

# 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 2012”.

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**SEC. 3. FINDINGS.**

The Congress finds that facilitating the sequestration of carbon dioxide in appropriate geologic formations in order to mitigate the detrimental effects of climate change is in the public interest. The Congress further finds that a nationally-coordinated flexible and adaptive regulatory approach is needed to assure that such sequestration is undertaken in a manner that is safe, environmentally sound, affordable, socially equitable, and compatible with evolving international CO<sub>2</sub> control regimes.

#### **SEC. 4. DEFINITIONS.**

For the purposes of this Act:

(a) GEOLOGIC SEQUESTRATION FACILITY.—The term “geologic sequestration facility” or “GS facility” means a facility that receives and permanently stores or sequesters carbon dioxide in a geologic formation. Such term includes an enhanced hydrocarbon recovery operation only if a CO<sub>2</sub> injection permit has been issued for such project.

(b) LONG-TERM STEWARDSHIP.—The term “long-term stewardship” means the monitoring, measurement, verification, and remediation and related activities associated with a GS project after issuance of a certificate of closure.

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

(d) ADMINISTRATOR.—The term “Administrator” means the Administrator of the Environmental Protection Agency.

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

(f) CCS.—The term “CCS” refers to carbon capture and sequestration, which is the process of capture, transport, and geologic sequestration of CO<sub>2</sub> for the purpose of permanently preventing its release to the atmosphere.

(g) ENHANCED HYDROCARBON RECOVERY.—The term “enhanced hydrocarbon recovery” or “EHR” means injection of CO<sub>2</sub> for the purpose of increasing production of oil or natural gas.

(h) GEOLOGIC FORMATION.—The term “geologic formation” refers to a body of rock in the subsurface that is distinct from the surrounding rock and is capable of permanently retaining injected carbon dioxide.

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

(j) REMEDIATION.—The term “remediation” means any activity undertaken at any stage during the operation, closure or long-term stewardship of a sequestration site that is intended to correct a health, safety, or environmental problem with the performance of a site such as undesired movement of the injected fluid, or possible release of carbon dioxide to the atmosphere.

(k) SITE OPERATOR.—The term “site operator” refers to the entity responsible for the operation of the geological sequestration facility.

(l) CO<sub>2</sub> PIPELINE.—The term “CO<sub>2</sub> pipeline” means any pipeline constructed for, or converted for, use in the transport of carbon dioxide for purposes of geologic sequestration.

#### **SEC. 5. SEVERABILITY OF PROVISIONS.**

If any provision of this act, or the application of any provision of this act to any person or circumstance, is held invalid, the application of such provision to other persons or circumstances and the remainder of this act shall not be affected thereby.

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 pro-  
5 ject” means a project to construct a CO<sub>2</sub> pipeline after the date  
6 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 agency, 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 hereunder, 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 ence 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 Feder-  
2           al 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 AND PERFORMANCE-**  
4 **BASED APPROACH TO REGULATING THE**  
5 **GEOLOGIC SEQUESTRATION OF CARBON**  
6 **DIOXIDE.**

7 (a) THE CONGRESS FINDS AND DECLARES:

8 (b) IN GENERAL.—Because at present there is limited experi-  
9 ence with large-scale geologic sequestration of carbon dioxide, regula-  
10 tions developed to govern GS site permitting operation, and issuance  
11 of a certificate of closure, including criteria for a transition to long-  
12 term stewardship, should emphasize the promulgation of adaptive and  
13 performance-based rules and standards to encourage flexibility and  
14 learning, and mandate a systematic process to regularly review and  
15 improve the regulation of GS.

16 (c) DEVELOPMENT OF PERFORMANCE-BASED RULES AND  
17 STANDARDS.—The objective of rules and standards developed by the  
18 Environmental Protection Agency for permitting and monitoring the  
19 operation of GS Projects shall be to assure that these activities are  
20 conducted in a manner that provides reasonable protection to health,  
21 safety and the environment. Similarly, the objective of the standards or  
22 criteria developed by the Federal Geologic Sequestration Board for  
23 accepting GS sites into long-term stewardship and managing those  
24 sites once they have entered long-term stewardship shall be to assure  
25 that these standards, criteria and management activities continue to  
26 provide reasonable protection to health, safety and the environment.  
27 Consistent with those objectives, both the Environmental Protection  
28 Agency and the Federal Geologic Sequestration Board shall, to the ex-  
29 tent practicable, promulgate rules and formulate standards that are per-  
30 formance-based such that compliance strategies may evolve with in-

1 creased knowledge, while the required level of regulatory performance  
2 remains constant.

3 **SEC. 202. CREATION OF A CCS TECHNICAL ADVISORY**  
4 **COMMITTEE OF THE NATIONAL RESEARCH**  
5 **COUNCIL.**

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

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

18 (1) how regulations and standards for permitting and oper-  
19 ating a carbon dioxide geologic sequestration facility should  
20 best be shaped to provide reasonable protection to health, safe-  
21 ty and the environment;

22 (2) the feasibility of adaptive strategies and performance-  
23 based standards that improve the effectiveness of GS opera-  
24 tions with no loss of protection to health, safety and the envi-  
25 ronment; and,

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

28 (c) PERIODIC REVIEW.—No later than seven years after the  
29 NRC CCS Technical Advisory Committee’s initial review, and at least  
30 every seventh year thereafter, the Administrator and the Chairperson

1 the Federal Geologic Sequestration Board shall jointly request the  
2 Committee be reconvened to:

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

6 (2) identify research to provide the foundation for improv-  
7 ing the formulation of standards in the future; and,

8 (3) publish a summary of its findings and make recommen-  
9 dations regarding the following:

10 (A) modifications to performance-based elements of  
11 the regulations, such as clearer articulation of objectives,  
12 specification of performance standards, guidance on as-  
13 sessment methodologies to insure that performance stand-  
14 ards are met, and requirements for overall accountability;

15 (B) modifications to the prescriptive elements of the  
16 regulations to make the requirements reflect the best cur-  
17 rent science, or to advance them toward being more per-  
18 formance-based;

19 (C) revise how the regulatory authority for GS is  
20 balanced between EPA programs and Federal and State  
21 regulators, concentrating on streamlining oversight, reduc-  
22 ing duplication and eliminating regulatory gaps;

23 (D) propose new legislation, or amendments to ex-  
24 isting laws that could improve the environmental perfor-  
25 mance, economic efficiency, or GHG reduction capacity of  
26 GS; and,

27 (E) any other necessary changes based on scientific,  
28 technologic and economic developments.

