION OF REGULATIONS FOR GS  
2 PROJECTS.—

3 (1) At least once every seven years the Environmental Pro-  
4 tection Agency shall review, and if necessary, revise the details  
5 of the regulations and standards it has promulgated for GS  
6 projects.

7 (2) Three months before undertaking the review noted in  
8 subpart (1), the Administrator of the Environmental Protection  
9 Agency shall publish notice in the Federal Register and provide  
10 an opportunity for public comments to be filed.

11 (3) The Environmental Protection Agency's review shall be  
12 informed by the summary of accumulated experience devel-  
13 oped by the CCS Technical Advisory Committee of the Na-  
14 tional Research Council; by any recommendations that that  
15 Committee may make; and by any public comments received  
16 by the Administrator as a result of the call for public com-  
17 ments. In accordance with the requirements of the Administra-  
18 tive Procedures Act, a description of any resulting changes  
19 shall be published in the Federal Register and adopted only af-  
20 ter public comment and review. As part of this review, and  
21 consistent with the objective of assuring reasonable protection  
22 to health, safety and the environment, the Agency shall consid-  
23 er whether any procedure-based regulation it previously prom-  
24 ulgated should be replaced by a performance-based regulation.

25 (b) PERIODIC REVIEW AND REVISION OF PROCEDURES GOVERN-  
26 ING LONG-TERM STEWARDSHIP.—

27 (1) At least once every seven years the Federal Geologic  
28 Sequestration Board shall review and, if necessary, revise in  
29 light of the recommendations and accumulated experience re-  
30 viewed by the CCS Technical Advisory Committee of the Na-  
31 tional Research Council, the details of its rules for accepting

1           GS projects into long-term stewardship, and its procedures for  
2           monitoring and otherwise managing projects held in long-term  
3           stewardship.

4           (2) Three months before undertaking the review noted in  
5           subpart (1), the Board shall publish notice in the Federal Regis-  
6           ter and provide an opportunity for public comments to be filed.

7           (3) The Board's review shall be informed by the summary  
8           of accumulated experience developed by the CCS Technical  
9           Advisory Committee of the National Research Council; by any  
10          recommendations that Committee should make as part of its  
11          report; and by any public comments received by the Adminis-  
12          trator as a result of the call for public comments. In accordance  
13          with the requirements of section 553 of title 5, United States  
14          Code, a description of any resulting changes shall be published  
15          in the Federal Register and adopted only after public comment  
16          and review. As part of this review, and consistent with the ob-  
17          jective of assuring reasonable protection to health, safety and  
18          the environment, the Board shall consider whether any proce-  
19          dure-based regulation it previously adopted should be replaced  
20          by a performance-based regulation.

21       **SEC. 204. JUDICIAL REVIEW.**

22           Nothing in this title shall affect any otherwise available judicial  
23          review of agency action. This title is intended only to improve the in-  
24          ternal management of the regulation of GS projects, and does not  
25          create any right or benefit, substantive or procedural, enforceable at  
26          law or equity by a party against the United States, its agencies or in-  
27          strumentalities, its officers or employees, or any other person.

1 **TITLE III—PERMITS AND PORE SPACE**  
2 **ACCESS FOR GEOLOGIC SEQUESTRA-**  
3 **TION FACILITIES**

4 **SUBTITLE A—GENERAL**

5 **SEC. 301. DEFINITIONS**

6 For the purposes of this title:

7 (a) INTERSTATE GEOLOGIC SEQUESTRATION FACILITY.—The  
8 term "interstate geologic sequestration facility" means a geologic se-  
9 questration facility that occupies pore space located in more than one  
10 State.

11 (b) SDWA.—The term "SDWA" means the Safe Drinking Wa-  
12 ter Act.

13 (c) UIC.—The term "UIC" means underground injection con-  
14 trol.

15 (d) CO<sub>2</sub> INJECTION PERMIT.—The term "CO<sub>2</sub> Injection Permit"  
16 refers to a UIC permit issued by the UIC CO<sub>2</sub> Regulator under subtitle  
17 B for the permanent geologic sequestration of carbon dioxide.

18 (e) STATE.—The term "State" means a State or an Indian  
19 Tribe, as such terms are defined in the Safe Drinking Water Act.

20 (f) UIC CO<sub>2</sub> REGULATOR.—Except as provided in section  
21 312(f) of this title, the term "UIC CO<sub>2</sub> Regulator" means a State that  
22 that has primary enforcement authority under section 1422 of the  
23 SDWA for the underground injection of carbon dioxide, and the Ad-  
24 ministrator of the Environmental Protection Agency for any other  
25 State.

26 (g) UNDERGROUND SOURCE OF DRINKING WATER.—The term  
27 "underground source of drinking water" means underground water  
28 with less than 10,000 mg/l total dissolved solids.

1    **SUBTITLE B—PERMITS TO CONSTRUCT**  
2            **AND OPERATE GEOLOGIC SEQUES-**  
3            **TRATION FACILITIES**

4    **SEC. 311. PURPOSE.**

5            The purpose of this subtitle is to establish a permitting proce-  
6    dure for the permanent geologic sequestration of carbon dioxide that  
7    balances the need for permanent geologic sequestration of CO<sub>2</sub> with  
8    the need to protect underground drinking water supplies so as to en-  
9    sure the overall safety and protection of human health and the envi-  
10   ronment.

11   **SEC. 312. PERMITTING UNDERGROUND INJECTION OF**  
12            **CARBON DIOXIDE FOR GEOLOGIC SEQUES-**  
13            **TRATION.**

14            (a) CO<sub>2</sub> UIC PROGRAM.—Not later than one year after the date  
15   of enactment of this Act, the Administrator shall promulgate regula-  
16   tions that provide for a comprehensive program for the administration  
17   of permits for underground injection of carbon dioxide for the purpose  
18   of geologic sequestration, and that integrate such program with exist-  
19   ing State and Federal UIC programs.

20            (b) PERMIT REQUIRED.—Except in accordance with a CO<sub>2</sub> in-  
21   jection permit issued by the UIC CO<sub>2</sub> Regulator under subsection (e),  
22   the following shall be unlawful:

23                (1) The construction of any injection well or underground  
24                facility for geologic sequestration, and

25                (2) The underground injection of carbon dioxide for geo-  
26                logic sequestration.

27            (c) PROGRAM REQUIREMENTS.—The regulations under subsec-  
28   tion (a) shall:

1 (1) provide that the UIC CO<sub>2</sub> Regulator shall issue a CO<sub>2</sub>  
2 injection permit in accordance with subsection (e) to any appli-  
3 cant that meets the requirements of this section;

4 (2) require, to the extent practicable, that the UIC CO<sub>2</sub> reg-  
5 ulator take an adaptive and performance-based approach to  
6 permitting the underground injection of carbon dioxide for  
7 permanent geologic sequestration as provided in Title II of this  
8 Act;

9 (3) require that the applicant for the CO<sub>2</sub> injection permit  
10 satisfy the UIC CO<sub>2</sub> Regulator that the underground injection  
11 of carbon dioxide for permanent geologic sequestration will not  
12 endanger drinking water sources, unless the UIC CO<sub>2</sub> Regula-  
13 tor makes a SDWA applicability determination under subsec-  
14 tion (d);

15 (4) require State UIC programs to take into account the ef-  
16 fects that permanent geologic sequestration of CO<sub>2</sub> in the per-  
17 mitting State will have in any other State; and

18 (5) ensure that any State with a reasonable prospect of be-  
19 ing affected by the grant of a CO<sub>2</sub> injection permit by another  
20 State shall have the right to intervene and participate in pro-  
21 ceedings conducted by the permitting State for consideration of  
22 a petition of a permit for underground injection of CO<sub>2</sub> for  
23 permanent geologic sequestration.

