

Union Calendar No. 42

109TH CONGRESS
1ST SESSION

H. R. 1215

[Report No. 109–82]

To provide for the implementation of a Green Chemistry Research and Development Program, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 10, 2005

Mr. GINGREY (for himself, Mr. MARSHALL, Mr. EHLERS, Mr. BOEHLERT, Mr. FILNER, Mr. ROHRABACHER, Mr. MCHUGH, Mr. HASTINGS of Washington, and Mr. SIMMONS) introduced the following bill; which was referred to the Committee on Science

MAY 16, 2005

Additional sponsors: Mr. HOLT and Mr. REICHERT

MAY 16, 2005

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in italic]

[For text of introduced bill, see copy of bill as introduced on March 10, 2005]

A BILL

To provide for the implementation of a Green Chemistry Research and Development 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,*

1 **SECTION 1. SHORT TITLE.**

2 *This Act may be cited as the “Green Chemistry Re-*
3 *search and Development Act of 2005”.*

4 **SEC. 2. DEFINITIONS.**

5 *In this Act—*

6 *(1) the term “green chemistry” means chemistry*
7 *and chemical engineering to design chemical products*
8 *and processes that reduce or eliminate the use or gen-*
9 *eration of hazardous substances while producing high*
10 *quality products through safe and efficient manufac-*
11 *turing processes;*

12 *(2) the term “Interagency Working Group”*
13 *means the interagency working group established*
14 *under section 3(c); and*

15 *(3) the term “Program” means the Green Chem-*
16 *istry Research and Development Program described*
17 *in section 3.*

18 **SEC. 3. GREEN CHEMISTRY RESEARCH AND DEVELOPMENT**
19 **PROGRAM.**

20 *(a) IN GENERAL.—The President shall establish a*
21 *Green Chemistry Research and Development Program to*
22 *promote and coordinate Federal green chemistry research,*
23 *development, demonstration, education, and technology*
24 *transfer activities.*

25 *(b) PROGRAM ACTIVITIES.—The activities of the Pro-*
26 *gram shall be designed to—*

1 (1) *provide sustained support for green chem-*
2 *istry research, development, demonstration, education,*
3 *and technology transfer through—*

4 (A) *merit-reviewed competitive grants to in-*
5 *dividual investigators and teams of investigators,*
6 *including, to the extent practicable, young inves-*
7 *tigators, for research and development;*

8 (B) *grants to fund collaborative research*
9 *and development partnerships among univer-*
10 *sities, industry, and nonprofit organizations;*

11 (C) *green chemistry research, development,*
12 *demonstration, and technology transfer con-*
13 *ducted at Federal laboratories; and*

14 (D) *to the extent practicable, encouragement*
15 *of consideration of green chemistry in—*

16 (i) *the conduct of Federal chemical*
17 *science and engineering research and devel-*
18 *opment; and*

19 (ii) *the solicitation and evaluation of*
20 *all proposals for chemical science and engi-*
21 *neering research and development;*

22 (2) *examine methods by which the Federal Gov-*
23 *ernment can create incentives for consideration and*
24 *use of green chemistry processes and products;*

1 (3) facilitate the adoption of green chemistry in-
2 novations;

3 (4) expand education and training of under-
4 graduate and graduate students, and professional
5 chemists and chemical engineers, including through
6 partnerships with industry, in green chemistry
7 science and engineering;

8 (5) collect and disseminate information on green
9 chemistry research, development, and technology
10 transfer, including information on—

11 (A) incentives and impediments to develop-
12 ment and commercialization;

13 (B) accomplishments;

14 (C) best practices; and

15 (D) costs and benefits;

16 (6) provide venues for outreach and dissemina-
17 tion of green chemistry advances such as symposia,
18 forums, conferences, and written materials in collabo-
19 ration with, as appropriate, industry, academia, sci-
20 entific and professional societies, and other relevant
21 groups;