29 (d) FUNDING MECHANISM.—Funding for the first review by the  
30 CCS Technical Advisory Committee of the NRC shall be provided  
31 from the operating budget of the Environmental Protection Agency in

1 an amount not to exceed \$800,000. Funding for subsequent reviews by  
2 the CCS Technical Advisory Committee shall be provided from the  
3 carbon sequestration trust fund established under section 403(d) in an  
4 amount jointly determined to be appropriate by the Administrator and  
5 the Chairperson the Federal Geologic Sequestration Board.

6 **SEC. 203. REQUIREMENTS FOR PERIODIC REVIEW AND**  
7 **REVISIONS.**

8 (a) PERIODIC REVIEW AND REVISION OF REGULATIONS FOR GS  
9 PROJECTS.—

10 (1) Within eight years from the date of the NRC CCS  
11 Technical Advisory Committee’s initial review conducted un-  
12 der section 202(b), and at least every eighth year thereafter, the  
13 Environmental Protection Agency shall review, and if neces-  
14 sary, revise the details of the regulations and standards it has  
15 promulgated for GS projects.

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

20 (3) The Environmental Protection Agency’s review shall be  
21 informed by the summary of accumulated experience devel-  
22 oped by the CCS Technical Advisory Committee of the Na-  
23 tional Research Council; by any recommendations that that  
24 Committee may make; and by any public comments received  
25 by the Administrator as a result of the call for public com-  
26 ments. In accordance with the requirements of the Administra-  
27 tive Procedures Act, a description of any resulting changes  
28 shall be published in the Federal Register and adopted only af-  
29 ter public comment and review. As part of this review, and  
30 consistent with the objective of assuring reasonable protection  
31 to health, safety and the environment, the Agency shall consid-

1 er whether any procedure-based regulation it previously prom-  
2 ulgated should be replaced by a performance-based regulation.

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

5 (1) Within eight years from the date of the NRC CCS  
6 Technical Advisory Committee's initial review conducted un-  
7 der section 202(b), and at least every eighth year thereafter, the  
8 Federal Geologic Sequestration Board shall review and, if nec-  
9 essary, revise in light of the recommendations and accumulated  
10 experience reviewed by the CCS Technical Advisory Commit-  
11 tee of the National Research Council, the details of its rules for  
12 accepting GS projects into long-term stewardship, and its pro-  
13 cedures for monitoring and otherwise managing projects held  
14 in long-term stewardship.

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

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

1    **SEC. 204. JUDICIAL REVIEW.**

2           Nothing in this title shall affect any otherwise available judicial  
3 review of agency action. This title is intended only to improve the in-  
4 ternal management of the regulation of GS projects, and does not cre-  
5 ate any right or benefit, substantive or procedural, enforceable at law  
6 or equity by a party against the United States, its agencies or instru-  
7 mentalities, its officers or employees, or any other person.

8

9

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

4 **SUBTITLE A—GENERAL**

5 **SEC. 301. DEFINITIONS.**

6 For the purposes of this title:

7 (a) **CO<sub>2</sub> INJECTION PERMIT.**—The term “CO<sub>2</sub> Injection Permit”  
8 refers to a UIC permit issued by the UIC CO<sub>2</sub> Regulator under subtitle  
9 B for the permanent geologic sequestration of carbon dioxide.

10 (b) **INTERSTATE GEOLOGIC SEQUESTRATION PROJECT.**—The  
11 term “interstate geologic sequestration project” means a geologic se-  
12 questration project that will require the use of pore space located in  
13 more than one State.

14 (c) **SDWA.**—The term “SDWA” means the Safe Drinking Wa-  
15 ter Act.

16 (d) **SUBSURFACE PROJECT BOUNDARY.**—The term “subsurface  
17 project boundary” refers to the ex ante estimated spatial extent of free-  
18 phase injected CO<sub>2</sub>, delineated both by the lateral and vertical bounda-  
19 ries from the time injection commences to the time that free-phase  
20 CO<sub>2</sub> ceases flowing, and taking into account a margin of error in pre-  
21 dictions.

22 (e) **UIC.**—The term “UIC” means underground injection con-  
23 trol.

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



1 (g) UNDERGROUND SOURCE OF DRINKING WATER.—The term  
2 “underground source of drinking water” means underground water  
3 with less than 10,000 mg/l total dissolved solids.

4 **SUBTITLE B—PERMITS TO CONSTRUCT**  
5 **AND OPERATE GEOLOGIC SEQUESTRA-**  
6 **TION PROJECTS**

7 **SEC. 311. PURPOSE.**

8 The purpose of this title is to expand and make more compre-  
9 hensive the EPA’s Class VI UIC permitting rules for the permanent  
10 geologic sequestration of carbon dioxide so that they balance the need  
11 for permanent geologic sequestration of CO<sub>2</sub> with the need to protect  
12 underground drinking water supplies so as to ensure the overall safety  
13 and protection of human health and the environment.

14 **SEC. 312. PERMITTING UNDERGROUND INJECTION OF**  
15 **CARBON DIOXIDE FOR GEOLOGIC SEQUES-**  
16 **TRATION.**

17 (a) CO<sub>2</sub> UIC PROGRAM.—Not later than two years after the  
18 date of enactment of this Act, the Administrator shall revise and ex-  
19 pand the Class VI UIC permitting rules for the injection of carbon di-  
20 oxide for the purpose of geologic sequestration to include all require-  
21 ments in this title, and take into consideration any recommendations  
22 made by the NRC CCS Technical Advisory Committee’s first assess-  
23 ment carried out under section 202(b) of title II of this Act.

