

103D CONGRESS  
1ST SESSION

# S. 405

To create an environmental innovation research program, and for other purposes.

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## IN THE SENATE OF THE UNITED STATES

FEBRUARY 18 (legislative day, JANUARY 5), 1993

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

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## A BILL

To create an environmental innovation research program,  
and for other purposes.

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 “Environmental Innova-  
5 tion Research Act of 1993”.

6 **SEC. 2. FINDINGS AND PURPOSES.**

7 (a) FINDINGS.—Congress finds that—

8 (1) the creation of an environmentally sound  
9 economy is among the urgent public policy chal-

1 lenges of the United States, on both a domestic and  
2 international level;

3 (2) rather than constraining technology and  
4 technological progress, the resolution of environ-  
5 mental problems presents new strategic business  
6 opportunities;

7 (3) new critical environmental technology offers  
8 both effective solutions to environmental problems  
9 and a viable long-term basis for continued economic  
10 growth and competitiveness;

11 (4) while substantial relevant basic environ-  
12 mental research and development is being conducted  
13 in research institutes, universities, and industries,  
14 more work is needed to commercialize advances in  
15 basic research and explicit support for research is  
16 needed; and

17 (5) to better compete in the world economy, en-  
18 vironmental issues must become a more explicit  
19 focus within Federal agencies that conduct programs  
20 related to environmental cleanup and the develop-  
21 ment or application of technologies, and more envi-  
22 ronmental applications of technologies must be en-  
23 couraged through Federal funding.

24 (b) PURPOSES.—The purposes of this Act are to—

1           (1) establish an environmental innovation re-  
2 search program;

3           (2) stimulate the development of critical envi-  
4 ronmental technology;

5           (3) emphasize the goal of the program of in-  
6 creasing private sector commercialization of tech-  
7 nology developed through Federal research and  
8 development;

9           (4) increase the role of businesses engaging in  
10 environmental innovation research in the establish-  
11 ment of Federal research and development priorities;  
12 and

13           (5) establish the United States as the lead  
14 producer and exporter of innovative environmental  
15 technology.

16 **SEC. 3. DEFINITIONS.**

17 As used in this Act:

18           (1) ADMINISTRATOR.—The term “Adminis-  
19 trator” means the Administrator of the Environ-  
20 mental Protection Agency.

21           (2) COVERED FEDERAL AGENCY.—The term  
22 “covered Federal agency” means a Federal agency,  
23 with respect to which, for a fiscal year, an amount  
24 greater than \$50,000,000 is made available for envi-

1       ronmental research and development or environ-  
2       mental cleanup or for both.

3           (3)    CRITICAL    ENVIRONMENTAL    TECH-  
4       NOLOGY.—The term “critical environmental tech-  
5       nology” means a significant technological innovation  
6       that—

7           (A) can be used to reduce risks to human  
8       health, welfare, or the environment;

9           (B) enables a wide range of related tech-  
10      nical and economic advances; and

11          (C)(i) confers societal benefits in addition  
12      to private returns;

13          (ii) either—

14           (I) confers an economic advantage on  
15      United States industries developing or  
16      using the technology; or

17           (II) has the potential of becoming a  
18      dominant technology with respect to the  
19      future application of the technology; and

20          (iii) as appropriate, is generically applica-  
21      ble at the precompetitive stage.

22          (4) DIRECTOR.—The term “Director” means  
23      the Director of the Office for the Development of  
24      Critical Environmental Technology established under  
25      section 4.

1           (5) ENVIRONMENTAL INNOVATION RE-  
2 SEARCH.—The term “environmental innovation re-  
3 search” means research related to the development,  
4 application, or commercialization of critical environ-  
5 mental technology.

6           (6) FUNDING AGREEMENT.—The term “fund-  
7 ing agreement” means a contract, cooperative agree-  
8 ment, grant agreement, patent agreement, royalty  
9 agreement, license agreement, equity agreement, or  
10 other appropriate legal agreement between the head  
11 of a covered Federal agency and a private business  
12 concern to provide funding and support to carry out  
13 environmental innovation research.

14           (7) OFFICE.—The term “Office” means the Of-  
15 fice for the Development of Critical Environmental  
16 Technology established by section 4.

17           (8) TASK FORCE.—The term “Task Force”  
18 means the Critical Environmental Technology Task  
19 Force established under section 7.

