

111TH CONGRESS
1ST SESSION

S. 2744

To amend the Energy Policy Act of 2005 to expand the authority for awarding technology prizes by the Secretary of Energy to include a financial award for separation of carbon dioxide from dilute sources.

IN THE SENATE OF THE UNITED STATES

NOVEMBER 5, 2009

Mr. BARRASSO (for himself, Mr. BINGAMAN, and Mr. ENZI) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

A BILL

To amend the Energy Policy Act of 2005 to expand the authority for awarding technology prizes by the Secretary of Energy to include a financial award for separation of carbon dioxide from dilute sources.

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

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Carbon Dioxide Cap-
5 ture Technology Act of 2009”.

6 **SEC. 2. FINDINGS AND PURPOSE.**

7 (a) FINDINGS.—Congress finds that—

1 (1) flue gases from coal-fired electric generating
2 facilities typically have carbon dioxide concentrations
3 of approximately 17 percent by volume;

4 (2) it is possible to separate carbon dioxide
5 from dilute sources and even the atmosphere, which
6 has a carbon dioxide concentration of 0.038 percent,
7 but substantial advances in research and technology
8 will be necessary to provide the separation in an eco-
9 nomical manner;

10 (3) developing practical separations of carbon
11 dioxide from dilute sources is important to the fu-
12 ture development of energy technology;

13 (4) economical onsite separation of atmospheric
14 carbon dioxide can help leverage the use of carbon
15 dioxide in energy applications such as enhanced oil
16 recovery and enhanced geothermal systems at re-
17 mote sites; and

18 (5) authorizing the Secretary of Energy to pro-
19 vide a technology prize for separation of carbon di-
20 oxide from dilute sources can provide the impetus
21 for developing the novel technologies that will be
22 needed in the future as part of the national energy
23 system of the United States.

24 (b) PURPOSE.—It is the purpose of this Act to pro-
25 vide incentives to encourage the development and imple-

1 mentation of technology to capture carbon dioxide from
 2 dilute sources on a significant scale using direct air cap-
 3 ture technologies.

4 **SEC. 3. CARBON DIOXIDE CAPTURE TECHNOLOGY PRIZE.**

5 Section 1008 of the Energy Policy Act of 2005 (42
 6 U.S.C. 16396) is amended by adding at the end the fol-
 7 lowing:

8 “(g) CARBON DIOXIDE CAPTURE TECHNOLOGY
 9 PRIZE.—

10 “(1) DEFINITIONS.—In this subsection:

11 “(A) BOARD.—The term ‘Board’ means
 12 the Carbon Dioxide Capture Technology Advi-
 13 sory Board established by paragraph (6).

14 “(B) DILUTE.—The term ‘dilute’ means a
 15 concentration of less than 1 percent by volume.

16 “(C) INTELLECTUAL PROPERTY.—The
 17 term ‘intellectual property’ means—

18 “(i) an invention that is patentable
 19 under title 35, United States Code; and

20 “(ii) any patent on an invention de-
 21 scribed in clause (i).

22 “(D) SECRETARY.—The term ‘Secretary’
 23 means the Secretary of Energy or designee, in
 24 consultation with the Board.

1 “(2) AUTHORITY.—Not later than 1 year after
2 the date of enactment of this subsection, as part of
3 the program carried out under this section, the Sec-
4 retary shall establish and award competitive tech-
5 nology financial awards for carbon dioxide capture
6 from media in which the concentration of carbon di-
7 oxide is dilute.

8 “(3) DUTIES.—In carrying out this subsection,
9 the Secretary shall—

10 “(A) subject to paragraph (4), develop spe-
11 cific requirements for—

12 “(i) the competition process;

13 “(ii) minimum performance standards
14 for qualifying projects; and

15 “(iii) monitoring and verification pro-
16 cedures for approved projects;

17 “(B) establish minimum levels for the cap-
18 ture of carbon dioxide from a dilute medium
19 that are required to be achieved to qualify for
20 a financial award described in subparagraph
21 (C);

22 “(C) offer financial awards for—

23 “(i) a design for a promising capture
24 technology;

1 “(ii) a successful bench-scale dem-
2 onstration of a capture technology;

3 “(iii) a design for a technology de-
4 scribed in clause (i) that will—

5 “(I) be operated on a demonstra-
6 tion scale; and

7 “(II) achieve significant reduc-
8 tion in the level of carbon dioxide; and

9 “(iv) an operational capture tech-
10 nology on a commercial scale that meets
11 the minimum levels described in subpara-
12 graph (B); and

13 “(D) submit to Congress—

14 “(i) an annual report that describes
15 the progress made by the Board and re-
16 cipients of financial awards under this sub-
17 section in achieving the demonstration
18 goals established under subparagraph (C);
19 and

20 “(ii) not later than 1 year after the
21 date of enactment of this subsection, a re-
22 port that describes the levels of funding
23 that are necessary to achieve the purposes
24 of this subsection.