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

- 27 (1) The construction of any injection well or underground  
28 facility for geologic sequestration, and  
29 (2) The underground injection of carbon dioxide for geo-  
30 logic sequestration.

1 (c) NEW PROGRAM REQUIREMENTS.—The regulations under  
2 subsection (a) shall:

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

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

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

17 (4) require States seeking primary enforcement authority  
18 under the UIC program for permanent geologic sequestration  
19 of CO<sub>2</sub> to develop a framework and codify statutory authority  
20 for acquiring the necessary ownership interests, easements, or  
21 licenses necessary to occupy pore space;

22 (5) require State UIC programs to take into account the ef-  
23 fects that permanent geologic sequestration of CO<sub>2</sub> in the per-  
24 mitting State will have in any other State; and,

25 (6) ensure that any State with a reasonable prospect of be-  
26 ing affected by the grant of a CO<sub>2</sub> injection permit by another  
27 State shall have the right to intervene and participate in pro-  
28 ceedings conducted by the permitting State for consideration of  
29 a petition of a permit for underground injection of CO<sub>2</sub> for  
30 permanent geologic sequestration.

1 (7) require the UIC CO<sub>2</sub> Regulator to develop and imple-  
2 ment a communication strategy that maximizes transparency  
3 and educates the public about the permitting process and its en-  
4 forcement that includes, but is not limited to:

5 (A) basic information about geologic sequestration,  
6 existing geologic sequestration projects, and its role in cli-  
7 mate change mitigation, including a comparison to other  
8 low-carbon electric generation technologies;

9 (B) information about the permitting and risk miti-  
10 gation processes, as well as about the enforcement of regu-  
11 lations over geologic sequestration project developers; and,

12 (C) information describing how members of the  
13 general public or the local host communities can voice con-  
14 cerns.

15 (8) require the geologic sequestration project developer to  
16 prepare a public engagement plan that includes but is not lim-  
17 ited to:

18 (A) an assessment of the local community's needs,  
19 concerns, and any special social consideration that should  
20 be included in the engagement process;

21 (B) a plan to ensure that the community has easy  
22 access to information, including a strategy for the distribu-  
23 tion of information about the project to the local communi-  
24 ty and stakeholders, including the media to be used and the  
25 timing of information releases during not only the permit-  
26 ting process but the active CO<sub>2</sub> injection and post-closure  
27 phases at the geologic sequestration site as well;

28 (C) a procedure for addressing community con-  
29 cerns;

30 (D) an overview of the information content that  
31 will be provided to the local community, addressing the

1 costs, benefits and risks of the project, as well as mitiga-  
2 tion, emergency management and contingency plans; and,

3 (E) a plan to reevaluate and revise the community  
4 engagement plan as necessary.

5 (9) require enhanced hydrocarbon recovery projects to hold  
6 a valid CO<sub>2</sub> injection permit in order to be considered a geolog-  
7 ic sequestration project for the purposes of any Federal green-  
8 house gas emissions reduction program; and,

9 (10) establish a coordinated approach to certifying and  
10 permitting underground injection of CO<sub>2</sub> for permanent geo-  
11 logic sequestration, taking into account, and reducing redun-  
12 dancy with, all relevant statutory authorities.

13 (11) Regulations shall be subject to periodic review and re-  
14 vision as per title II, section 203(a), coordinating with, and tak-  
15 ing into consideration the recommendations made by, the NRC  
16 CCS Technical Advisory Committee (title II, section 202(b))  
17 and the Federal Geologic Sequestration Board (title II, section  
18 203(b)).

19 (d) SDWA DETERMINATION.—

20 (1) DEFINITION—For purposes of this section, a SDWA de-  
21 termination is a determination that one or more provisions of  
22 Part C of the Safe Drinking Water Act are inapplicable in  
23 whole or in part to a specific source of underground drinking  
24 water affected by the CO<sub>2</sub> injection permit.

25 (2) DETERMINATION.—The UIC CO<sub>2</sub> Regulator may make  
26 a SDWA determination only if the regulator finds that the pub-  
27 lic benefit of geologic sequestration of carbon dioxide out-  
28 weighs the protection of the underground drinking water source  
29 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 UIC  
7 CO<sub>2</sub> 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, and such other factors as  
17 the 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) If a geologic sequestration project developer applies for  
21 CO<sub>2</sub> injection permit under this subtitle, the UIC CO<sub>2</sub> Regula-  
22 tor shall:

23 (A) provide public notice in conformance with the  
24 requirements of 40 C.F.R. 25;

25 (B) conform to the procedures for decision-making  
26 under 40 C.F.R. 25; and,

27 (C) afford a period of 90 days for geologic seques-  
28 tration project developers and operators who wish to con-  
29 tend that the grant of a CO<sub>2</sub> injection permit under this sub-  
30 title and, if applicable, a pore space permit under subtitle C  
31 may impair its own ability to develop and operate an alter-

1 native and potentially competing geologic sequestration  
2 project, or impair the operation of a currently operating ge-  
3 ologic sequestration project, to intervene and file a compet-  
4 ing application, such that:

5 (i) Interveners shall be entitled to equal consid-  
6 eration with the original applicant if it files a com-  
7 peting application within 90 days of public notice  
8 for the original application.

9 (ii) If a competing application is filed more than  
10 90 days after the original application, the original  
11 application shall be considered and resolved upon  
12 its own merits without the necessity of considera-  
13 tion of the secondary competing application.

14 (2) The UIC CO<sub>2</sub> Regulator shall have the authority to at-  
15 tach to the issuance of the CO<sub>2</sub> injection permit, and to exercise  
16 the rights and privileges granted thereunder, such terms and  
17 conditions as are reasonable and necessary to effectuate the  
18 purposes of this title.