20 **SEC. 4. ESTABLISHMENT OF OFFICE.**

21           (a) IN GENERAL.—There is established within the  
22 Environmental Protection Agency an Office for the Devel-  
23 opment of Critical Environmental Technology. The Office  
24 shall be headed by a Director, who shall be appointed by  
25 the Administrator.

1           (b) CRITICAL ENVIRONMENTAL TECHNOLOGY RE-  
2 SEARCH PROGRAM.—The Administrator, acting through  
3 the Director, shall carry out a critical environmental tech-  
4 nology research program. In carrying out the program, the  
5 Administrator, acting through the Director, shall—

6           (1) coordinate communication between the  
7 heads of covered Federal agencies and private indus-  
8 try regarding the development of critical environ-  
9 mental technology;

10          (2) conduct an environmental innovation re-  
11 search program pursuant to section 5;

12          (3) provide information, in cooperation with the  
13 head of each other covered Federal agency, to pri-  
14 vate business concerns that carry out environmental  
15 innovation research projects under section 5 regard-  
16 ing contracts with Federal agencies for research  
17 and development concerning critical environmental  
18 technology;

19          (4) provide technical assistance to private busi-  
20 ness concerns, including information concerning the  
21 research and development of critical environmental  
22 technology under other federally-sponsored research  
23 programs;

24          (5) to the extent allowable by law, in coopera-  
25 tion with the head of any other Federal agency that

1 the Administrator determines to be appropriate, en-  
2 sure the availability of an initial market for the criti-  
3 cal environmental technology;

4 (6) develop and maintain a clearinghouse to  
5 provide information to private business concerns  
6 that develop or apply critical environmental tech-  
7 nology;

8 (7) coordinate the activities of, and independ-  
9 ently survey and monitor the operation of, environ-  
10 mental innovation research programs established by  
11 covered Federal agencies pursuant to section 5(b);  
12 and

13 (8) conduct sufficient outreach activities to en-  
14 sure that, to the extent that funds are available, pri-  
15 vate business concerns qualified to carry out an envi-  
16 ronmental innovation research project have an op-  
17 portunity to participate in the program established  
18 under this subsection.

19 **SEC. 5. ENVIRONMENTAL INNOVATION TECHNOLOGY RE-**  
20 **SEARCH PROJECTS.**

21 (a) CRITICAL ENVIRONMENTAL TECHNOLOGY RE-  
22 SEARCH PROGRAM OF THE ENVIRONMENTAL PROTEC-  
23 TION AGENCY.—As part of the critical environmental  
24 technology program referred to in section 4(b), the Admin-  
25 istrator, acting through the Director, shall conduct an en-

1 vironmental innovation research program pursuant to sub-  
2 section (b). The Administrator, acting through the Direc-  
3 tor and in cooperation with the heads of covered Federal  
4 agencies, shall ensure the effective coordination of the ac-  
5 tivities of environmental innovation research programs  
6 conducted by the heads of covered Federal agencies under  
7 subsection (b) with the environmental innovation research  
8 program conducted by the Administrator, acting through  
9 the Director, under this subsection.

10 (b) ENVIRONMENTAL INNOVATION RESEARCH PRO-  
11 GRAMS OF COVERED FEDERAL AGENCIES.—

12 (1) IN GENERAL.—In addition to the establish-  
13 ment of an environmental innovation research pro-  
14 gram by the Administrator under subsection (a), the  
15 head of each covered Federal agency shall establish  
16 an environmental innovation research program for  
17 the development and commercialization of critical  
18 environmental technology to—

19 (A) further the progress of cleanup and  
20 pollution prevention activities of the agency;  
21 and

22 (B) avoid future pollution and cleanup  
23 problems.

24 (2) FUNDING.—The head of each covered Fed-  
25 eral agency shall—

1 (A) on an annual basis, set aside not less  
2 than 1.25 percent of the sum of—

3 (i) funds appropriated to the agency  
4 for environmental research and develop-  
5 ment (if any); and

6 (ii) funds appropriated to the agency  
7 for environmental cleanup (if any),

8 to fund an environmental innovation research  
9 program that meets the requirements of this  
10 Act; and

11 (B) on an ongoing basis, consult with the  
12 Task Force concerning the expenditure of the  
13 funds set aside pursuant to subparagraph (A).  
14 Nothing in this Act shall limit the amount of  
15 funds a covered Federal Agency may spend on  
16 the development and commercialization of criti-  
17 cal environmental technology, or any other envi-  
18 ronmental technology activity.

