

**[DISCUSSION DRAFT]**111<sup>TH</sup> CONGRESS  
1<sup>ST</sup> SESSION**H. R.** \_\_\_\_\_

To authorize the Administrator of the Environmental Protection Agency to award grants for electronic waste reduction research, development, and demonstration projects, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

Mr. \_\_\_\_\_ introduced the following bill; which was referred to the  
Committee on \_\_\_\_\_

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**A BILL**

To authorize the Administrator of the Environmental Protection Agency to award grants for electronic waste reduction research, development, and demonstration projects, 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 “Electronic Waste Re-  
5 search and Development Act”.

6 **SEC. 2. FINDINGS.**

7 Congress finds the following:

1           (1) The volume of obsolete, broken, or dis-  
2           carded electronic devices, known as electronic waste,  
3           is substantial and will continue to grow. The Envi-  
4           ronmental Protection Agency estimates that over 2  
5           billion computers, televisions, cell phones, printers,  
6           gaming systems, and other devices have been sold  
7           since 1980, generating 2 million tons of unwanted  
8           electronic devices in 2005 alone, with only 15 to 20  
9           percent being recycled.

10           (2) Concerns over the hazardous materials  
11           found in electronic waste, such as lead and mercury,  
12           have lead many States to ban electronic devices from  
13           their landfills. The export of electronic waste to de-  
14           veloping countries is also a serious problem. The  
15           crude methods of many of the recycling operations  
16           in these countries can seriously jeopardize the health  
17           of workers and severely pollute the environment.

18           (3) Recycling conserves resources, recovering  
19           valuable materials such as gold, copper, and plat-  
20           inum.

21           (4) The amount of electronic waste reaching re-  
22           cyclers is increasing, but challenges remain. Re-  
23           search and development into new recycling tech-  
24           nologies, improved product design, and new applica-  
25           tions for recycled materials could address some of

1       these challenges and help reduce the burden of elec-  
2       tronic waste on the environment.

3           (5) The public currently does not take full ad-  
4       vantage of existing electronic waste recycling oppor-  
5       tunities. Studying factors that influence behavior  
6       and educating consumers about electronic waste  
7       could help communities and private industry develop  
8       recycling programs that draw more participation.

9           (6) The development of tools and technologies  
10      to increase the lifespan of electronic devices and pro-  
11      mote their safe re-use would decrease the impact of  
12      electronics production and disposal on the environ-  
13      ment.

14          (7) Accurately assessing the environmental im-  
15      pacts of electronics production and electronic waste  
16      recycling is a complex task. Data and tools to better  
17      quantify these impacts would help policymakers and  
18      others determine the best end-of-life management  
19      option.

20   **SEC. 3. DEFINITIONS.**

21      For the purposes of this Act:

22          (1) ADMINISTRATOR.—The term “Adminis-  
23      trator” means the Administrator of the Environ-  
24      mental Protection Agency.

1           (2) CONSORTIUM.—The term “consortium”  
2 means a grant recipient under section 4(a) that in-  
3 cludes—

4           (A) at least one institution of higher edu-  
5 cation, non-profit research institution, or gov-  
6 ernment laboratory; and

7           (B) at least one for-profit entity, including  
8 a manufacturer, designer, refurbisher, or recy-  
9 cler of electronic devices or the components of  
10 such devices.

11          (3) DIRECTOR.—The term “Director” means  
12 the Director of the National Institute of Standards  
13 and Technology.

14          (4) ELECTRONIC WASTE.—The term “electronic  
15 waste” means obsolete, broken, or discarded elec-  
16 tronic devices, including computers, computer mon-  
17 itors, televisions, laptops, printers, cellular phones,  
18 copiers, fax machines, stereos, video gaming sys-  
19 tems, and the components of such devices.

20          (5) INSTITUTION OF HIGHER EDUCATION.—The  
21 term “institution of higher education” has the  
22 meaning given such term in section 101(a) of the  
23 Higher Education Act of 1965 (20 U.S.C. 1001(a)).