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

27 (4) The UIC CO<sub>2</sub> Regulator may, after notice and oppor-  
28 tunity for comment, revoke in whole or in part a UIC CO<sub>2</sub> in-  
29 jection permit issued under this section if the Regulator deter-  
30 mines that the permit-holder has failed to comply with the re-

1           quirements of this title, the rules thereunder, or conditions of  
2           the permit.

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

5                     (A) the State UIC CO<sub>2</sub> Regulator fails to take into  
6                     account the effects that permanent geologic sequestration  
7                     of CO<sub>2</sub> in the permitting State will have in any other State;  
8                     and,

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

15           (f) INTERSTATE GEOLOGIC SEQUESTRATION PROJECTS.—

16                    (1) States may enter into agreements with respect to permit-  
17                    ting and regulating a geologic sequestration project that will  
18                    require the use of geologic formations and pore space located  
19                    in more than one State.

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

24           **SEC. 313. CONFORMING AMENDMENTS.**

25                    (a) ENERGY INDEPENDENCE AND SECURITY ACT.—The first  
26                    sentence of section 706 of title VII of the Energy Independence and  
27                    Security Act (42 U.S.C. § 17254) is amended—

28                    (1) by striking out “The” at the beginning of the first sen-  
29                    tence and inserting “Subject to title III of the Carbon Capture  
30                    and Sequestration Regulatory Act of 2012, the”; and,

1 (2) by striking out “Nothing” at the beginning of the se-  
2 cond sentence and inserting “Subject to such title, nothing”.

3 (b) SAFE DRINKING WATER ACT.—

4 (1) Section 1421(b)(1) of the Safe Drinking Water Act of  
5 1974 as amended (42 U.S.C. § 300h) is amended by:

6 (A) inserting at the beginning of subparagraph (B)  
7 “except as provided in section 312(d) of the Carbon Cap-  
8 ture and Sequestration Regulatory Act of 2012,” and,

9 (B) inserting a new subparagraph “(E)”, which shall  
10 read “Shall meet all requirements of the regulations in ef-  
11 fect under title III of the Carbon Capture and Sequestration  
12 Regulatory Act of 2012.”

13 (2) Section 1422(b)(1)(A)(i) of the Safe Drinking Water  
14 Act (42 U.S.C. § 300h-1) is amended by inserting at the end  
15 thereof “and title III of the Carbon Capture and Sequestration  
16 Regulatory Act of 2012.”

17 **SUBTITLE C—ACCESS TO PORE SPACE**  
18 **FOR GEOLOGIC SEQUESTRATION**

19 **SEC. 321. PURPOSE.**

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

27 **SEC. 322. DEFINITIONS.**

28 For the purpose of this subtitle:

29 (a) MATERIAL IMPAIRMENT.—The term “material impairment”  
30 means the subsurface interest-holder has suffered actual and substan-



1 tial damages resulting from the injection or migration of carbon diox-  
2 ide.

3 (b) NON-SPECULATIVE ECONOMIC INTEREST.—The term “non-  
4 speculative economic interest” means the ability to recover actual  
5 mineral resources or engage in other current or imminent subsurface  
6 activities that have substantial economic value. It shall be presumed,  
7 subject to rebuttal, that use of pore space for which a CO<sub>2</sub> injection  
8 permit is required under subtitle B is a speculative interest until such a  
9 permit is issued. This presumption shall be overcome if the ownership  
10 interests, easements, or licenses necessary to use the pore space for  
11 permanent geologic sequestration of CO<sub>2</sub> have been acquired by the  
12 project developer either through State statutory authority or voluntary  
13 contract *and* the geologic strata containing the pore space is actively  
14 being characterized and tested for the purposes of developing a geo-  
15 logic sequestration project.

16 (c) PORE SPACE PERMIT.—The term “pore space permit” refers  
17 to a permit issued by the UIC CO<sub>2</sub> Regulator under subtitle C authoriz-  
18 ing the exclusive right to access and use pore space for the permanent  
19 geologic sequestration of CO<sub>2</sub> within the subsurface project boundary.

20 (d) PREEXISTING INTEREST.—The term “preexisting interest”  
21 means an interest in demonstrated economically recoverable mineral  
22 resources or in other subsurface activities that are non-speculative  
23 economic interests.

24 (e) SUBSURFACE TRESPASS.—The term “subsurface trespass”  
25 means geologic sequestration by a site operator that results in a physi-  
26 cal invasion of pore space in which the site operator does not have the  
27 requisite ownership interest, easement, or license to occupy.

28 **SEC. 323. MANAGING ACCESS AND USE OF PORE SPACE**  
29 **FOR PERMANENT GEOLOGIC SEQUESTRA-**  
30 **TION OF CARBON DIOXIDE.**

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

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

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

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

21 (c) APPLICATION FOR PORE SPACE PERMIT.—If a CO<sub>2</sub> injection  
22 permit applicant seeks to develop a geologic sequestration project in a  
23 State (or States ) that has (or have) not codified statutory authority for  
24 acquiring and using pore space for permanent geologic sequestration  
25 of CO<sub>2</sub> *and* the applicant has not acquired through voluntary contract  
26 the ownership interests, easements, or licenses necessary to occupy  
27 pore space, the project developer, in connection with an application for  
28 a CO<sub>2</sub> injection permit under subtitle B, may include a request for a  
29 pore space permit.

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

1 (A) provide public notice in conformance with the  
2 requirements of 40 C.F.R. 124.10, and

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

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

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

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

18 (3) A competing geologic sequestration project applicant  
19 who intervenes under paragraph (1)(B) must indicate their in-  
20 tention to file a competing CO<sub>2</sub> injection permit application  
21 within 90 days of the original project application in accordance  
22 with section 312(e)(1)(C) of subtitle B.