19 (3) DUTIES OF HEADS OF COVERED FEDERAL  
20 AGENCIES.—

21 (A) IN GENERAL.—In carrying out an en-  
22 vironmental innovation research program estab-  
23 lished under this subsection, the head of each  
24 covered Federal agency shall, in accordance  
25 with the requirements of this subsection—

1 (i) determine categories of projects to  
2 be included in the environmental innova-  
3 tion research program;

4 (ii) issue environmental innovation re-  
5 search solicitations;

6 (iii) receive and evaluate proposals re-  
7 sulting from environmental innovation re-  
8 search proposals;

9 (iv) select awardees for the environ-  
10 mental innovation research funding agree-  
11 ments of the covered Federal agency;

12 (v) administer the environmental inno-  
13 vation research funding agreements of the  
14 covered agency (or delegate the adminis-  
15 tration to another agency); and

16 (vi) make payments to recipients of  
17 environmental innovation research funding  
18 agreements on the basis of progress toward  
19 or completion of the funding agreement re-  
20 quirements.

21 (B) COOPERATIVE AGREEMENTS WITH  
22 OTHER FEDERAL AGENCIES.—The head of each  
23 covered Federal agency may enter into a coop-  
24 erative agreement with the head of another  
25 Federal agency for the provision of technical as-

1           sistance and other appropriate assistance to the  
2           business concern conducting an approved  
3           project.

4           (4) PHASES OF ENVIRONMENTAL INNOVATION  
5           RESEARCH PROGRAM.—

6           (A) IN GENERAL.—The head of each cov-  
7           ered agency shall carry out an environmental  
8           innovation research program consisting of the  
9           following three phases:

10           (i) A first phase (with respect to  
11           which the head of the covered Federal  
12           agency may enter into funding agreements  
13           with private business concerns, each of  
14           which shall be in an amount not to exceed  
15           \$100,000) for determining, to the extent  
16           practicable, the scientific and technical  
17           merit and feasibility of ideas submitted  
18           pursuant to environmental innovation re-  
19           search program solicitations that appear to  
20           have commercial potential.

21           (ii) A second phase (with respect to  
22           which the head of the covered Federal  
23           agency may enter into funding agreements  
24           with private business concerns, each of  
25           which shall be in an amount not to exceed

1           \$750,000) to further develop proposals  
2           that meet particular program needs, and  
3           with respect to which awards shall be made  
4           on the basis of the scientific and technical  
5           merit and feasibility of each proposal, as  
6           determined by the first phase (as described  
7           in clause (i)). The head of the covered  
8           Federal agency shall take into consider-  
9           ation, along with other attributes of each  
10          proposal, the commercial potential of each  
11          proposal, as evidenced by—

12                   (I) the record of the private busi-  
13                   ness concern of successfully commer-  
14                   cializing environmental innovation re-  
15                   search or other research;

16                   (II) the existence of funding com-  
17                   mitments from private sector or  
18                   nonenvironmental innovation research  
19                   funding sources to fund the second  
20                   phase;

21                   (III) the existence of follow-on  
22                   commitments for the third phase car-  
23                   ried out under clause (iii) for research  
24                   conducted pursuant to this clause;  
25                   and

1 (IV) the presence of other indica-  
2 tors of the commercial potential of the  
3 proposal.

4 (iii) If appropriate, a third phase,  
5 with respect to which the head of the cov-  
6 ered Federal agency may provide assist-  
7 ance or enter into funding agreements with  
8 private business concerns—

9 (I) that—

10 (aa) have performed com-  
11 mercial applications research  
12 funded under an environmental  
13 innovative research program or  
14 research and development pro-  
15 gram; and

16 (bb) are partially funded by  
17 non-Federal sources of capital;

18 (II) for products or services in-  
19 tended for use by the Federal Govern-  
20 ment, by federally-funded follow-on  
21 research and development that is not  
22 funded under an environmental inno-  
23 vation research program under this  
24 Act; or

1 (III) for which awards from Fed-  
2 eral sources other than funding for  
3 environmental innovation research  
4 under this Act are used for the con-  
5 tinuation of research or research and  
6 development that has been competi-  
7 tively selected using peer review or  
8 scientific review criteria.