22 (7) support economic, legal, and other appro-
23 priate social science research to identify barriers to
24 commercialization and methods to advance commer-
25 cialization of green chemistry; and

1 (8) *provide for public input and outreach to be*
2 *integrated into the Program by the convening of pub-*
3 *lic discussions, through mechanisms such as citizen*
4 *panels, consensus conferences, and educational events,*
5 *as appropriate.*

6 (c) *INTERAGENCY WORKING GROUP.—The President*
7 *shall establish an Interagency Working Group, which shall*
8 *include representatives from the National Science Founda-*
9 *tion, the National Institute of Standards and Technology,*
10 *the Department of Energy, the Environmental Protection*
11 *Agency, and any other agency that the President may des-*
12 *ignate. The Director of the National Science Foundation*
13 *and the Assistant Administrator for Research and Develop-*
14 *ment of the Environmental Protection Agency shall serve*
15 *as co-chairs of the Interagency Working Group. The Inter-*
16 *agency Working Group shall oversee the planning, manage-*
17 *ment, and coordination of the Program. The Interagency*
18 *Working Group shall—*

19 (1) *establish goals and priorities for the Pro-*
20 *gram, to the extent practicable in consultation with*
21 *green chemistry researchers and potential end-users of*
22 *green chemistry products and processes; and*

23 (2) *provide for interagency coordination, includ-*
24 *ing budget coordination, of activities under the Pro-*
25 *gram.*

1 (d) *AGENCY BUDGET REQUESTS.*—Each Federal agen-
2 *cy and department participating in the Program shall, as*
3 *part of its annual request for appropriations to the Office*
4 *of Management and Budget, submit a report to the Office*
5 *of Management and Budget which identifies its activities*
6 *that contribute directly to the Program and states the por-*
7 *tion of its request for appropriations that is allocated to*
8 *those activities. The President shall include in his annual*
9 *budget request to Congress a statement of the portion of each*
10 *agency’s or department’s annual budget request allocated*
11 *to its activities undertaken pursuant to the Program.*

12 (e) *REPORT TO CONGRESS.*—Not later than 2 years
13 *after the date of enactment of this Act, the Interagency*
14 *Working Group shall transmit a report to the Committee*
15 *on Science of the House of Representatives and the Com-*
16 *mittee on Commerce, Science, and Transportation of the*
17 *Senate. This report shall include—*

18 (1) *a summary of federally funded green chem-*
19 *istry research, development, demonstration, education,*
20 *and technology transfer activities, including the green*
21 *chemistry budget for each of these activities; and*

22 (2) *an analysis of the progress made toward*
23 *achieving the goals and priorities for the Program,*
24 *and recommendations for future program activities.*

1 **SEC. 4. MANUFACTURING EXTENSION CENTER GREEN SUP-**
2 **PLIERS NETWORK GRANT PROGRAM.**

3 *Section 25(a) of the National Institute of Standards*
4 *and Technology Act (15 U.S.C. 278k(a)) is amended—*

5 *(1) by striking “and” at the end of paragraph*
6 *(4);*

7 *(2) by striking the period at the end of para-*
8 *graph (5) and inserting “; and”; and*

9 *(3) by adding at the end the following:*

10 *“(6) the enabling of supply chain manufacturers*
11 *to continuously improve products and processes, in-*
12 *crease energy efficiency, identify cost-saving opportu-*
13 *nities, and optimize resources and technologies with*
14 *the aim of reducing or eliminating the use or genera-*
15 *tion of hazardous substances.”.*

16 **SEC. 5. UNDERGRADUATE EDUCATION IN CHEMISTRY AND**
17 **CHEMICAL ENGINEERING.**

18 *(a) PROGRAM AUTHORIZED.—(1) As part of the Pro-*
19 *gram activities under section 3(b)(4), the Director of the*
20 *National Science Foundation shall carry out a program to*
21 *award grants to institutions of higher education to support*
22 *efforts by such institutions to revise their undergraduate*
23 *curriculum in chemistry and chemical engineering to incor-*
24 *porate green chemistry concepts and strategies.*