23 (4) A pore space permit shall not be issued if the applicant  
24 has not already been issued a CO<sub>2</sub> injection permit under sec-  
25 tion 312(e) of this title, or is not concurrently applying for both  
26 a CO<sub>2</sub> injection permit and a pore space permit.

27 (d) CONSIDERATION OF PREEXISTING INTERESTS IN SCOPE OF  
28 PROJECT.—

29 (1) If it is demonstrated that a preexisting interest would be  
30 materially impaired by the granting of a CO<sub>2</sub> injection permit  
31 for permanent geologic sequestration of carbon dioxide, the

1 geologic sequestration project should be permitted only in ac-  
2 cordance with:

3 (A) a modification of the project that avoids the im-  
4 pairment; or

5 (B) a contractual agreement between the owner of  
6 the preexisting interest and the project applicant; or

7 (C) a finding by the UIC CO<sub>2</sub> Regulator that con-  
8 demnation of the preexisting interest through the exercise  
9 of eminent domain pursuant to subsection (e) of this subti-  
10 tle, with appropriate compensation, is necessary to the  
11 proper operation the geologic sequestration project under  
12 application.

13 (2) In connection with a pending application proceeding for  
14 geologic sequestration of carbon dioxide under this subsection,  
15 the UIC CO<sub>2</sub> Regulator may exclude from the subsurface pro-  
16 ject boundary, or authorize the exercise of eminent domain un-  
17 der subsection (e) for, any portion of a geologic formation  
18 where the formation is:

19 (A) subject to active and properly licensed explora-  
20 tion or production of hydrocarbon resources or hard miner-  
21 als;

22 (B) actively used for the properly licensed injection  
23 of brines or other fluids for the purpose of enhanced recov-  
24 ery of hydrocarbon resources;

25 (C) actively used for storage of crude oil;

26 (D) actively used for injection of fluid wastes for  
27 disposal pursuant to a valid UIC permit;

28 (E) actively used for certificated natural gas storage;

29 (F) actively used for properly licensed groundwater  
30 recharge and recovery;

- 1 (G) actively used for properly licensed compressed
- 2 air storage;
- 3 (H) actively used for geothermal electric power
- 4 generation;
- 5 (I) actively being subjected to geophysical and envi-
- 6 ronmental testing for the purpose of developing a geologic
- 7 sequestration project, provided that the ownership interests,
- 8 easements, or licenses necessary to occupy the pore space
- 9 for permanent geologic sequestration of CO<sub>2</sub> have been ac-
- 10 quired by the project developer either through State statuto-
- 11 ry authority or voluntary contract; or
- 12 (J) actively used for other purposes the UIC CO<sub>2</sub>
- 13 Regulator deems relevant.

14 (e) RIGHT OF EMINENT DOMAIN.—When the UIC CO<sub>2</sub> Regula-

15 tor finds that condemnation of a preexisting interest is necessary to

16 ensure the proper operation and protect integrity of the geologic se-

17 questration project under application:

18 (1) the holder of a CO<sub>2</sub> injection permit to whom a pore

19 space permit was issued under subsection (c) of this subtitle,

20 when it cannot acquire by contract, or is unable to agree with

21 the owner of the preexisting interest to the compensation to be

22 paid for the necessary surface and subsurface property rights to

23 construct, operate, and maintain underground wells and facili-

24 ties for the permanent sequestration of carbon dioxide, may ac-

25 quire the same by the exercise of the right of eminent domain

26 in the district court of the United States for the district in which

27 such property interest is located; and,

28 (2) the practices and procedures in any action or proceeding

29 for that purpose in the United States shall conform as nearly as

30 possible with the practices and procedures in a similar action or

1 proceeding in the courts of the State where the property is situ-  
2 ated.

3 (f) DOMINANCE OF MINERAL ESTATE.—

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

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

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

18 (g) FEDERAL REMEDY FOR CLAIMS OF SUBSURFACE TRES-  
19 PASS.—

20 (1) A claim of subsurface trespass shall not be actionable  
21 against a site operator conducting geologic sequestration in ac-  
22 cordance with a valid CO<sub>2</sub> injection permit issued by the UIC  
23 CO<sub>2</sub> Regulator and to whom a pore space permit has been is-  
24 sued under subsection (c) of this subtitle unless the injection or  
25 migration of carbon dioxide materially impairs:

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

29 (B) interests outside the subsurface project bounda-  
30 ry.

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

9           (3) A surface or subsurface property interest-holder shall be  
10 permitted to recover money damages only for loss of a non-  
11 speculative value resulting from the injection and migration of  
12 carbon dioxide.

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

17           (B) Punitive damages shall be barred if the site op-  
18 erator who causes the material impairment acts in compli-  
19 ance with the terms of the CO<sub>2</sub> injection permit.

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

24           (4) Injunctive relief for subsurface trespass shall not be al-  
25 lowed unless the holder of the property interest shows that the  
26 harm to the property interest clearly outweighs the utility of the  
27 sequestration of carbon dioxide.

28           (5) The United States district court for the district in which  
29 a trespass claim arises shall have exclusive jurisdiction over  
30 such a claim, and the United States Court of Appeals for the

1 District of Columbia shall hear any appeal of a district court  
2 ruling under this subsection.

3 (h) REGULATORY TAKINGS.—

4 (1) Any claim for a regulatory taking without just compen-  
5 sation that arises out of an action by the United States or a  
6 State under this title shall be filed against the United States in  
7 the United States Court of Federal Claims pursuant to chapter  
8 91 of title 28 of the United States Code.

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

11 **SUBTITLE D—GEOLOGIC SEQUESTRA-**  
12 **TION OF CARBON DIOXIDE ON FEDERAL**  
13 **LANDS**

14 **SEC. 331. PURPOSE.—**

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

19 **SEC. 332. DEFINITIONS.**

20 For the purposes of this subtitle:

21 (a) BLM.—The term “BLM” means the Bureau of Land Man-  
22 agement.