24 (6) include requirements for—

25 (A) inspection, monitoring, recordkeeping, and re-  
26 porting for carbon dioxide associated with injection into,  
27 and loss of containment from, sequestration sites that con-  
28 sider:

29 (i) the specific geologic setting,

30 (ii) the design and operation of the sequestration  
31 project,

- 1 (iii) surface features, including political and  
2 property boundaries,
- 3 (iv) other considerations as determined by the  
4 Administrator,
- 5 (B) public participation in the permitting process  
6 that maximizes transparency,
- 7 (C) sharing of data among States, the United States  
8 Geologic Survey, and the Environmental Protection Agen-  
9 cy, and
- 10 (D) other elements or safeguards necessary to con-  
11 form to the requirements described in subsection (c) of this  
12 section;
- 13 (7) require enhanced hydrocarbon recovery projects to hold  
14 a valid CO<sub>2</sub> injection permit in order to be considered a geolog-  
15 ic sequestration facility for the purposes of any federal green-  
16 house gas emissions reduction program; and
- 17 (8) establish a coordinated approach to certifying and per-  
18 mitting underground injection of CO<sub>2</sub> for permanent geologic  
19 sequestration, taking into account, and reducing redundancy  
20 with, all relevant statutory authorities.
- 21 (d) SDWA DETERMINATION.—
- 22 (1) DEFINITION.—For purposes of this section, a SDWA  
23 determination is a determination that one or more provisions of  
24 Part C of the Safe Drinking Water Act are inapplicable in  
25 whole or in part to a specific source of underground drinking  
26 water affected by the CO<sub>2</sub> injection permit.
- 27 (2) DETERMINATION.—The UIC CO<sub>2</sub> Regulator may make  
28 a SDWA determination only if the regulator finds that the pub-  
29 lic benefit of geologic sequestration of carbon dioxide out-  
30 weighs the protection of the underground drinking water source  
31 at issue after carefully balancing the goals of:

1 (A) minimizing the present and future threats to  
2 human health and the environment imposed by global cli-  
3 mate change with

4 (B) the protection and safety of underground drink-  
5 ing water sources.

6 (3) FACTORS.—In making a SDWA determination, the CO<sub>2</sub>  
7 Regulator shall consider:

8 (A) direct and indirect impacts to underground  
9 sources of drinking water and human health and the envi-  
10 ronment resulting from geologic sequestration of carbon  
11 dioxide,

12 (B) local impacts of potential surface leakage of se-  
13 questered carbon dioxide, assessing both probability and  
14 magnitude of potential harm,

15 (C) the nation's need to deploy and use CCS tech-  
16 nology to control GHG emissions. such other factors as the  
17 UIC CO<sub>2</sub> regulator determines to be relevant.

18 (e) OPEN APPLICATION FOR AND ISSUANCE OF CO<sub>2</sub> INJECTION  
19 PERMITS.—

20 (1) Application for a CO<sub>2</sub> injection permit shall be made in  
21 writing to the UIC CO<sub>2</sub> Regulator. This application shall be ve-  
22 rified under oath and be in such form and contain such infor-  
23 mation as the Administrator shall, by regulation, require.

24 (2) If a geologic sequestration facility developer applies for  
25 CO<sub>2</sub> injection permit under this subtitle, the UIC CO<sub>2</sub> Regula-  
26 tor shall:

27 (A) publish in the Federal Register and provide  
28 such additional public notice as the UIC CO<sub>2</sub> Regulator  
29 shall require of the permit application, and

1 (B) afford a period of 90 days for other geologic se-  
2 questration facility developers to intervene and file compet-  
3 ing applications, such that:

4 (i) Any party wishing to contend that the grant  
5 of a CO<sub>2</sub> injection permit under this subtitle and, if  
6 applicable, a pore space permit under subtitle C  
7 may impair its own ability to develop and operate  
8 an alternative and competing geologic sequestration  
9 facility, or impair the operation of a currently oper-  
10 ating geologic sequestration facility, shall be en-  
11 titled to equal consideration with the original appli-  
12 cant if it files a competing application within 90  
13 days of public notice for the original application.

14 (ii) If a competing application is filed more than  
15 90 days after the original application, the original  
16 application shall be considered and resolved upon  
17 its own merits without the necessity of considera-  
18 tion of the secondary competing application.

19 (3) The UIC CO<sub>2</sub> Regulator shall have the authority to at-  
20 tach to the issuance of the CO<sub>2</sub> injection permit, and to exercise  
21 the rights and privileges granted thereunder, such terms and  
22 conditions as are reasonable and necessary to effectuate the  
23 purposes of this title.

24 (4) The UIC CO<sub>2</sub> Regulator shall grant applications under  
25 this subsection upon a finding that the applicant is able and  
26 willing to properly do the acts and perform the service pro-  
27 posed in good faith, meet all relevant statutory and regulatory-  
28 imposed financial responsibilities and requirements, and con-  
29 form to the requirements of this title, the rules thereunder, and  
30 the conditions of the CO<sub>2</sub> injection permit; otherwise, such ap-  
31 plication shall be denied.



1 (5) The UIC CO<sub>2</sub> Regulator may, after notice and opportu-  
2 nity for comment, revoke in whole or in part a UIC CO<sub>2</sub> injec-  
3 tion permit issued under this section if the Regulator deter-  
4 mines that the permit-holder has failed to comply with the re-  
5 quirements of this title, the rules thereunder, or conditions of  
6 the permit.

7 (6) EPA shall have authority to revoke or override any CO<sub>2</sub>  
8 injection permit issued by a State UIC CO<sub>2</sub> Regulator if:

9 (A) the State UIC CO<sub>2</sub> Regulator fails to take into  
10 account the effects that permanent geologic sequestration  
11 of CO<sub>2</sub> in the permitting State will have in any other State;  
12 and

13 (B) the permanent geologic sequestration of CO<sub>2</sub> as  
14 authorized by the permit is determined to substantially en-  
15 danger underground sources of drinking water (unless a  
16 SDWA determination is made under subsection (d)) and/or  
17 pose a threat to human health and the environment in  
18 neighboring States.

19 (f) INTERSTATE GEOLOGIC SEQUESTRATION FACILITIES.—

20 (1) States may enter into agreements with respect to permit-  
21 ting and regulating a geologic sequestration facility that will  
22 require the use of geologic formations and pore space located  
23 in more than one State.

24 (2) The EPA is the UIC CO<sub>2</sub> Regulator for any interstate  
25 geologic sequestration facility if the States where the project is  
26 located fail to enter into an agreement with respect to permit-  
27 ting and regulating the interstate project.