9 (B) OTHER ASSISTANCE.—With respect to  
10 the assistance provided pursuant to subpara-  
11 graph (A)(iii), the covered Federal agency may,  
12 in addition to providing other assistance, assist  
13 the private business concern in pursuing fund-  
14 ing or procurement from other Federal research  
15 and development or cleanup programs.

16 **SEC. 6. ANNOTATED LIST OF CRITICAL ENVIRONMENTAL**  
17 **TECHNOLOGIES.**

18 The Director, in consultation with the members of  
19 the Task Force established under section 7, shall compile  
20 an annotated list of critical environmental technologies  
21 and provide for the periodic updating of the list. The anno-  
22 tations to the list shall include, with respect to each listed  
23 technology—

24 (1) a statement by the Director and each mem-  
25 ber of the Task Force who represents the interests

1 of a Federal agency concerning the listed technology  
2 that would be useful to the Federal agency that the  
3 member represents for carrying out environmental  
4 cleanup or research and development programs of  
5 the agency; and

6 (2) descriptions from appropriate representa-  
7 tives of private business concerns concerning existing  
8 research activities related to the listed technology,  
9 and other research that could be conducted to de-  
10 velop the technology for both domestic and inter-  
11 national markets.

12 **SEC. 7. CRITICAL ENVIRONMENTAL TECHNOLOGY TASK**  
13 **FORCE.**

14 (a) IN GENERAL.—The Administrator shall establish  
15 a task force to be known as the “Critical Environmental  
16 Technology Task Force”. The Task Force shall consist of  
17 the following members to be appointed by the Adminis-  
18 trator:

19 (1) The Deputy Assistant Secretary of Defense  
20 for Environment, and an Assistant Secretary respon-  
21 sible for environmental quality, science, or tech-  
22 nology research and development (as determined by  
23 the Secretary of Defense) from each of the following  
24 departments:

25 (A) The Department of the Army.

1 (B) The Department of the Navy.

2 (C) The Department of the Air Force.

3 (2) The Assistant Secretary for Conservation  
4 and Renewable Energy of the Department of En-  
5 ergy, or the designee of the Assistant Secretary.

6 (3) The Director of the National Institute of  
7 Standards and Technology, or the designee of the  
8 Director.

9 (4) The Administrator, or the designee of the  
10 Administrator.

11 (5) The Director.

12 (6) Five individuals representing private indus-  
13 try, appointed by the Administrator—(A) at least  
14 one member shall be a representative of a leading  
15 consortium of an advanced manufacturing and tech-  
16 nology firm. (B) at least one member shall be a rep-  
17 resentative of small business concerns.

18 (7) The head of each environmental innovation  
19 research program carried out by a covered Federal  
20 agency who is not among those individuals described  
21 in paragraphs (1) through (6).

22 (b) CHAIRPERSON.—The Director shall serve as the  
23 chairperson of the Task Force.

24 (c) ACTIVITIES.—The Task Force shall—

1           (1) assist the Director in ensuring the effective  
2           implementation of the proposed environmental inno-  
3           vation research of covered Federal agencies;

4           (2) oversee the coordination and development of  
5           the collection and distribution of critical environ-  
6           mental technology and data associated with the  
7           technology;

8           (3) review research proposals submitted to the  
9           Administrator and the heads of covered Federal  
10          agencies for environmental innovation research  
11          projects;

12          (4) on the basis of the reviews referred to in  
13          paragraph (3), make recommendations to the Ad-  
14          ministrator and the Director and the head of each  
15          covered Federal agency regarding the merits of the  
16          distribution of funds under proposed funding agree-  
17          ments to fund proposed projects under the programs  
18          established under this Act;

19          (5) ensure complementary research efforts and  
20          avoid duplicative research efforts under this Act; and

21          (6) promote the effective dissemination of re-  
22          search information and results among Federal agen-  
23          cies and the private sector, as appropriate.

1 **SEC. 8. REPORTS TO THE DIRECTOR.**

2 (a) IN GENERAL.—On an annual basis, the head of  
3 each covered Federal agency shall submit to the Director  
4 a report that includes:

5 (1) A listing of funding agreements under the  
6 environmental innovation technology program of the  
7 agency that provide for funding in an amount  
8 greater than or equal to \$10,000.

9 (2) The aggregate amount of assistance under  
10 the funding agreements described in paragraph (1).