23 (b) FEDERAL LANDS.—The term “Federal lands” refers to lands  
24 managed by the BLM and FS that have been determined by each agen-  
25 cy to be available for use for permanent geologic sequestration of car-  
26 bon dioxide.

27 (c) FS.—The term “FS” means the Forestry Service.

28 (d) PLAN OF DEVELOPMENT.—The term “Plan of Develop-  
29 ment” means a detailed description of the design of the geologic se-  
30 questration project and its facilities submitted by a project develop-



1 ment license applicant to the BLM. The Plan of Development helps the  
2 BLM assess the public safety and environmental effects of the pro-  
3 posed geologic sequestration project and its facilities.

4 (e) SECRETARY.—Unless otherwise specified, the term “Secre-  
5 tary” means the Secretary of the United States Department of the Inte-  
6 rior.

7 (f) SPLIT ESTATE.—The term “split estate” means lands in  
8 which the Federal government owns the surface rights, but the mineral  
9 rights are privately owned.

10 **SEC. 333. PERMITTING AND LICENSING GEOLOGIC SE-**  
11 **QUESTRATION ON FEDERAL LANDS.**

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

17 (b) REQUIREMENTS.—

18 (1) Through an integrated permitting system, the BLM and  
19 the EPA should jointly license sequestration projects on Feder-  
20 al lands and split pursuant to the UIC permitting procedures  
21 and requirements under subtitle B of this title.

22 (2) TWO-PHASE APPLICATION PROCEDURE.—The BLM  
23 shall issue perpetual easements under title V of the Federal  
24 Land Management and Policy Act for geologic sequestration  
25 exploration and development projects on Federal lands through  
26 a two-phase license procedure.

27 (A) PHASE I: PROJECT AREA LICENSE.—A project  
28 area license grants the geologic sequestration project appli-  
29 cant the exclusive right to conduct environmental and geo-  
30 logical testing and monitoring within the proposed subsur-  
31 face project boundary.

1 (i) Priority of application will be given to the  
2 first complete application the BLM receives.

3 (ii) The project area license term shall be six  
4 years.

5 (iii) During the six-year project area license  
6 term, the pore space within the proposed subsurface  
7 project boundary shall not be available for other ge-  
8 ologic sequestration project easements.

9 (iv) The holder of a project area license shall  
10 formulate a Plan of Development during the six-  
11 year license term.

12 (B) PHASE II: PROJECT DEVELOPMENT LICENSE.—A  
13 project development license, in combination with a CO<sub>2</sub> in-  
14 jection permit issued pursuant to subtitle B, grants the pro-  
15 ject applicant the right to construct, operate, and maintain  
16 underground wells as well as surface and subsurface facili-  
17 ties for the permanent geologic sequestration of CO<sub>2</sub> within  
18 the subsurface project boundary defined in the CO<sub>2</sub> injec-  
19 tion permit and project development license.

20 (i) A project development license shall be  
21 awarded based on the merits of the applicant's Plan  
22 of Development.

23 (ii) No CO<sub>2</sub> injection permit or project devel-  
24 opment license may be issued to any other person to  
25 inject CO<sub>2</sub> for the purpose of geologic sequestration  
26 of CO<sub>2</sub> within the subsurface project boundary de-  
27 fined in the existing CO<sub>2</sub> injection permit and pro-  
28 ject development license.

29 (3) LICENSING GEOLOGIC SEQUESTRATION PROJECTS ON  
30 SPLIT ESTATES.—The EPA CO<sub>2</sub> injection permit proceedings  
31 conducted under subtitle B for geologic sequestration projects

1 proposed on split estates shall be subject to the requirements  
2 under subtitle C of this title if the project applicant has not ac-  
3 quired the ownership interests, easements, or licenses neces-  
4 sary to occupy pore space in all applicable states through state  
5 statutory authority or voluntary contract, and instead elects to  
6 apply for a pore space permit pursuant to subtitle C.

7 (4) COLLECTION OF ANNUAL FEES AND RENT.—The BLM  
8 shall annually charge administrative fees and collect an annual  
9 nominal rent from project operators for the administration and  
10 management of geologic sequestration licenses.

11 (5) ENVIRONMENTAL REVIEW OF FEDERAL ACTIONS AU-  
12 THORIZING PRIVATE GEOLOGIC SEQUESTRATION PROJECTS ON  
13 FEDERAL LANDS AND SPLIT ESTATES.—The BLM shall be the  
14 lead agency for the purpose of Federal environmental review  
15 pursuant to the National Environmental Policy Act of 1969 (42  
16 U.S.C. § 4321 et seq.) and, in consultation with all affected  
17 agencies, shall prepare a single environmental review docu-  
18 ment for each license application phase to be used as the basis  
19 for decisions under Federal law related to each project phase.

20 (A) NEPA REVIEW OF THE PROJECT AREA LI-  
21 CENSE.—The environmental review for the project area li-  
22 cense shall only assess likely environmental effects of the  
23 testing facilities to be constructed and operated under the  
24 terms of that license. The environmental effects of perma-  
25 nent geologic sequestration shall not be considered for en-  
26 vironmental review of the project area license.

27 (B) NEPA REVIEW OF THE PROJECT DEVELOPMENT  
28 LICENSE.—The environmental review for the project de-  
29 velopment license shall assess the likely environmental ef-  
30 fects of permanent geologic sequestration of CO<sub>2</sub> and the  
31 facilities and wells constructed for such purpose.

1 **SEC. 334. CONFORMING AMENDMENTS.**

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

5 (1) “permanent geologic sequestration of carbon dioxide,”.

6 (b) Section 501 (a) of the Federal Land Policy and Manage-  
7 ment Act of 1976 as amended (43 U.S.C. § 1761) is amended by add-  
8 ing a new paragraph “(a)(8)” and inserting “pipelines and other sys-  
9 tems for the transportation or distribution of carbon dioxide and for the  
10 permanent geologic sequestration of carbon dioxide and terminal facil-  
11 ities in connection therewith.”