25 *(2) Grants shall be awarded under this section on a*
26 *competitive, merit-reviewed basis and shall require cost*

1 *sharing in cash from non-Federal sources, to match the Fed-*
2 *eral funding.*

3 (b) *SELECTION PROCESS.—(1) An institution of high-*
4 *er education seeking funding under this section shall submit*
5 *an application to the Director at such time, in such man-*
6 *ner, and containing such information as the Director may*
7 *require. The application shall include at a minimum—*

8 (A) *a description of the content and schedule for*
9 *adoption of the proposed curricular revisions to the*
10 *courses of study offered by the applicant in chemistry*
11 *and chemical engineering; and*

12 (B) *a description of the source and amount of*
13 *cost sharing to be provided.*

14 (2) *In evaluating the applications submitted under*
15 *paragraph (1), the Director shall consider, at a min-*
16 *imum—*

17 (A) *the level of commitment demonstrated by the*
18 *applicant in carrying out and sustaining lasting cur-*
19 *riculum changes in accordance with subsection (a)(1);*
20 *and*

21 (B) *the amount of cost sharing to be provided.*

22 (c) *AUTHORIZATION OF APPROPRIATIONS.—In addi-*
23 *tion to amounts authorized under section 8, from sums oth-*
24 *erwise authorized to be appropriated by the National*
25 *Science Foundation Authorization Act of 2002, there are*

1 *authorized to be appropriated to the National Science*
2 *Foundation for carrying out this section \$7,000,000 for fis-*
3 *cal year 2006, \$7,500,000 for fiscal year 2007, and*
4 *\$8,000,000 for fiscal year 2008.*

5 **SEC. 6. STUDY ON COMMERCIALIZATION OF GREEN CHEM-**
6 **ISTRY.**

7 (a) *STUDY.*—*The Director of the National Science*
8 *Foundation shall enter into an arrangement with the Na-*
9 *tional Research Council to conduct a study of the factors*
10 *that constitute barriers to the successful commercial appli-*
11 *cation of promising results from green chemistry research*
12 *and development.*

13 (b) *CONTENTS.*—*The study shall—*

14 (1) *examine successful and unsuccessful attempts*
15 *at commercialization of green chemistry in the United*
16 *States and abroad; and*

17 (2) *recommend research areas and priorities and*
18 *public policy options that would help to overcome*
19 *identified barriers to commercialization.*

20 (c) *REPORT.*—*The Director shall submit a report to*
21 *the Committee on Science of the House of Representatives*
22 *and the Committee on Commerce, Science, and Transpor-*
23 *tation of the Senate on the findings and recommendations*
24 *of the study within 18 months after the date of enactment*
25 *of this Act.*

1 **SEC. 7. PARTNERSHIPS IN GREEN CHEMISTRY.**

2 (a) *PROGRAM AUTHORIZED.*—(1) *The agencies par-*
3 *ticipating in the Program shall carry out a joint, coordi-*
4 *nated program to award grants to institutions of higher*
5 *education to establish partnerships with companies in the*
6 *chemical industry to retrain chemists and chemical engi-*
7 *neers in the use of green chemistry concepts and strategies.*

8 (2) *Grants shall be awarded under this section on a*
9 *competitive, merit-reviewed basis and shall require cost*
10 *sharing from non-Federal sources by members of the part-*
11 *nerships.*

12 (3) *In order to be eligible to receive a grant under this*
13 *section, an institution of higher education shall enter into*
14 *a partnership with two or more companies in the chemical*
15 *industry. Such partnerships may also include other institu-*
16 *tions of higher education and professional associations.*

17 (4) *Grants awarded under this section shall be used*
18 *for activities to provide retraining for chemists or chemical*
19 *engineers in green chemistry, including—*