28 **SEC. 313. CONFORMING AMENDMENTS.**

29 (a) ENERGY INDEPENDENCE AND SECURITY ACT.—  
30 The first sentence of section 706 of Title VII of the Energy Indepen-  
31 dence and Security Act (42 U.S.C. § 17254) is amended—

1 (1) by striking out "The" at the beginning of the first sen-  
2 tence and inserting "Subject to Title III of the Carbon Capture  
3 and Sequestration Regulatory Act of 2010, the"; and

4 (2) by striking out "Nothing" at the beginning of the second  
5 sentence and inserting "Subject to such title, nothing".

6 (b) SAFE DRINKING WATER ACT.—

7 (1) Section 1421(b)(1) of the Safe Drinking Water Act of  
8 1974 as amended (42 U.S.C. § 300h) is amended by:

9 (A) inserting at the beginning of subparagraph (B)  
10 "except as provided in section 312(d) of the Carbon Cap-  
11 ture and Sequestration Regulatory Act of 2010," and

12 (B) inserting a new subparagraph "(E)", which shall  
13 read "Shall meet all requirements of the regulations in ef-  
14 fect under Title III of the Carbon Capture and Sequestration  
15 Regulatory Act of 2010."

16 (2) Section 1422(b)(1)(A)(i) of the Safe Drinking Water  
17 Act (42 U.S.C. § 300h-1) is amended by inserting at the end  
18 thereof "and Title III of the Carbon Capture and Sequestration  
19 Regulatory Act of 2010."

20 **SUBTITLE C—ACCESS TO PORE SPACE**  
21 **FOR GEOLOGIC SEQUESTRATION**

22 **SEC. 321. PURPOSE.**

23 The purpose of this subtitle is to establish a fair, equitable, and  
24 elective permitting procedure for the allocation, management, and use  
25 of subsurface pore space for permanent geologic sequestration of car-  
26 bon dioxide, thereby reducing carbon dioxide emissions to the atmos-  
27 phere; and, to the maximum extent practicable, protecting private  
28 property interests and preventing subsurface property disputes from  
29 arising.

30 **SEC. 322. DEFINITIONS.**

1 For the purpose of this subtitle:

2 (a) MATERIAL IMPAIRMENT.—The term "material impairment"  
3 means the subsurface interest-holder has suffered actual and substan-  
4 tial damages resulting from the injection or migration of carbon dio-  
5 xide.

6 (b) NON-SPECULATIVE ECONOMIC INTEREST.—The term "non-  
7 speculative economic interest" means the ability to recover actual min-  
8 eral resources or engage in other current or imminent subsurface activ-  
9 ities that have substantial economic value. There is a rebuttable pre-  
10 sumption that use of pore space for which a pore space permit is re-  
11 quired under this title is a speculative interest until such a permit is  
12 issued.

13 (c) PORE SPACE PERMIT.—The term "pore space permit" refers  
14 to a permit issued by the UIC CO<sub>2</sub> Regulator under subtitle C authoriz-  
15 ing the access and use of geologic pore space within the subsurface  
16 project boundary.

17 (d) PREEXISTING INTEREST.—The term "preexisting interest"  
18 means an interest in demonstrated economically-recoverable mineral  
19 resources or in other subsurface activities that are non-speculative  
20 economic interest.

21 (e) SUBSURFACE PROJECT BOUNDARY.—The term "subsurface  
22 project boundary" refers to the ex ante estimated spatial extent of free-  
23 phase injected CO<sub>2</sub>, delineated both by the lateral and vertical bounda-  
24 ries from the time injection commences to the time that free-phase  
25 CO<sub>2</sub> ceases flowing, and taking into account a margin of error in pre-  
26 dictions.

27 (f) SUBSURFACE TRESPASS.—The term "subsurface trespass"  
28 means geologic sequestration by a site operator that results in a physi-  
29 cal invasion of pore space in which the site operator does not have the  
30 requisite ownership interest, easement, or license to occupy.

1    **SEC. 323. MANAGING ACCESS AND USE OF PORE SPACE**  
2                   **FOR PERMANENT GEOLOGIC SEQUESTRA-**  
3                   **TION OF CARBON DIOXIDE.**

4           (a) EFFECT OF CO<sub>2</sub> INJECTION PERMIT.—

5               (1) If a CO<sub>2</sub> injection permit issued to a site operator under  
6               subtitle B is in effect, no permit may be issued to any other  
7               person to inject CO<sub>2</sub> for the purposes of geologic sequestration  
8               within the subsurface project boundary defined in the existing  
9               permit, unless the existing permit provides otherwise.

10              (2) A CO<sub>2</sub> injection permit under subtitle B does not relieve  
11              the site operator of any liability for failure to obtain ownership  
12              interests, easements, or licenses necessary to occupy pore space  
13              unless the CO<sub>2</sub> injection permit incorporates a pore space per-  
14              mit issued under this section.

15              (b) REGULATIONS.—Not later than one year after the date of  
16              enactment of this Act, the Administrator shall promulgate rules and  
17              procedures for allocating and managing the use of subsurface pore  
18              space for the purpose of permanent geologic sequestration of CO<sub>2</sub>, and  
19              shall integrate the administration of these rules and procedures with  
20              existing State and Federal UIC programs such that if a pore space  
21              permit is issued under this section in connection with a CO<sub>2</sub> injection  
22              permit, the pore space permit conveys the exclusive Federal privilege  
23              to access and use of pore space for geologic sequestration of carbon  
24              dioxide within the subsurface project boundary defined by the permit.

25              (c) APPLICATION FOR PORE SPACE PERMIT.—A geologic se-  
26              questration facility developer, in connection with an application for a  
27              CO<sub>2</sub> injection permit under subtitle B, may include a request for a pore  
28              space permit.

29                (1) If a request is made for a pore space permit, the UIC  
30                CO<sub>2</sub> Regulator shall:

1 (A) publish in the Federal Register and provide  
2 such additional public notice as the UIC CO<sub>2</sub> Regulator  
3 shall require, and

4 (B) afford a period of 60 days for participation in  
5 the permit application proceeding to all interested parties  
6 and holders of preexisting interests that would be materially  
7 impaired by the granting of the pore space permit.

8 (2) If an interested party or the holder of a preexisting in-  
9 terest fails to intervene in the pore space permit application not  
10 later than the date of filing of notice paragraph (1)(A):

11 (A) Except as provided in subparagraph (B), such  
12 party shall be deemed to have waived any and all rights and  
13 property interests that become impaired by the project that  
14 is the subject of the proceeding should a pore space permit  
15 be issued by the UIC CO<sub>2</sub> Regulator.

16 (B) An interested party or the holder of a preexist-  
17 ing interest may be permitted late intervention in a proceed-  
18 ing under this section upon a showing of good cause.

19 (3) A competing geologic sequestration facility applicant  
20 who intervenes under paragraph (1)(B) must indicate their in-  
21 tention to file a competing CO<sub>2</sub> injection permit application  
22 within 90 days of the original project application in accordance  
23 with subsection (e) of subtitle B.