12

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 has  
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 (g) FIRST MOVER PROJECT.—The term “first mover project” re-  
6 fers to a sequestration project determined by the Secretary to be one of  
7 the first of its kind to be operated and for this reason warranting spe-  
8 cial attention if deemed to be in the national interest.

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

10 (a) IN GENERAL.—Except as otherwise provided in subsection  
11 (b), the Federal Geologic Sequestration Board shall be responsible for  
12 the long-term stewardship of a GS project at such time as it issues a  
13 certificate of closure for the project.

14 (b) TRANSFER TO STATE.—

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

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

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

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

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

4           (b) STEWARDSHIP FEES.—In carrying out the stewardship pro-  
5    gram under this title, the Board shall require operators of GS projects  
6    to pay a risk-based fee at the time of injection, in an amount to be es-  
7    tablished in accordance with subsection (c), for each ton of carbon di-  
8    oxide injected by the GS project into geologic formations during the  
9    operational phase of the facility.

10          (c) AMOUNT OF FEES.—

11           (1) SETTING FEES.—

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

15                          (i) the minimum and maximum balance for the  
16                          Fund; and,

17                          (ii) the amount of the fee required under subsec-  
18                          tion (b).

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

21                          (i) the estimated quantity of carbon dioxide to  
22                          be injected annually into geologic formations by all  
23                          operating commercial GS projects;

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

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

27                          (iv) other factors relating to the risk of the GS  
28                          project and associated geologic formation; and,

29                          (v) impact on commercial and economic viabil-  
30                          ity of GS projects.

1 (C) CONSIDERATION OF PROJECT RISKS.—In estab-  
2 lishing the amount of the fees under subparagraph (A)(ii),  
3 the Board shall, to the extent practicable, use a fee system  
4 that is based on the level of risk associated with a specific  
5 geologic formation and project development plan and oper-  
6 ator history, in order to provide an incentive for the selec-  
7 tion and operation of the well-performing GS projects.

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

10 (i) to ensure that there are sufficient amounts in  
11 the Fund to make the payments required under sub-  
12 section (d)(2)(A); and,

13 (ii) to determine whether or not to increase or  
14 decrease the amount, or discontinue collection, of  
15 the fee, after taking into consideration—

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

18 (II) the number and estimated value of cur-  
19 rent and projected claims against the Fund; and,

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

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

25 (d) CARBON SEQUESTRATION TRUST FUND.—

26 (1) ESTABLISHMENT.—There is established in the Treasury  
27 of the United States a revolving fund, to be known as the “Car-  
28 bon Sequestration Trust Fund”, consisting of such amounts as  
29 are deposited under this section.

30 (2) USE OF FUND.—



1 (A) IN GENERAL.—Amounts in the Fund shall be  
2 made available, without further appropriation or fiscal year  
3 limitation—

4 (i) to the Board for the payment, in accordance  
5 with section 404, of civil claims respecting a GS  
6 project that are brought after a certificate of closure  
7 for the project has been issued;

8 (ii) to the Board, or State agency with Board  
9 approval, for long-term stewardship after the date of  
10 issuance of a certificate for closure;

11 (iii) to the Board, or State agency with Board  
12 approval, to pay any reasonable and verified admin-  
13 istrative cost incurred by the Board or State agency  
14 in carrying out the stewardship program;

15 (iv) to the Board for emergency remediation ac-  
16 tions under section 407; and,

17 (v) to the Board, for the cost of any compensa-  
18 tory action that may be required under title V.

19 (B) LIMITATION.—Amounts in the Fund shall only  
20 be used for the purposes described in clause (i), (ii), (iii), or  
21 (iv) or (v) of subparagraph (A).

22 (3) REPAYABLE ADVANCES.—

23 (A) IN GENERAL.—If sufficient amounts are not  
24 available in the Fund to cover potential claims, the Board  
25 may request from the Secretary of the Treasury an interest-  
26 bearing advance in funding from the Treasury to carry out  
27 the Program.

28 (B) TERMS AND CONDITIONS.—The terms and con-  
29 ditions for the repayment of an advance under subpara-  
30 graph (A) shall be specified by the Secretary of the Treas-  
31 ury.

1    **SEC. 404. CIVIL CLAIMS.**

2           (a) **BOARD ADJUDICATION OF CLAIMS.**—The Board shall pay  
3 any civil claim for damage respecting a GS project for which a certifi-  
4 cate of closure has been issued. Such claim shall be—

- 5                 (1) filed with the Board;  
6                 (2) adjudicated in accordance with sections 554, 557, and  
7                 558 of title 5, United States Code; and,  
8                 (3) paid in accordance with compensation rules under  
9                 405(b)(3) of this title.

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

- 13                 (1) the owner or operator of the GS project, except as pro-  
14                 vided in subsection (c);  
15                 (2) the generator of the carbon dioxide injected into the ap-  
16                 plicable geologic formation in connection with the GS project;  
17                 (3) the owner or operator of the pipeline used to transport  
18                 the carbon dioxide to the GS project; or  
19                 (4) any State agency that has long-term stewardship re-  
20                 sponsibility under section 402(b).

21          (c) **BOARD RECOVERY FROM OPERATOR.**—Notwithstanding  
22 subsection (b)(1), the operator of a GS project shall be liable to the  
23 Board for any compensation paid or remediation cost incurred as a re-  
24 sult of—

- 25                 (1) the project operator’s willful failure to comply with any  
26                 regulatory requirement;  
27                 (2) the reliance by the Federal or State agency issuing a  
28                 certificate of closure on any untrue statement of a material fact  
29                 by the project operator; or  
30                 (3) the omission by the project operator of a statement of  
31                 material fact necessary in order to make the statements made

1 not misleading, (in light of the circumstances under which they  
2 were made) to the Federal or State agency.

3 (d) CLAIMS PRIOR TO CERTIFICATE OF CLOSURE.—Nothing in  
4 this title affects civil liability for damage claims asserted prior to issu-  
5 ance of a certificate of closure.

