

106TH CONGRESS  
1ST SESSION

# H. R. 3385

To strengthen provisions in the Federal Nonnuclear Energy Research and Development Act of 1974 with respect to potential Climate Change.

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## IN THE HOUSE OF REPRESENTATIVES

NOVEMBER 16, 1999

Mr. BARTON of Texas introduced the following bill; which was referred to the Committee on Science

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## A BILL

To strengthen provisions in the Federal Nonnuclear Energy Research and Development Act of 1974 with respect to potential Climate Change.

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. PURPOSE**

4       The purpose of this Act is to strengthen provisions  
5       of the Federal Nonnuclear Energy Research and Develop-  
6       ment Act of 1974 to authorize and undertake a long-term  
7       research, development, and demonstration program to—

8               (1) develop new and enhance existing tech-  
9       nologies that reduce or avoid anthropogenic emis-  
10      sions of greenhouse gases;

1           (2) develop new technologies that could remove  
2       and sequester greenhouse gases from emissions  
3       streams; and

4           (3) develop new technologies and practices to  
5       remove and sequester greenhouse gases from the at-  
6       mosphere.

7   **SEC. 2. CLIMATE TECHNOLOGY RESEARCH, DEVELOPMENT**  
8                           **AND DEMONSTRATION PROGRAM.**

9       Subtitle B of title XXI of the Energy Policy Act of  
10   1992 (42 U.S.C. 13471) is amended by adding the fol-  
11   lowing new subsection:

12   **“SEC. 2120. CLIMATE TECHNOLOGY RESEARCH, DEVELOP-**  
13                           **MENT AND DEMONSTRATION PROGRAM.**

14       “(a) PURPOSE.—The purpose of this section is to di-  
15   rect the Secretary to further the goals of development and  
16   commercialization of technologies, through widespread ap-  
17   plication and utilization of which will assist in stabilizing  
18   global concentrations of greenhouse gases, by the conduct  
19   of a long-term research, development, and demonstration  
20   program undertaken with selected industry participants or  
21   consortia.

22       “(b) PROGRAM.—The Secretary, in consultation with  
23   the Advisory Board established under section 2302, shall  
24   establish a long-term Climate Technology Research, De-

1 velopment, and Demonstration Program, in accordance  
2 with sections 3001 and 3002.

3 “(c) PROGRAM OBJECTIVES.—The program shall  
4 foster—

5 “(1) development of new technologies and the  
6 enhancement of existing technologies that reduce or  
7 avoid anthropogenic emissions of greenhouse gases  
8 and improve energy efficiency;

9 “(2) development of new technologies that are  
10 able to remove and sequester greenhouse gases from  
11 emissions streams; and

12 “(3) development of new technologies and prac-  
13 tices to remove and sequester greenhouse gases from  
14 the atmosphere.

15 “(d) PROGRAM PLAN.—

16 “(1) INITIAL PLAN.—Not later than 180 days  
17 after the date of enactment of this section, the Sec-  
18 retary, in consultation with appropriate representa-  
19 tives of industry, institutions of higher education,  
20 Department of Energy national laboratories, and  
21 professional and technical societies, shall prepare  
22 and submit to the Congress a 10-year program plan  
23 to guide activities under this section.

1           “(2) BIENNIAL UPDATE.—The Secretary shall  
2           biennially update and resubmit the program plan to  
3           the Congress.

4           “(e) PROPOSALS.—

5           “(1) SOLICITATION.—Not later than one year  
6           after the date of submittal of the 10-year program  
7           plan, and consistent with sections 3001 and 3002,  
8           the Secretary shall solicit proposals for conducting  
9           activities consistent with the 10-year program plan  
10          and select one or more proposals not later than 180  
11          days after such solicitations.

12          “(2) QUALIFICATIONS.—In order for a proposal  
13          to be considered by the Secretary, an applicant shall  
14          provide evidence that the applicant has in  
15          existence—

16                 “(A) the technical capability to enable it to  
17                 make use of existing research support and fa-  
18                 cilities in carrying out its research objectives;

19                 “(B) a multi-disciplinary research staff ex-  
20                 perienced in—

21                         “(i) energy generation, transmission,  
22                         distribution and end-use technologies; or

23                         “(ii) technologies or practices able to  
24                         sequester, avoid, or capture greenhouse gas  
25                         emissions; or

1 “(iii) other directly related tech-  
2 nologies or practices;

3 “(C) access to facilities and equipment to  
4 enable the conduct of laboratory-scale testing or  
5 demonstration of technologies or related proc-  
6 esses undertaken through the program.