1 “(4) PUBLIC PARTICIPATION.—In carrying out
2 paragraph (3)(A), the Board shall—

3 “(A) provide notice of and, for a period of
4 at least 60 days, an opportunity for public com-
5 ment on, any draft or proposed version of the
6 requirements described in paragraph (3)(A);
7 and

8 “(B) take into account public comments
9 received in developing the final version of those
10 requirements.

11 “(5) PEER REVIEW.—No financial awards may
12 be provided under this subsection until the proposal
13 for which the award is sought has been peer re-
14 viewed in accordance with such standards for peer
15 review as are established by the Secretary.

16 “(6) CARBON DIOXIDE CAPTURE TECHNOLOGY
17 ADVISORY BOARD.—

18 “(A) ESTABLISHMENT.—There is estab-
19 lished an advisory board to be known as the
20 ‘Carbon Dioxide Capture Technology Advisory
21 Board’.

22 “(B) COMPOSITION.—The Board shall be
23 composed of 9 members appointed by the Presi-
24 dent, by and with the advice and consent of the
25 Senate, who shall provide expertise in—

1 “(i) climate science;

2 “(ii) physics;

3 “(iii) chemistry;

4 “(iv) biology;

5 “(v) engineering;

6 “(vi) economics;

7 “(vii) business management; and

8 “(viii) such other disciplines as the

9 Secretary determines to be necessary to

10 achieve the purposes of this subsection.

11 “(C) TERM; VACANCIES.—

12 “(i) TERM.—A member of the Board

13 shall serve for a term of 6 years.

14 “(ii) VACANCIES.—A vacancy on the

15 Board—

16 “(I) shall not affect the powers of

17 the Board; and

18 “(II) shall be filled in the same

19 manner as the original appointment

20 was made.

21 “(D) INITIAL MEETING.—Not later than

22 30 days after the date on which all members of

23 the Board have been appointed, the Board shall

24 hold the initial meeting of the Board.

1 “(E) MEETINGS.—The Board shall meet
2 at the call of the Chairperson.

3 “(F) QUORUM.—A majority of the mem-
4 bers of the Board shall constitute a quorum,
5 but a lesser number of members may hold hear-
6 ings.

7 “(G) CHAIRPERSON AND VICE CHAIR-
8 PERSON.—The Board shall select a Chairperson
9 and Vice Chairperson from among the members
10 of the Board.

11 “(H) COMPENSATION.—Each member of
12 the Board may be compensated at not to exceed
13 the daily equivalent of the annual rate of basic
14 pay in effect for a position at level V of the Ex-
15 ecutive Schedule for each day during which the
16 member is engaged in the actual performance of
17 the duties of the Board.

18 “(I) DUTIES.—The Board shall advise the
19 Secretary on carrying out the duties of the Sec-
20 retary under this subsection.

21 “(7) INTELLECTUAL PROPERTY.—

22 “(A) IN GENERAL.—As a condition of re-
23 ceiving a financial award under this subsection,
24 an applicant shall agree to vest the intellectual
25 property of the applicant derived from the tech-

nology in 1 or more entities that are incorporated in the United States.

“(B) RESERVATION OF LICENSE.—The United States—

“(i) may reserve a nonexclusive, non-transferable, irrevocable, paid-up license, to have practiced for or on behalf of the United States, in connection with any intellectual property described in subparagraph (A); but

“(ii) shall not, in the exercise of a license reserved under clause (i), publicly disclose proprietary information relating to the license.

“(C) TRANSFER OF TITLE.—Title to any intellectual property described in subparagraph (A) shall not be transferred or passed, except to an entity that is incorporated in the United States, until the expiration of the first patent obtained in connection with the intellectual property.

“(8) AUTHORIZATION OF APPROPRIATIONS.—

There are authorized to be appropriated to carry out this subsection such sums as are necessary.

1 “(9) TERMINATION OF AUTHORITY.—The
2 Board and all authority provided under this sub-
3 section shall terminate on December 31, 2020.”.

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