24 (d) CONSIDERATION OF PREEXISTING INTERESTS IN SCOPE OF  
25 PROJECT.—

26 (1) If it is demonstrated that a preexisting interest would be  
27 materially impaired by the granting of a CO<sub>2</sub> injection permit  
28 for permanent geologic sequestration of carbon dioxide, the  
29 geologic sequestration facility should be permitted only in ac-  
30 cordance with:

- 1 (A) a modification of the project that avoids the im-
- 2 pairment;
- 3 (B) a contractual agreement between the owner of
- 4 the preexisting interest and the project applicant; or
- 5 (C) a finding by the UIC CO<sub>2</sub> Regulator that con-
- 6 demnation of the preexisting interest through the exercise
- 7 of eminent domain pursuant to subsection (e) of this sub-
- 8 title, with appropriate compensation, is necessary to the
- 9 proper operation the geologic sequestration facility under
- 10 application.
- 11 (2) In connection with a pending application proceeding for
- 12 geologic sequestration of carbon dioxide under this subsection,
- 13 the UIC CO<sub>2</sub> Regulator may exclude from the subsurface
- 14 project boundary, or authorize exercise of eminent domain un-
- 15 der subsection (e) for, any portion of a geologic formation
- 16 where the formation is:
  - 17 (A) subject to active and properly licensed explora-
  - 18 tion or production of hydrocarbon resources or hard miner-
  - 19 als;
  - 20 (B) actively used for the properly licensed injection
  - 21 of brines or other fluids for the purpose of enhanced recov-
  - 22 ery of hydrocarbon resources;
  - 23 (C) actively used for injection of fluid wastes for
  - 24 disposal pursuant to a valid UIC permit;
  - 25 (D) actively used for certificated natural gas sto-
  - 26 rage;
  - 27 (E) actively used for properly licensed groundwater
  - 28 recharge and recovery;
  - 29 (F) actively used for properly licensed compressed
  - 30 air storage;

1 (G) actively used for geothermal electric power  
2 generation; or

3 (H) actively used for other purposes the UIC CO<sub>2</sub>  
4 Regulator deems relevant.

5 (e) RIGHT OF EMINENT DOMAIN.—When the UIC CO<sub>2</sub> Regula-  
6 tor finds that condemnation of a preexisting interest is necessary to the  
7 proper operation of the geologic sequestration facility under applica-  
8 tion:

9 (1) the holder of a CO<sub>2</sub> injection permit to whom a pore  
10 space permit was issued under subsection (c) of this subtitle,  
11 when it cannot acquire by contract, or is unable to agree with  
12 the owner of the preexisting interest to the compensation to be  
13 paid for the necessary surface and subsurface property rights to  
14 construct, operate, and maintain underground wells and facili-  
15 ties for the permanent sequestration of carbon dioxide, may ac-  
16 quire the same by the exercise of the right of eminent domain  
17 in the district court of the United States for the district in which  
18 such property interest is located; and

19 (2) the practices and procedures in any action or proceeding  
20 for that purpose in the United States shall conform as nearly as  
21 possible with the practices and procedures in a similar action or  
22 proceeding in the courts of the State where the property is si-  
23 tuated.

24 (f) DOMINANCE OF MINERAL ESTATE.—

25 (1) The provisions of this subtitle shall not be deemed to  
26 preempt the mineral rights laws of any State, except to the ex-  
27 tent necessary to ensure that mineral exploration and produc-  
28 tion activities will not cause leakage of permanently seques-  
29 tered carbon dioxide, or compromise the integrity of the geo-  
30 logic sequestration site.

1           (2) The holder of a State-law right to conduct mineral ex-  
2           ploration or production activities shall not be entitled to com-  
3           pensation as a result of any such activities being precluded or  
4           restricted, to the extent necessary, to protect the integrity of the  
5           geologic sequestration site.

6           (3) As with all other property interests, mineral rights are  
7           subject to condemnation through the exercise of eminent do-  
8           main under this subtitle.

9           (g) FEDERAL REMEDY FOR CLAIMS OF SUBSURFACE TRES-  
10          PASS.—

11           (1) A claim of subsurface trespass shall not be actionable  
12           against a site operator conducting geologic sequestration in ac-  
13           cordance with a valid CO<sub>2</sub> injection permit and to whom a pore  
14           space permit has been issued under subsection (c) of this sub-  
15           title unless the injection or migration of carbon dioxide mate-  
16           rially impairs:

17                   (A) preexisting interests that were identified to the  
18                   UIC CO<sub>2</sub> Regulator during permit proceeding pursuant to  
19                   subsections (c) and (d) of this subtitle or

20                   (B) extends beyond subsurface project boundary de-  
21                   fined by the pore space permit.

22           (2) The issuance of a CO<sub>2</sub> injection permit shall not protect  
23           a site operator from claims of subsurface trespass if the injec-  
24           tion or migration of carbon dioxide materially impairs preexist-  
25           ing interests established during the permit proceeding that have  
26           not been compensated via a contractual agreement between the  
27           owners of the preexisting interests and the project applicant, or  
28           condemned through the valid exercise of eminent domain pur-  
29           suant to subsection (e) of this subtitle.

30           (3) A surface or subsurface property interest-holder shall be  
31           permitted to recover money damages only for loss of a non-



1 speculative value resulting from the injection and migration of  
2 carbon dioxide.

3 (A) The standard for calculating money damages  
4 shall be the present value of the demonstrated impairment,  
5 or the otherwise expected value of the future income stream  
6 that would have accrued had the interest not been impaired.

7 (B) Punitive damages shall be barred if the site op-  
8 erator who causes the material impairment acts in com-  
9 pliance with the terms of the CO<sub>2</sub> injection permit.

10 (C) Any damage award shall be discounted by the  
11 cost of the mineral extraction or current and actual subsur-  
12 face activity that is not a result of impairments caused by  
13 the injection and migration of carbon dioxide.

14 (4) Injunctive relief for subsurface trespass shall not be al-  
15 lowed unless the holder of the property interest shows that the  
16 harm to the property interest clearly outweighs the utility of the  
17 sequestration of carbon dioxide.

18 (5) The United States district court for the district in which  
19 a trespass claim arises shall have exclusive jurisdiction over  
20 such a claim, and the United States Court of Appeals for the  
21 District of Columbia shall hear any appeal of a district court  
22 ruling under this subsection.

23 (h) REGULATORY TAKINGS.—

24 (1) Any claim for a regulatory taking without just compen-  
25 sation that arises out of an action by the United States or a  
26 State under this title shall be filed against the United States in  
27 the United States Court of Federal Claims pursuant to chapter  
28 91 of title 28 of the United States Code.

29 (2) No such claim may be filed against a State by reason of  
30 its action as a UIC CO<sub>2</sub> Regulator in accordance with this title.

1    **SUBTITLE    D—GEOLOGIC    SEQUESTRA-**  
2            **TION OF CARBON DIOXIDE ON FED-**  
3            **ERAL LANDS**

4    **SEC. 331. PURPOSE.**

5            The purpose of this section is to expressly authorize the Secre-  
6    tary of the Interior, through the Bureau of Land Management, to li-  
7    cense the use of Federal lands for the permanent geologic sequestra-  
8    tion of carbon dioxide.