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

7 (a) ESTABLISHMENT.—There is hereby established, within the  
8 Department of Energy, an independent agency to be known as the  
9 Federal Geologic Sequestration Board. The Board shall consist of  
10 three members appointed by the President by and with the advice and  
11 consent of the Senate for terms of six years, except that—

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

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

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

19 (b) FUNCTIONS.—

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

25 (2) STANDARDS.—The Board, after consultation with the  
26 Administrator, shall establish standards for any monitoring,  
27 measurement, verification, and site remediation activities nec-  
28 essary to protect health, safety, and the environment during  
29 long-term stewardship.

30 (3) COMPENSATION STANDARDS, PROCEDURES, AND  
31 SCHEDULES.—The Board shall by rule prescribe compensation

1 standards, procedures, and schedules for determining the nature  
2 and amount of compensation that will be paid from the Trust  
3 Fund for civil claims for damage by the Board under this title.  
4 Rules written under this paragraph shall include procedures  
5 under which the Board will take any compensatory action re-  
6 quired under section 503.

7 (4) PRIVATE INSURERS.—The Board may contract with pri-  
8 vate insurers to provide claim adjustment services for public li-  
9 ability claims.

10 (c) POWERS.—The Board has the authority to—

11 (1) prescribe, by rule or order, such requirements for moni-  
12 toring GS projects and for making such inspections and reports  
13 as may be necessary or appropriate to carry out this title;

14 (2) enter onto the premises or property of any GS project to  
15 carry out this title;

16 (3) commence a civil action in the United States District  
17 Court to recover from any project operator any fees not paid  
18 when due, after notice and an opportunity to cure any deficien-  
19 cy within thirty days of such notice;

20 (4) bring an action against any person in the United States  
21 District Court to enforce the provisions of this title or rules or  
22 orders thereunder, and to obtain appropriate injunctive or other  
23 relief; and,

24 (5) seek civil penalties for violations of provisions of this  
25 Act, as provided under subsection (d).

26 (d) PENALTIES.—

27 (1) CIVIL PENALTIES.—Any person who knowingly violates  
28 any provision of this title or any rule or order thereunder shall  
29 be subject to a civil penalty of \$50,000 per violation.

30 (2) CRIMINAL PENALTIES.—Any person who knowingly  
31 and willfully violates any provision of this title or any rule or

1 order thereunder shall be subject to a fine of \$500,000 or im-  
2 prisonment for a term of two years, or both.

3 (e) JUDICIAL REVIEW.—Rules of general applicability pre-  
4 scribed under this title by the Board shall be reviewed by the United  
5 States Courts of Appeal in accordance with chapter 158 of title 28,  
6 United States Code. All other agency actions under this title shall be  
7 reviewed in accordance with chapter 7 of title 5, United States Code.

8 **SEC. 406. FIRST MOVER PROJECTS.**

9 (a) INDEMNIFICATION.—Notwithstanding section 1341 of title  
10 31, United States Code, but subject to limitations in Appropriations  
11 Acts, the Secretary is authorized to enter into agreements to indemnify  
12 owners and operators of qualifying geologic sequestration projects for  
13 all or part of the costs incurred to satisfy civil claims for damage  
14 (whenever made) that arise from carbon dioxide injection into a geo-  
15 logic formation during the demonstration period of a first mover pro-  
16 ject, as determined by the Secretary. The Secretary may impose such  
17 conditions on such indemnification agreements as may be necessary or  
18 appropriate to protect the financial interest of the United States, in-  
19 cluding a requirement that indemnification provided to qualifying pro-  
20 jects under this section be limited to the extent that Secretary deter-  
21 mines that potential long-term liabilities can be adequately addressed  
22 through the implementation of preceding sections of this title.

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

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

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

29 (3) injects the carbon dioxide into geologic formations that  
30 do not involve enhanced oil or gas recovery; and,

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

6           **SEC. 407. EMERGENCY SITE REMEDIATION.**

7           The Administrator may undertake emergency remediation ac-  
8           tion at any GS project for which a certificate of closure has not been  
9           issued if in the judgment of the Administrator an imminent danger to  
10          public health or safety so requires. Amounts held in the Fund shall be  
11          available for such purpose. The owner and the operator of the GS pro-  
12          ject shall be liable to the Administrator for any costs incurred for such  
13          remediation action. In addition the Board shall consider the cost of  
14          such expected or actual remediation when setting fees under section  
15          403(c)(1)(C). The Administrator shall maintain, directly or by prior  
16          contract, a stand-by emergency response capability for purposes of this  
17          section, and may enter into both advance and responsive contracts to  
18          carry out his 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 consid-  
30 ering:

1 (i) current standards established by industry  
2 bodies;

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 C.F.R. 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, transport-  
23 ed, vented, injected, and emitted as leakage by CO<sub>2</sub> capture  
24 facilities, CO<sub>2</sub> pipelines, and geologic sequestration facili-  
25 ties in order to determine:

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

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 Technical Advisory Committee to the National Research  
24 Council, the Administrator shall promulgate regulations that specify  
25 the requirements for backstop compensatory action for potential leak-  
26 age from sites where subsurface monitoring indicates loss of contain-  
27 ment, but a satisfactory surface monitoring program, as described in  
28 section 502(a)(1), cannot be implemented at the site due to technologi-  
29 cal or other factors. Backstop compensatory action shall be determined  
30 as a fraction of the 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 rec-  
7 onciliation 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 DIOX-  
13 IDE 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 report-  
17 ed in accordance with regulations established in section 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 section 502(a), cannot be implemented at the site due to tech-  
24 nological or other factors, the operator must take backstop  
25 compensatory action, in accordance with regulations estab-  
26 lished in section 503(c). Backstop compensatory action must  
27 be taken annually until accurate surface monitoring is complet-  
28 ed or subsurface monitoring indicates that injected CO<sub>2</sub> is suc-  
29 cessfully contained in a geologic formation.