20 (A) *the development of curricular materials and*
21 *the designing of undergraduate and graduate level*
22 *courses; and*

23 (B) *publicizing the availability of professional*
24 *development courses of study in green chemistry and*
25 *recruiting graduate scientists and engineers to pursue*
26 *such courses.*

1 *Grants may provide stipends for individuals enrolled in*
2 *courses developed by the partnership.*

3 **(b) SELECTION PROCESS.**—(1) *An institution of high-*
4 *er education seeking funding under this section shall submit*
5 *an application at such time, in such manner, and con-*
6 *taining such information as shall be specified by the Inter-*
7 *agency Working Group and published in a proposal solici-*
8 *tation for the Program. The application shall include at*
9 *a minimum—*

10 **(A)** *a description of the partnership and the role*
11 *each member will play in implementing the proposal;*

12 **(B)** *a description of the courses of study that will*
13 *be provided;*

14 **(C)** *a description of the number and size of sti-*
15 *pends, if offered;*

16 **(D)** *a description of the source and amount of*
17 *cost sharing to be provided; and*

18 **(E)** *a description of the manner in which the*
19 *partnership will be continued after assistance under*
20 *this section ends.*

21 (2) *The evaluation of the applications submitted under*
22 *paragraph (1) shall be carried out in accordance with pro-*
23 *cedures developed by the Interagency Working Group and*
24 *shall consider, at a minimum—*

1 (A) *the ability of the partnership to carry out ef-*
2 *fectively the proposed activities;*

3 (B) *the degree to which such activities are likely*
4 *to prepare chemists and chemical engineers suffi-*
5 *ciently to be competent to apply green chemistry con-*
6 *cepts and strategies in their work; and*

7 (C) *the amount of cost sharing to be provided.*

8 **SEC. 8. AUTHORIZATION OF APPROPRIATIONS.**

9 (a) *NATIONAL SCIENCE FOUNDATION.—(1) From sums*
10 *otherwise authorized to be appropriated by the National*
11 *Science Foundation Authorization Act of 2002, there are*
12 *authorized to be appropriated to the National Science*
13 *Foundation for carrying out this Act—*

14 (A) *\$7,000,000 for fiscal year 2006;*

15 (B) *\$7,500,000 for fiscal year 2007; and*

16 (C) *\$8,000,000 for fiscal year 2008.*

17 (2) *The sums authorized by paragraph (1) are in addi-*
18 *tion to any funds the National Science Foundation is*
19 *spending on green chemistry through its ongoing chemistry*
20 *and chemical engineering programs.*

21 (b) *NATIONAL INSTITUTE OF STANDARDS AND TECH-*
22 *NOLOGY.—From sums otherwise authorized to be appro-*
23 *priated, there are authorized to be appropriated to the Na-*
24 *tional Institute of Standards and Technology for carrying*
25 *out this Act—*

1 (1) \$5,000,000 for fiscal year 2006;

2 (2) \$5,500,000 for fiscal year 2007; and

3 (3) \$6,000,000 for fiscal year 2008.

4 (c) *DEPARTMENT OF ENERGY.*—From sums otherwise
5 authorized to be appropriated, there are authorized to be
6 appropriated to the Department of Energy for carrying out
7 this Act—

8 (1) \$7,000,000 for fiscal year 2006;

9 (2) \$7,500,000 for fiscal year 2007; and

10 (3) \$8,000,000 for fiscal year 2008.

11 (d) *ENVIRONMENTAL PROTECTION AGENCY.*—From
12 sums otherwise authorized to be appropriated, there are au-
13 thorized to be appropriated to the Environmental Protec-
14 tion Agency for carrying out this Act—

15 (1) \$7,000,000 for fiscal year 2006;

16 (2) \$7,500,000 for fiscal year 2007; and

17 (3) \$8,000,000 for fiscal year 2008.

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