9    **SEC. 332. DEFINITIONS.**

10           For the purposes of this subtitle:

11           (a) BLM.—The term "BLM" means the Bureau of Land Man-  
12    agement.

13           (b) FEDERAL LANDS.—The term "Federal lands" refers to lands  
14    managed by the BLM and FS that have been determined by each agen-  
15    cy to be available for use for permanent geologic sequestration of car-  
16    bon dioxide.

17           (c) FS.—The term "FS" means the Forestry Service.

18           (d) SECRETARY.—Unless otherwise specified, the term "Secre-  
19    tary" means the Secretary of the United States Department of the Inte-  
20    rior.

21           (e) SPLIT ESTATE.—The term "split estate" means lands in  
22    which the Federal government owns the surface rights, but the mineral  
23    rights are privately owned.

24    **SEC. 333. PERMITTING AND LICENSING GEOLOGIC SE-**  
25            **QUESTRATION ON FEDERAL LANDS.**

26           (a) REGULATIONS.—Not later than one year after the date of  
27    enactment of this title, the Secretary shall promulgate rules and proce-  
28    dures for allocating and managing the use of deep subsurface pore  
29    space for the purpose of geologic sequestration of carbon dioxide on  
30    Federal lands and split estates.

- 1 (b) REQUIREMENTS.—
- 2 (1) Through an integrated permitting system, the BLM and
- 3 the EPA should jointly license sequestration projects on Feder-
- 4 al lands and split estates under a open and competitive applica-
- 5 tion process pursuant to the UIC permitting procedures and re-
- 6 quirements under subtitle B of this title.
- 7 (2) LICENSING GEOLOGIC SEQUESTRATION FACILITIES ON
- 8 SPLIT ESTATES.—The EPA CO<sub>2</sub> injection permit proceedings
- 9 conducted under subtitle B for geologic sequestration facilities
- 10 proposed on split estates shall be subject to the requirements
- 11 under subtitle C of this title if the project applicant elects to ap-
- 12 ply for a pore space permit pursuant to subtitle C.
- 13 (3) OPEN AND COMPETITIVE APPLICATION PROCEDURE.—
- 14 The BLM shall license geologic sequestration exploration and
- 15 development projects on Federal lands through an open and
- 16 competitive application process, awarding licenses to the appli-
- 17 cant who demonstrates the most adequately developed:
- 18 (A) technical approach for complying with all per-
- 19 formance-based standards, regulations, rules and require-
- 20 ments; and
- 21 (B) understanding of the geologic characteristics of
- 22 the proposed sequestration site.
- 23 (4) COLLECTION OF ANNUAL FEES AND RENT.—The BLM
- 24 shall annually charge administrative fees and collect an annual
- 25 nominal rent from project operators for the administration and
- 26 management of geologic sequestration licenses.
- 27 (5) ENVIRONMENTAL REVIEW OF FEDERAL ACTIONS AU-
- 28 THORIZING PRIVATE GEOLOGIC SEQUESTRATION FACILITIES ON
- 29 FEDERAL LANDS AND SPLIT ESTATES.—The BLM shall be the
- 30 lead agency for the purpose of Federal environmental review
- 31 pursuant to the National Environmental Policy Act of 1969 (42

1 U.S.C. § 4321 et seq.) and, in consultation with all affected  
2 agencies, shall prepare a single environmental review docu-  
3 ment to be used as the basis for all decisions under Federal law  
4 related to the proposed sequestration project.

5 **SEC. 334. CONFORMING AMENDMENTS.**

6 (a) Section 302 (b) of the Federal Land Policy and Manage-  
7 ment Act of 1976 (43 U.S.C. § 1732) is amended by inserting after  
8 "utilize public lands for habitation, cultivation," the following:

9 (1) "permanent geologic sequestration of carbon dioxide,".

10 (b) Section 501 (a) of the Federal Land Policy and Manage-  
11 ment Act of 1976 as amended (43 U.S.C. § 1761) is amended by add-  
12 ing a new paragraph "(a)(8)" and inserting "pipelines and other sys-  
13 tems for the transportation or distribution carbon dioxide and for the  
14 permanent geologic sequestration carbon dioxide and terminal facili-  
15 ties in connection therewith."

1 **TITLE IV—LONG-TERM STEWARDSHIP OF**  
2 **CLOSED INJECTION SITES**

3 **SEC. 401. DEFINITIONS.**

4 For purposes of this title:

5 (a) **APPLICABLE REGULATORY AUTHORITY.**—The term "appli-  
6 cable regulatory authority" means the Federal or State agency that  
7 principal responsibility for issuing injection permits for, and regulating  
8 underground injection by, a GS project.

9 (b) **CERTIFICATE OF CLOSURE.**—The term "certificate of clo-  
10 sure" means a determination issued by the applicable regulatory au-  
11 thority with respect to a GS project that certifies that the operator of  
12 the project has completed injection operations, well closure, and any  
13 required monitoring and remediation to ensure that any carbon dioxide  
14 injected into a geologic formation would not harm or present a risk to  
15 human health, safety, and the environment, including drinking water  
16 supplies.

17 (c) **CIVIL CLAIM.**—The term "civil claim" means a claim before  
18 any court or administrative agency for civil relief with respect to dam-  
19 age from the injection of carbon dioxide by a GS project.

20 (d) **DAMAGE.**—

21 (1) **IN GENERAL.**—The term "damage" means any direct or  
22 indirect damage or harm to persons, property, or natural re-  
23 sources from the injection of carbon dioxide into geologic for-  
24 mation.

25 (2) **INCLUSIONS.**—The term "damage" includes personal in-  
26 jury, sickness, real or personal property damage, natural re-  
27 source damage, trespass, subsidence losses, revenue losses, and  
28 loss of profits.

29 (e) **ENHANCED HYDROCARBON RECOVERY.**—The term "en-  
30 hanced hydrocarbon recovery" means the use of carbon dioxide to im-

1 prove or enhance the recovery of oil or natural gas from oil or natural  
2 gas fields.

3 (f) FUND.—The term "Fund" means the Carbon Sequestration  
4 Trust Fund established by section 403(d)(1).

5 **SEC. 402. LONG-TERM STEWARDSHIP RESPONSIBILITY.**

6 (a) IN GENERAL.—Except as otherwise provided in subsection  
7 (b), the Board shall be responsible for the long-term stewardship of a  
8 GS project at such time as a certificate of closure issued for the  
9 project.

10 (b) TRANSFER TO STATE.—

11 (1) IN GENERAL.—A State may request that the manage-  
12 ment responsibilities associated with long-term stewardship of  
13 a GS project located in the State be transferred to the State in  
14 accordance with regulations prescribed by the Board.

15 (2) APPROVAL OF REQUEST.—If the Board approves a re-  
16 quest under paragraph (1), the State shall be responsible for the  
17 long-term stewardship of the applicable GS project beginning  
18 on the date of the approval. The Secretary is authorized to en-  
19 ter into contracts to reimburse States for their expenses of ste-  
20 wardship.