11 (3) A comparison of the number of funding  
12 agreements and aggregate amount of funding under  
13 agreements described in paragraph (1) made with  
14 private business concerns that are environmental  
15 technology concerns (as defined by the Adminis-  
16 trator) with the number of funding agreements and  
17 aggregate amount of funding agreements made with  
18 other private business concerns.

19 (4) The percentage of successful commercializa-  
20 tion efforts in critical environmental technology re-  
21 sulting from the environmental innovation tech-  
22 nology program.

23 (b) COORDINATION OF REPORTS.—In the reports re-  
24 quired under section 10, the Director shall include a sum-  
25 mary of results delineated in the reports submitted under  
26 subsection (a).

1 **SEC. 9. GUIDELINES AND REGULATIONS.**

2 The Administrator shall, not later than 120 days  
3 after the date of enactment of this Act, promulgate guide-  
4 lines for environmental innovation research programs con-  
5 ducted by the Administrator and other covered Federal  
6 agencies under this Act. The head of each covered Federal  
7 agency shall, on the basis of the guidelines, promulgate  
8 such regulations as are necessary to ensure that the envi-  
9 ronmental innovation research program of the covered  
10 agency meets the requirements of the guidelines. The  
11 guidelines promulgated by the Administrator under this  
12 section shall provide for—

13 (1) simplified, standardized, and timely sollicita-  
14 tions of project proposals;

15 (2) a simplified, standardized funding process  
16 that provides for—

17 (A) the timely receipt and review of pro-  
18 posals;

19 (B) at a minimum, outside peer review for  
20 project proposals under the phase described in  
21 section 5(b)(4)(A)(ii), in any case in which the  
22 review is appropriate;

23 (C) the protection of proprietary informa-  
24 tion provided in project proposals;

25 (D) the selection of environmental innova-  
26 tion research projects;

1 (E) the retention of rights by the private  
2 business concern in data generated in the per-  
3 formance of a contract by the private business  
4 concern under the environmental innovation re-  
5 search project;

6 (F) to the extent allowable by law, the  
7 transfer of title to property provided by a Fed-  
8 eral agency to the private business concern con-  
9 ducting an environmental innovation research  
10 project, if the transfer would be more cost ef-  
11 fective than recovery of the property by the  
12 Federal agency;

13 (G) cost sharing; and

14 (H) cost principles and payment schedules;

15 (3) exemptions from the requirements of para-  
16 graph (2) in any case where national security or in-  
17 telligence functions would be jeopardized; and

18 (4) minimizing the regulatory burden of each  
19 private business concern that participates in an envi-  
20 ronmental innovation research project in order to  
21 improve the cost-effectiveness of the critical environ-  
22 mental technology research and development con-  
23 ducted under the program.

1 **SEC. 10. MONITORING AND REPORT.**

2 To the extent allowable by law, the Administrator  
3 shall—

4 (1) independently survey and monitor all phases  
5 of the implementation and operation of the environ-  
6 mental innovation research program of each covered  
7 agency (including compliance with requirements re-  
8 lating to the expenditures of funds); and

9 (2) not less frequently than annually, and at  
10 such other times as the Administrator, in consulta-  
11 tion with the Director, considers to be appropriate,  
12 submit a report to the Committee on Environment  
13 and Public Works of the Senate and the Committee  
14 on Science, Space, and Technology of the House of  
15 Representatives that includes—

16 (A) information concerning—

17 (i) each phase of the implementation  
18 and operation of the environmental innova-  
19 tion technology research programs admin-  
20 istered by the Administrator and the heads  
21 of covered Federal agencies under this Act;  
22 and

23 (ii) other related activities of the Ad-  
24 ministrator; and

25 (B) such recommendations for program  
26 improvements as the Administrator, in con-

1           sultation with the Director, considers to be ap-  
2           propriate.

3 **SEC. 11. REPORT BY THE COMPTROLLER GENERAL.**

4           The Comptroller General of the United States shall,  
5 not later than 5 years after the date of enactment of this  
6 Act, transmit a report concerning the implementation of  
7 the programs established under this Act, including a de-  
8 scription of the research conducted under the programs,  
9 to the Committee on Environment and Public Works of  
10 the Senate and the Committee on Science, Space, and  
11 Technology of the House of Representatives.

12 **SEC. 12. AUTHORIZATION OF APPROPRIATIONS.**

13           There are authorized to be appropriated such sums  
14 as are necessary to carry out this Act.

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