7 “(3) PROPOSAL CRITERIA.—Each proposal  
8 shall—

9 “(A) demonstrate the support of the rel-  
10 evant industry by describing—

11 “(i) how the relevant industry has  
12 participated in deciding what research ac-  
13 tivities will be undertaken;

14 “(ii) how the relevant industry will  
15 participate in the evaluation of the appli-  
16 cant’s progress in research and develop-  
17 ment activities; and

18 “(iii) the extent to which industry  
19 funds are committed to the applicant’s  
20 submission;

21 “(B) have a commitment for matching  
22 funds from non-Federal sources, which shall  
23 consist of—

24 “(i) cash; or

1 “(ii) as determined by the Secretary,  
2 the fair market value of equipment, serv-  
3 ices, materials, appropriate technology  
4 transfer activities, and other assets directly  
5 related to the proposal’s cost;

6 “(C) include a single-year and multi-year  
7 management plan that outline how the research  
8 and development activities will be administered  
9 and carried out;

10 “(D) state the annual cost of the proposal  
11 and a breakdown of those costs; and

12 “(E) describe the technology transfer  
13 mechanisms that the applicant will use to make  
14 available research results to industry and to  
15 other researchers.

16 “(4) CONTENTS OF PROPOSAL.—A proposal  
17 under this subsection shall include—

18 “(A) an explanation of how the proposal  
19 will expedite the research, development, dem-  
20 onstration, and commercialization of tech-  
21 nologies capable of—

22 “(i) reducing or avoiding anthropo-  
23 genic emissions of greenhouse gases;

24 “(ii) removing and sequestering green-  
25 house gases from emissions streams; or

1                   “(iii) removing and sequestering  
2                   greenhouse gases from the atmosphere.

3                   “(B) evidence of consideration of whether  
4                   the unique capabilities of Department of En-  
5                   ergy national laboratories warrant collaboration  
6                   with those laboratories, and the extent of the  
7                   collaboration proposed;

8                   “(C) a description of the extent to which  
9                   the proposal includes collaboration with relevant  
10                  industry or other groups or organizations;

11                  “(D) evidence of the ability of the appli-  
12                  cant to undertake and complete the proposed  
13                  project;

14                  “(E) evidence of applicant’s ability to suc-  
15                  cessfully introduce the technology into com-  
16                  merce, as demonstrated by past experience and  
17                  current relationships with industry; and

18                  “(F) a demonstration of continued finan-  
19                  cial commitment during the entire term of the  
20                  proposal from all industrial sectors involved in  
21                  the technology development.

22                  “(f) SELECTION OF PROPOSALS.—From the pro-  
23                  posals submitted, the Secretary shall select for funding  
24                  one or more proposals that—

1           “(1) will best result in carrying out needed re-  
2           search, development, and demonstration related to  
3           technologies able to assist in the stabilization of  
4           global greenhouse gas concentrations through one or  
5           more of the following approaches—

6                   “(A) improvement in the performance of  
7                   fossil-fueled energy technologies;

8                   “(B) development of greenhouse gas cap-  
9                   ture and sequestration technologies and proc-  
10                  esses;

11                  “(C) cost reduction and acceleration of de-  
12                  ployment of renewable resource and distributed  
13                  generation technologies;

14                  “(D) development of an advanced nuclear  
15                  generation design; and

16                  “(E) improvement in the efficiency of elec-  
17                  trical generation, transmission, distribution,  
18                  and end use;”

19                  “(F) design and use of—

20                          “(i) closed-loop multi-stage industrial  
21                          processes that minimize raw material con-  
22                          sumption and waste streams;

23                          “(ii) advanced co-production systems  
24                          (such as coal-based chemical processing  
25                          and biomass fuel processing); and



1                   “(iii) recycling and industrial-ecology  
2                   programs integrating energy efficiency.

3                   “(2) represent research and development in spe-  
4                   cific areas identified in the program plan developed  
5                   biennially by the Secretary and submitted to Con-  
6                   gress under subsection (c);

7                   “(3) demonstrate strong industry support;

8                   “(4) ensure the timely transfer of technology to  
9                   industry; and

10                  “(5) otherwise best carry out this section.