21 (3) FAILURE TO ACT BY STATE.—In accordance with any  
22 regulations under paragraph (1), if the Board determines that a  
23 State that has accepted management responsibilities under pa-  
24 ragraph (1) has failed to carry out the responsibilities of the  
25 State with respect to the GS project, the Board shall assume  
26 long-term stewardship of the project as soon as practicable af-  
27 ter the date of the determination.

28 **SEC. 403. LONG-TERM STEWARDSHIP PROGRAM.**

29 (a) IN GENERAL.—The Board shall administer the long-term  
30 stewardship program to be established by this title.

1 (b) STEWARDSHIP FEES.—In carrying out the stewardship pro-  
2 gram under this title, the Board shall require operators of GS projects  
3 to pay a risk-based fee, in an amount to be established in accordance  
4 with subsection (c), for each ton of carbon dioxide injected by the GS  
5 project into geologic formations during the operational phase of the  
6 facility.

7 (c) AMOUNT OF FEES.—

8 (1) SETTING FEES.—

9 (A) IN GENERAL.—As soon as practicable after the  
10 date of enactment of this Act, the Board shall establish, and  
11 may from time to time revise—

12 (i) the minimum and maximum balance for the  
13 Fund; and

14 (ii) the amount of the fee required under subsec-  
15 tion (b).

16 (B) CRITERIA.—In establishing fees under subpara-  
17 graph (A)(ii), the Board shall take into account—

18 (i) the estimated quantity of carbon dioxide to  
19 be injected annually into geologic formations by all  
20 operating commercial GS projects;

21 (ii) the risk of an incident resulting in liability;

22 (iii) the likely dollar value of any damages relat-  
23 ing to an incident;

24 (iv) other factors relating to the risk of the GS  
25 project and associated geologic formation; and

26 (v) impact on commercial and economic viabili-  
27 ty of GS projects.

28 (C) CONSIDERATION OF PROJECT RISKS.—In estab-  
29 lishing the amount of the fees under subparagraph (A)(ii),  
30 the Board shall, to the extent practicable, use a fee system  
31 that is based on the level of risk associated with a specific

1 geologic formation and project development plan and oper-  
2 ator history, in order to provide an incentive for the selec-  
3 tion and operation of the well-performing GS projects.

4 (D) REVIEW AND ADJUSTMENT.—The Board shall,  
5 on at least an annual basis, review the Fund balance—

6 (i) to ensure that there are sufficient amounts in  
7 the Fund to make the payments required under sub-  
8 section (d)(2)(A); and

9 (ii) to determine whether or not to increase or  
10 decrease the amount, or discontinue collection, of  
11 the fee, after taking into consideration—

12 (I) the annual quantity of carbon dioxide in-  
13 jected by carbon dioxide storage facilities;

14 (II) the number and estimated value of cur-  
15 rent and projected claims against the Fund; and

16 (III) any other relevant factors, as deter-  
17 mined by the Board.

18 (2) DEPOSIT.—Notwithstanding section 3302 of section  
19 31, United States Code, the fees collected under paragraph (1)  
20 shall be deposited in the Fund.

21 (d) CARBON SEQUESTRATION TRUST FUND.—

22 (1) ESTABLISHMENT.—There is established in the Treasury  
23 of the United States a revolving fund, to be known as the "Car-  
24 bon Sequestration Trust Fund", consisting of such amounts as  
25 are deposited under this section.

26 (2) USE OF FUND.—

27 (A) IN GENERAL.—Amounts in the Fund shall be  
28 made available, without further appropriation or fiscal year  
29 limitation—

30 (i) to the Board for the payment, in accordance  
31 with section 404, of civil claims respecting a GS



- 1 project that are brought after a certificate of closure
- 2 for the project has been issued;
- 3 (ii) to the Board or State agency for long-term
- 4 stewardship after the date of issuance of a certificate
- 5 for closure;
- 6 (iii) to the Board, or State agency to pay any
- 7 reasonable and verified administrative cost incurred
- 8 by the Board or State agency in carrying out the
- 9 stewardship program;
- 10 (iv) to the Board for emergency remediation ac-
- 11 tions under section 407; and
- 12 (v) to the Board, for the cost of any compensa-
- 13 tory action that may be required under title V.

14 (B) LIMITATION.—Amounts in the Fund shall only  
15 be used for the purposes described in clause (i), (ii), (iii), or  
16 (iv) of subparagraph (A).

17 (3) REPAYABLE ADVANCES.—

18 (A) IN GENERAL.—If sufficient amounts are not  
19 available in the Fund to cover potential claims, the Board  
20 may request from the Secretary of the Treasury an interest-  
21 bearing advance in funding from the Treasury to carry out  
22 the Program.

23 (B) TERMS AND CONDITIONS.—The terms and con-  
24 ditions for the repayment of an advance under subpara-  
25 graph (A) shall be specified by the Secretary of the Treas-  
26 ury.

27 **SEC. 404. CIVIL CLAIMS.**

28 (a) BOARD ADJUDICATION OF CLAIMS.—The Board  
29 shall pay any civil claim for damage respecting a GS project for which  
30 a certificate of closure has been issued. Such claim shall be—

- 31 (1) filed with the Board;

1 (2) adjudicated in accordance with sections 554, 557, and  
2 558 of title 5, United States Code; and

3 (3) paid in accordance with compensation rules under  
4 405(b)(3) of this title.

5 (b) LIABILITY OF OTHER ENTITIES.—After issuance of a certifi-  
6 cate of closure to a GS project, a civil claim respecting such project  
7 may not be brought against.—

8 (1) the owner or operator of the GS project, except as pro-  
9 vided in subsection (c);

10 (2) the generator of the carbon dioxide injected into the ap-  
11 plicable geologic formation in connection with the GS project;

12 (3) the owner or operator of the pipeline used to transport  
13 the carbon dioxide to the GS project; or

14 (4) any State agency that has long-term stewardship re-  
15 sponsibility under section 402(b).

16 (c) BOARD RECOVERY FROM OPERATOR.—Notwithstanding  
17 subsection (b)(1), the operator of a GS project shall be liable to the  
18 Board for any compensation paid or remediation cost incurred as a re-  
19 sult of (1) the project operator's willful failure to comply with any reg-  
20 ulatory requirement, (2) the reliance by the federal or state agency is-  
21 suing a certificate of closure on any untrue statement of a material fact  
22 by the project operator, or (3) the omission by the project operator of a  
23 statement of material fact necessary in order to make the statements  
24 made not misleading, (in light of the circumstances under which they  
25 were made) to the federal or state agency.

26 (d) CLAIMS PRIOR TO CERTIFICATE OF CLOSURE.—Nothing in  
27 this title affects civil liability for damage claims asserted prior to is-  
28 suance of a certificate of closure.

29 **SEC. 405. FEDERAL GEOLOGIC SEQUESTRATION BOARD.**

30 (a) ESTABLISHMENT.—There is hereby established, within the  
31 Department of Energy, an independent agency to be known as the

1 Federal Geologic Sequestration Board. The Board shall consist of  
2 three members appointed by the President by and with the advice and  
3 consent of the Senate for terms of six years, except that—

4 (1) the members first appointed shall serve for terms of  
5 two, four, and six years as designated by the President at the  
6 time of appointment, and

7 (2) a member appointed to fill an unexpired term shall  
8 serve only for the remainder of that term.