1 **SEC. 4. ELECTRONIC WASTE ENGINEERING RESEARCH, DE-**  
2 **VELOPMENT, AND DEMONSTRATION**  
3 **PROJECTS.**

4 (a) IN GENERAL.—The Administrator shall award  
5 multiyear grants to consortia to conduct research to create  
6 innovative and practical approaches to reduce and manage  
7 electronic waste and, through the conduct of this research,  
8 to contribute to the professional development of scientists,  
9 engineers, and technicians in the fields of electronic device  
10 manufacturing, design, refurbishing, and recycling. The  
11 research areas supported under this section shall in-  
12 clude—

13 (1) technology to increase the efficiency of elec-  
14 tronic waste recycling;

15 (2) expanded uses for materials recycled from  
16 electronic waste;

17 (3) development and demonstration of green al-  
18 ternatives to the use of hazardous materials in elec-  
19 tronic devices and the production of such devices;

20 (4) development of methods to separate and re-  
21 move hazardous materials from electronic waste and  
22 to recycle or dispose of such materials in a safe  
23 manner;

24 (5) product design and construction to facilitate  
25 disassembly and recycling of electronic waste;

1           (6) tools and methods to aid in assessing the  
2           environmental impacts of the production of elec-  
3           tronic devices and electronic waste recycling and dis-  
4           posal;

5           (7) product design and construction and other  
6           tools and techniques to extend the lifecycle of elec-  
7           tronic devices, including methods to promote their  
8           safe re-use; and

9           (8) strategies to increase consumer acceptance  
10          and practice of recycling of electronic waste.

11          (b) MERIT REVIEW; COMPETITION.—Grants shall be  
12          awarded under this section on a merit-reviewed, competi-  
13          tive basis. **【The reviewing body shall be composed of sub-  
14          ject matter experts and related industry representatives.】**

15          (c) APPLICATIONS.—Applications shall be submitted  
16          by a consortium to the Administrator at such time, in such  
17          manner, and containing such information and assurances  
18          as the Administrator may require. The application shall  
19          include a description of—

20                 (1) the research project that will be undertaken  
21                 by the consortium and the contributions of each of  
22                 the participating entities, including the for-profit en-  
23                 tity;

24                 (3) the applicability of the project to reduce  
25                 electronic waste in the electronic device design, man-

1       ufacturing, refurbishing, or recycling industries and  
2       the potential for and feasibility of incorporating the  
3       research results into industry practice; and

4               (2) how the project will promote collaboration  
5       among scientists and engineers from different dis-  
6       ciplines, such as electrical engineering, materials  
7       science, and social science.

8       (d) DISSEMINATION OF RESEARCH RESULTS.—Re-  
9       search results shall be made publicly available through—

10              (1) development of best practices or training  
11       materials for use in the electronics manufacturing,  
12       design, refurbishing, or recycling industries;

13              (2) dissemination at industry conferences;

14              (3) demonstration projects; and

15              (4) educational materials for the public pro-  
16       duced in conjunction with State and local govern-  
17       ments or non-profit organizations on the problems  
18       and solutions related to electronic waste.

19       (e) FUNDING CONTRIBUTION FROM FOR-PROFIT  
20       MEMBER OF CONSORTIUM.—The for-profit entity partici-  
21       pating in the consortium shall contribute at least 10 per-  
22       cent of the total research project cost, either directly or  
23       with in-kind contributions.

1 (f) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated to the Administrator to  
3 carry out this section:

4 (1) \$ [ ] for fiscal year 2010.

5 (2) \$ [ ] for fiscal year 2011.

6 (3) \$ [ ] for fiscal year 2012.

7 (4) \$ [ ] for fiscal year 2013.

8 (g) BIENNIAL REPORT.—Within 2 years after the  
9 date of enactment of this Act, and every 2 years there-  
10 after, the Administrator shall provide a list of the grants  
11 awarded under this section, the entities participating in  
12 each consortium receiving a grant, and a description of  
13 the research project and results funded by such grant.