11                 “(g) ANNUAL PROGRESS REPORTS.—The Director of  
12                 the Office of Science and Technology, in consultation with  
13                 the Director of the Office of Management and Budget,  
14                 shall prepare and submit an annual report to Congress  
15                 that—

16                 “(1) certifies that the program objectives are  
17                 adequately focused, peer-reviewed and merit-re-  
18                 viewed, and not unnecessarily duplicative with the  
19                 science and technology research being conducted by  
20                 other Federal agencies and agents, and

21                 “(2) states whether the program as conducted  
22                 in the prior year addresses an adequate breadth and  
23                 range of technologies and solutions to address an-  
24                 thropogenic climate change, including—

1           “(A) capture and sequestration of green-  
2           house gas emissions;

3           “(B) development of photovoltaic, high-ef-  
4           ficiency coal, advanced nuclear, and fuel cell  
5           generation technologies;

6           “(C) cost reduction and acceleration of de-  
7           ployment of renewable resource and distributed  
8           generation technologies; and

9           “(D) improvement in the efficiency of elec-  
10          trical generation, transmission, distribution,  
11          and end use;

12       “(h) AUTHORIZATION OF APPROPRIATIONS.—There  
13       are authorized to be appropriated to carry out this section  
14       \$200,000,000 for each of fiscal years 2001 through 2010,  
15       to remain available until expended. This authorization is  
16       supplemental to existing authorities and shall not be con-  
17       strued as a cap on the Department of Energy’s Research,  
18       Development and Demonstration programs.”.

19       **SEC. 3. COMPREHENSIVE PLAN AND IMPLEMENTING PRO-**  
20                               **GRAM FOR ENERGY RESEARCH, DEVELOP-**  
21                               **MENT, AND DEMONSTRATION.**

22       Section 6 of the Federal Nonnuclear Energy Re-  
23       search and Development Act of 1974 (42 U.S.C. 5905)  
24       is amended—

25               (1) in subsection (a)—

1 (A) in paragraph (2), by striking “and” at  
2 the end;

3 (B) in paragraph (3) by striking the period  
4 at the end and inserting “, and”; and

5 (C) by adding at the end the following:

6 “(4) solutions to the effective management of  
7 greenhouse gas emissions in the long term by the de-  
8 velopment of technologies and practices designed  
9 to—

10 “(A) reduce or avoid anthropogenic emis-  
11 sions of greenhouse gases;

12 “(B) remove and sequester greenhouse  
13 gases from emissions streams; and

14 “(C) remove and sequester greenhouse  
15 gases from the atmosphere.”; and

16 (2) in subsection (b)—

17 (A) in paragraph (2), by striking “sub-  
18 section (a)(1) through (3)” and inserting  
19 “paragraphs (1) through (4) of subsection (a);  
20 and

21 (B) in paragraph (3)—

22 (i) in subparagraph (R), by striking  
23 “and” at the end;

1 (ii) in subparagraph (S), by striking  
2 the period at the end and inserting “;  
3 and”; and

4 (iii) by adding at the end the fol-  
5 lowing:

6 “(T) to pursue a long-term climate tech-  
7 nology strategy designed to demonstrate a vari-  
8 ety of technologies by which stabilization of  
9 greenhouse gases might be best achieved,  
10 including—

11 “(i) the accelerated commercial dem-  
12 onstration of low-cost and high efficiency  
13 photovoltaic power systems;

14 “(ii) advanced clean coal technology;

15 “(iii) advanced nuclear power plant  
16 design;

17 “(iv) fuel cell technology development  
18 for cost-effective application in residential,  
19 industrial and transportation applications;

20 “(v) low cost carbon sequestration  
21 practices and technologies including bio-  
22 technology, tree physiology, soil produc-  
23 tivity and remote sensing;

24 “(vi) hydro and other renewables;

1                   “(vii) electrical generation, trans-  
2                   mission and distribution technologies and  
3                   end use technologies; and  
4                   “(viii) bio-energy technology.”

5 **SEC. 4. DEFINITIONS.**

6       For the purpose of this Act and the provisions of the  
7 Federal Nonnuclear Energy Research and Development  
8 Act of 1974 (42 U.S.C. 5901, et seq.) amended by this  
9 Act, the following terms are defined as follows:

10           “(1) CLIMATE CHANGE.—The term ‘climate  
11           change’ means a change of climate which is attrib-  
12           uted directly or indirectly to human activity which is  
13           in addition to natural climate variability observed  
14           over comparable time periods.

15           “(2) GREENHOUSE GASES.—The term ‘green-  
16           house gases’ means those gaseous constituents of the  
17           atmosphere, both natural and anthropogenic, that  
18           absorb and re-emit infrared radiation.

19           “(3) GREENHOUSE GAS SEQUESTRATION.—The  
20           term ‘greenhouse gas sequestration’ means extract-  
21           ing one or more greenhouse gases from the atmos-  
22           phere or an emissions stream through a techno-  
23           logical process designed to extract and isolate those  
24           gases from the atmosphere or an emissions stream;  
25           or the natural process of photosynthesis that ex-

1       tracts carbon dioxide from the atmosphere and  
2       stores it as carbon in trees, roots, stems, soils, foli-  
3       age, and durable wood products.”.

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