9 Members of the Board shall be compensated at the rate pre-  
10 scribed for Level IV of the Executive Schedule.

11 (b) FUNCTIONS.—

12 (1) IN GENERAL.—The Board shall carry out the duties pre-  
13 scribed for it under this title; and exercise such other authorities  
14 as may be necessary or appropriate to carry out its functions  
15 under this title, including employment of personnel and enter-  
16 ing into contracts.

17 (2) STANDARDS.—The Board, after consultation with the  
18 Administrator, shall establish standards for any monitoring,  
19 measurement, verification, and site remediation activities ne-  
20 cessary to protect health, safety, and the environment during  
21 long-term stewardship.

22 (3) COMPENSATION STANDARDS, PROCEDURES, AND SCHE-  
23 DULES.—The Board shall by rule prescribe compensation stan-  
24 dards, procedures, and schedules for determining the nature  
25 and amount of compensation that will be paid from the Trust  
26 Fund for civil claims for damage by the Board under this title.  
27 Rules written under this paragraph shall include procedures  
28 under which the Board will take any compensatory action re-  
29 quired under section 503.

- 1           (4) PRIVATE INSURERS.—The Board may contract with pri-  
2           vate insurers to provide claim adjustment services for public  
3           liability claims.
- 4           (c) POWERS.—The Board has the authority to—
- 5           (1) prescribe, by rule or order, such requirements for moni-  
6           toring GS projects and for making such inspections and reports  
7           as may be necessary or appropriate to carry out this title;
- 8           (2) enter onto the premises or property of any GS project to  
9           carry out this title;
- 10          (3) commence a civil action in the United States District  
11          Court to recover from any project operator any fees not paid  
12          when due, after notice and an opportunity to cure any deficien-  
13          cy within thirty days of such notice;
- 14          (4) bring an action against any person in the United States  
15          District Court to enforce the provisions of this title or rules or  
16          orders thereunder, and to obtain appropriate injunctive or other  
17          relief; and
- 18          (5) seek civil penalties for violations of provisions of this  
19          Act, as provided under subsection (d).
- 20          (d) PENALTIES.—
- 21          (1) CIVIL PENALTIES.—Any person that knowingly violates  
22          any provision of this title or any rule or order thereunder shall  
23          be subject to a civil penalty of \$50,000 [or other appropriate  
24          penalty to be determined] per violation.
- 25          (2) CRIMINAL PENALTIES.—Any person that knowingly and  
26          willfully violates any provision of this title or any rule or order  
27          thereunder shall be subject to a fine of \$500,000 or imprison-  
28          ment for a term of two years, or both [or other appropriate pe-  
29          nalty to be determined].
- 30          (e) JUDICIAL REVIEW.—Rules of general applicability pre-  
31          scribed under this title by the Board shall be reviewed by the United

1 States Courts of Appeal in accordance with chapter 158 of title 28,  
2 United States Code. All other agency actions under this title shall be  
3 reviewed in accordance with chapter 7 of title 5, United States Code.

4 **SEC. 406. FIRST MOVER PROJECTS.**

5 (a) INDEMNIFICATION.—Notwithstanding section 1341 of title  
6 31, United States Code, but subject to limitations in Appropriations  
7 Acts, the Secretary is authorized to enter into agreements to indemnify  
8 owners and operators of qualifying geologic sequestration projects for  
9 all or part of the costs incurred to satisfy civil claims for damage  
10 (whenever made) that arise from carbon dioxide injection into a geo-  
11 logic formation during the demonstration period of the project, as de-  
12 termined by the Secretary. The Secretary may impose such conditions  
13 on such indemnification agreements as may be necessary or appropri-  
14 ate to protect the financial interest of the United States, including a  
15 requirement that indemnification provided to qualifying projects under  
16 this section be limited to the extent that Secretary determines that po-  
17 tential long-term liabilities can be adequately addressed through the  
18 implementation of preceding sections of this title.

19 (b) QUALIFYING PROJECTS.—A project shall qualify for indem-  
20 nification under this section only if the project—

21 (1) receives Federal funds to demonstrate the geologic se-  
22 questration of carbon dioxide at a GS project;

23 (2) obtains all necessary permits for the injection of carbon  
24 dioxide into a suitable geologic formation;

25 (3) injects the carbon dioxide geologic formations that do  
26 not involve enhanced oil or gas recovery; and

27 (4) agrees to comply with conditions that the Secretary may  
28 establish to protect health, environment and safety, including  
29 requirements on volume of injection, depth of injection, purity  
30 of injectate, and proximity of underground drinking water  
31 sources, human settlements, or ecologically sensitive areas.

1    **SEC. 407. EMERGENCY SITE REMEDIATION.**

2           The Administrator may undertake emergency remediation ac-  
3    tion at any GS project for which a certificate of closure has not been  
4    issued if in the judgment of the Administrator an imminent danger to  
5    public health or safety so requires. Amounts held in the Fund shall be  
6    available for such purpose. The owner and the operator of the GS  
7    project shall be liable to the Administrator for any costs incurred for  
8    such remediation action. In addition the Board shall consider the cost  
9    of such expected or actual remediation when setting fees under section  
10   403(c)(1)(C). The Administrator shall maintain, directly or by prior  
11   contract, a stand-by emergency response capability for purposes of this  
12   section, and may enter into both advance and responsive contracts to  
13   carry out his r responsibilities under this section.

1 **TITLE V—ACCOUNTING FOR SEQUES-**  
2 **TERED CARBON DIOXIDE**

3 **SEC. 501. PURPOSE; DEFINITIONS**

4 (a) PURPOSE.—The purpose of this title is to:

5 (1) establish inventory accounting and reporting procedures  
6 for CO<sub>2</sub> capture facilities, CO<sub>2</sub> pipelines, and geologic seques-  
7 tration facilities, that will allow assessment of the efficacy of  
8 the overall CCS system;

9 (2) establish leakage monitoring and reporting procedures  
10 for geologic sequestration facilities to be used in the event that  
11 injected CO<sub>2</sub> leaks back to the atmosphere; and,

12 (3) specify the use of these measures in GHG emission re-  
13 duction programs.

14 (b) DEFINITIONS.—For the purposes of this title:

15 (1) COMPENSATORY ACTION.—The term "compensatory ac-  
16 tion" refers to any requirement to submit allowances or to take  
17 other action to compensate for leakage in accordance with the  
18 provisions of a federal greenhouse gas emission reduction pro-  
19 gram.

20 (2) LEAKAGE.—The term "leakage" refers to the release to  
21 the atmosphere of carbon dioxide that was injected for purpos-  
22 es of geologic sequestration.