14 **SEC. 5. NATIONAL ACADEMY OF SCIENCES REPORT ON**  
15 **ELECTRONIC WASTE.**

16 (a) IN GENERAL.—The Administrator shall enter  
17 into an arrangement with the National Academy of  
18 Sciences for a report, to be transmitted to the Congress  
19 not later than 1 year after the date of the enactment of  
20 this Act, on opportunities and barriers to reducing elec-  
21 tronic waste, reducing the use of hazardous materials in  
22 the manufacture of electronic devices, and designing elec-  
23 tronic devices to facilitate re-use and recycling.

1 (b) SPECIFIC REQUIREMENTS.—The Administrator  
2 shall ensure that the report described in subsection (a)  
3 addresses—

4 (1) the opportunities for and barriers to—

5 (A) recycling or safe disposal of electronic  
6 waste;

7 (B) reducing the use of hazardous mate-  
8 rials in electronic devices;

9 (C) the sale and re-use of electronic de-  
10 vices; and

11 (D) the recycling of electronic devices or  
12 components; and

13 (2) the current status of research and training  
14 programs to promote the environmental design of  
15 electronic devices to reduce electronic waste.

16 **SEC. 6. ENGINEERING CURRICULUM DEVELOPMENT**  
17 **GRANTS.**

18 (a) GRANT PROGRAM.—The Administrator shall  
19 award grants to reduce electronic waste to—

20 (1) institutions of higher education to develop  
21 curricula in environmental design that will be used  
22 for the training of electrical, mechanical, industrial,  
23 manufacturing, materials, and software engineers  
24 and other students at the undergraduate and grad-  
25 uate level; and

1           (2) **community colleges** to support the con-  
2           tinuing education of professionals in the electronic  
3           device manufacturing, design, refurbishing, or recy-  
4           cling industries about the environmental design of  
5           electronic devices.

6           (b) **MERIT REVIEW; COMPETITION**.—Grants shall be  
7           awarded under this section on a merit-reviewed, competi-  
8           tive basis.

9           (c) **USE OF FUNDS**.—Grants awarded under this sec-  
10          tion shall be used for activities that enhance the ability  
11          of an **institution of higher education** to broaden under-  
12          graduate and graduate-level engineering curriculum to in-  
13          clude green engineering design principles and consider-  
14          ation of product life cycles. Activities may include—

15               (1) developing and revising curriculum to in-  
16               clude multi-disciplinary elements;

17               (2) creating research and internship opportuni-  
18               ties for students through partnerships with industry,  
19               non-profit organizations, or government agencies;

20               (3) creating and establishing certificate pro-  
21               grams; and

22               (4) developing curricula for short-courses and  
23               continuing education for professionals in the envi-  
24               ronmental design of electronic devices.

1 (d) APPLICATION.—[An institution of higher edu-  
2 cation] seeking a grant under this section shall submit  
3 an application to the Administrator at such time, in such  
4 a manner, and with such information and assurances as  
5 the Administrator may require.

6 (e) AUTHORIZATION OF APPROPRIATIONS.—There  
7 are authorized to be appropriated to the Administrator to  
8 carry out this section:

9 (1) \$ \_\_\_\_\_ for fiscal year 2010.

10 (2) \$ \_\_\_\_\_ for fiscal year 2011.

11 (3) \$ \_\_\_\_\_ for fiscal year 2012.

12 (4) \$ \_\_\_\_\_ for fiscal year 2013.

13 **SEC. 7. “GREEN” ALTERNATIVE MATERIALS PHYSICAL**  
14 **PROPERTY DATABASE.**

15 (a) IN GENERAL.—The Director shall establish an  
16 initiative to develop a comprehensive physical property  
17 database for “green” alternative materials for use in elec-  
18 tronic products.

19 (b) PRIORITIES.—The Director, working with the  
20 [private sector/industry], shall develop a [roadmap] to  
21 establish priorities and the physical property characteriza-  
22 tion requirements for the “green” database.