23 **SEC. 502. ACCOUNTING FOR CO<sub>2</sub> HANDLED IN CCS.**

24 (a) DEVELOPMENT OF STANDARDS.—

25 (1) Not later than one year after the date of enactment of  
26 this Act, the Administrator shall:

27 (A) establish inventory accounting standards for the  
28 measurement of CO<sub>2</sub> handled by CO<sub>2</sub> capture facilities,  
29 CO<sub>2</sub> pipelines, and geologic sequestration facilities consi-  
30 dering:

- 1 (i) current standards established by industry bo-  
2 dies;  
3 (ii) best practices in the process industries;  
4 (iii) advice of the CCS Technical Advisory  
5 Committee of the National Research Council; and,  
6 (iv) compatibility with federal greenhouse gas  
7 emissions reporting programs.
- 8 (B) review and revise leakage monitoring and re-  
9 porting requirements for geologic sequestration facilities  
10 established in 40 CFR Part 98 Subpart RR in order to:
- 11 (i) incorporate the lessons learned from demon-  
12 stration geologic sequestration facilities;  
13 (ii) identify the level of leakage a monitoring  
14 program must be designed to detect; and,  
15 (iii) require focused surface measurements to  
16 locate and quantify leakage emissions only if rou-  
17 tine subsurface monitoring, as required in title III  
18 and this title, indicates loss of containment, and  
19 near-surface monitoring indicates that leakage is  
20 occurring.
- 21 (C) establish a national reporting system that will  
22 allow annual estimates of the mass of CO<sub>2</sub> captured, trans-  
23 ported, injected, vented and reemitted as leakage, as well as  
24 the mass of any CO<sub>2</sub> lost or unaccounted for in handling.
- 25 (b) MEASUREMENT AND REPORTING REQUIREMENTS.—  
26 According to the standards established in subsection (a), the following  
27 entities must measure and report the following information:
- 28 (1) CO<sub>2</sub> CAPTURE FACILITY.— A CO<sub>2</sub> capture facility must  
29 measure and annually report the mass of CO<sub>2</sub> captured and the  
30 amount exported for sequestration or any other purpose in ac-  
31 cordance with standards established by the Administrator.



1 (2) CO<sub>2</sub> PIPELINE.—A project transporting CO<sub>2</sub> in whole or  
2 part for the purposes of geologic sequestration must measure  
3 and annually report the mass of CO<sub>2</sub> imported from capture fa-  
4 cilities and the amount exported to geologic sequestration facil-  
5 ities, in accordance with standards established by the Adminis-  
6 trator.

7 (3) GEOLOGIC SEQUESTRATION FACILITY.—A geologic se-  
8 questration facility must measure and annually report the fol-  
9 lowing information:

10 (A) the amount of CO<sub>2</sub> imported, and the amounts  
11 vented and injected, in accordance with standards estab-  
12 lished by the Administrator;

13 (B) leakage quantity, as measured through monitor-  
14 ing in accordance the standards established in subsection  
15 (a); and,

16 (C) the net quantity of CO<sub>2</sub> sequestered, which shall  
17 be determined as the difference between the quantity in-  
18 jected, and the leakage quantity, reported pursuant to para-  
19 graphs (A) and (B) of this subsection.

20 (c) ANNUAL RECONCILIATION.—

21 (1) On an annual basis, the Administrator will:

22 (A) Reconcile the mass of CO<sub>2</sub> captured, trans-  
23 ported, vented, injected, and emitted as leakage by CO<sub>2</sub>  
24 capture facilities, CO<sub>2</sub> pipelines, and geologic sequestration  
25 facilities in order to determine:

26 (i) the amount of CO<sub>2</sub> lost or unaccounted for in  
27 handling

28 (ii) the parties responsible for CO<sub>2</sub> lost or unac-  
29 counted above a threshold quantity to be determined  
30 by the Administrator

1 (B) Publish in the Federal Register and on the  
2 Agency's website at a level of detail to be determined by  
3 the Administrator:

4 (i) the mass of CO<sub>2</sub> captured, transported, in-  
5 jected, and emitted to the atmosphere by CO<sub>2</sub> cap-  
6 ture facilities, CO<sub>2</sub> pipelines, and geologic seques-  
7 tration facilities; and

8 (ii) the mass of CO<sub>2</sub> otherwise unaccounted for.

9 **SEC. 503. INTEGRATION WITH GHG EMISSION REDUC-**  
10 **TION PROGRAM**

11 (a) **APPLICABILITY.**—This section applies only if a Federal  
12 greenhouse gas emission reduction program (1) is in effect, (2) is ap-  
13 plicable to stationary sources, and (3) provides that carbon dioxide in-  
14 jected for geologic sequestration is eligible for or subject to an other-  
15 wise applicable compliance obligation under Federal law.

16 (b) **ELIGIBILITY OF GEOLOGIC SEQUESTRATION FACILITIES.**—  
17 Only carbon dioxide injected at a site holding a valid CO<sub>2</sub> injection  
18 permit will be considered geologically sequestered under any federal  
19 greenhouse gas emission reduction program.

20 (c) **DEVELOPMENT OF STANDARDS FOR BACKSTOP COMPENSA-**  
21 **TORY ACTION.**—Not less than one year after the enactment of a Feder-  
22 al greenhouse gas emission reduction program, and after the report of  
23 the CCS advisory council to the National Research Council, the Ad-  
24 ministrator shall promulgate regulations that specify the requirements  
25 for backstop compensatory action for potential leakage from sites  
26 where subsurface monitoring indicates loss of containment, but a satis-  
27 factory surface monitoring program, as described in Sec. 502(a)(1),  
28 cannot be implemented at the site due to technological or other factors.  
29 Backstop compensatory action shall be determined as a fraction of the  
30 total amount of CO<sub>2</sub> sequestered at the site.

1 (d) COMPENSATORY ACTION FOR CARBON DIOXIDE LOST OR  
2 UNACCOUNTED FOR BEFORE INJECTION.

3 (1) Any CO<sub>2</sub> capture facility, CO<sub>2</sub> pipeline, or geologic se-  
4 questration facility (or combination thereof) that the adminis-  
5 trator determines is responsible for a material quantity of lost  
6 or unaccounted for CO<sub>2</sub>, in accordance with the inventory re-  
7 conciliation specified in section 502(c), must take appropriate  
8 compensatory action with respect to such lost or unaccounted  
9 for CO<sub>2</sub>, in accordance with standards established by the Ad-  
10 ministrator, consistent with applicable provisions of a green-  
11 house gas emission reduction program.

12 (e) COMPENSATORY ACTION FOR LEAKAGE OF CARBON DIO-  
13 XIDE FROM GEOLOGIC SEQUESTRATION SITES.—

14 (1) MEASURED LEAKAGE.—Operators of geologic seques-  
15 tration facilities shall be required to take appropriate compen-  
16 satory action with respect to any leakage identified and re-  
17 ported in accordance with regulations established in Sec. 502  
18 and the provisions of the greenhouse gas emission reduction  
19 program.

20 (2) POTENTIAL LEAKAGE.—If subsurface monitoring indi-  
21 cates loss of containment, but the Administrator determines  
22 that a satisfactory surface monitoring program, as described in  
23 Sec. 502(a), cannot be implemented at the site due to technolo-  
24 gical or other factors, the operator must take backstop compen-  
25 satory action, in accordance with regulations established in  
26 Sec. 503(c). Backstop compensatory action must be taken an-  
27 nually until accurate surface monitoring is completed or sub-  
28 surface monitoring indicates that injected CO<sub>2</sub> is successfully  
29 contained in a geologic formation.