

111TH CONGRESS  
1ST SESSION

# H. R. 445

To establish a research, development, demonstration, and commercial application program to promote research of appropriate technologies for heavy duty plug-in hybrid vehicles, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

JANUARY 9, 2009

Mr. SENSENBRENNER (for himself, Mr. EHLERS, Mr. WU, Mr. REICHERT, and Mr. SMITH of Texas) introduced the following bill; which was referred to the Committee on Science and Technology

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## A BILL

To establish a research, development, demonstration, and commercial application program to promote research of appropriate technologies for heavy duty plug-in hybrid vehicles, 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 “Heavy Duty Hybrid  
5 Vehicle Research, Development, and Demonstration Act of  
6 2009”.

1 **SEC. 2. ADVANCED HEAVY DUTY HYBRID VEHICLE TECH-**  
2 **NOLOGY RESEARCH, DEVELOPMENT, DEM-**  
3 **ONSTRATION, AND COMMERCIAL APPLICA-**  
4 **TION PROGRAM.**

5 (a) ESTABLISHMENT.—The Secretary shall establish  
6 a competitive research, development, demonstration, and  
7 commercial application program (referred to in this Act  
8 as the “program”) to provide grants to applicants to carry  
9 out projects to advance research and development and to  
10 demonstrate technologies for advanced heavy duty hybrid  
11 vehicles.

12 (b) APPLICATIONS.—

13 (1) IN GENERAL.—The Secretary shall issue re-  
14 quirements for applying for grants under the pro-  
15 gram.

16 (2) SELECTION CRITERIA.—The Secretary shall  
17 establish selection criteria for awarding grants under  
18 the program. In evaluating applications, the Sec-  
19 retary shall—

20 (A) consider the ability of applicants to  
21 successfully complete both phases described in  
22 subsection (c); and

23 (B) give priority to applicants who are best  
24 able to—

1 (i) fill existing research gaps and  
2 achieve the greatest advances beyond the  
3 state of current technology; and

4 (ii) achieve the greatest reduction in  
5 fuel consumption and emissions.

6 (3) PARTNERS.—An applicant for a grant  
7 under this section may carry out a project in part-  
8 nership with other entities.

9 (4) SCHEDULE.—

10 (A) APPLICATION REQUEST.—Not later  
11 than 180 days after the date of the enactment  
12 of this Act, the Secretary shall publish in the  
13 Federal Register, and elsewhere as appropriate,  
14 a request for applications to undertake projects  
15 under the program. Applications shall be due  
16 not later than 90 days after the date of such  
17 publication.

18 (B) APPLICATION SELECTION.—Not later  
19 than 90 days after the date on which applica-  
20 tions for grants under the program are due, the  
21 Secretary shall select, through a competitive  
22 process, all applicants to be awarded a grant  
23 under the program.

24 (5) NUMBER OF GRANTS.—The Secretary shall  
25 determine the number of grants to be awarded

1 under the program based on the technical merits of  
2 the applications received. The number of grants  
3 awarded under the program shall not be less than  
4 three or more than seven, and at least half of the  
5 grants awarded shall be for plug-in hybrid tech-  
6 nology.

7 (6) AWARD AMOUNTS.—The Secretary shall  
8 award not more than \$3,000,000 to each recipient  
9 per year for each of the 3 years of the project.

10 (c) PROGRAM REQUIREMENTS; TWO PHASES.—Each  
11 grant recipient shall be required to complete two phases:

12 (1) PHASE ONE.—

13 (A) IN GENERAL.—In phase one, the re-  
14 cipient shall research and demonstrate ad-  
15 vanced hybrid technology by producing or retro-  
16 fitting one or more advanced heavy duty hybrid  
17 vehicles.

18 (B) REPORT.—Not later than 60 days  
19 after the completion of phase one, the recipient  
20 shall submit to the Secretary a report con-  
21 taining data and analysis of—

22 (i) the performance of each vehicle in  
23 carrying out the testing procedures devel-  
24 oped by the Secretary under subparagraph  
25 (E);

1 (ii) the performance during such test-  
2 ing of each vehicle's components, including  
3 the battery, energy management system,  
4 charging system, and power controls;

5 (iii) the projected cost of each vehicle,  
6 including acquisition, operating, and main-  
7 tenance costs; and

8 (iv) the emissions levels of each vehi-  
9 cle, including greenhouse gas levels.

10 (C) TERMINATION.—The Secretary may  
11 terminate the grant program with respect to the  
12 project of a recipient at the conclusion of phase  
13 one if the Secretary determines that the recipi-  
14 ent cannot successfully complete the require-  
15 ments of phase two.

16 (D) TIMING.—Phase one begins upon re-  
17 ceipt of a grant under the program and has a  
18 duration of one year.

19 (E) TESTING PROCEDURES.—The Sec-  
20 retary shall develop standard testing procedures  
21 to be used by recipients in testing each vehicle.  
22 Such procedures shall include testing a vehicle's  
23 performance under typical operating conditions.

24 (2) PHASE TWO.—

1 (A) IN GENERAL.—In phase two, the re-  
2 cipient shall demonstrate advanced manufac-  
3 turing processes and technologies by producing  
4 or retrofitting fifty advanced heavy duty hybrid  
5 vehicles.

6 (B) REPORT.—Not later than 60 days  
7 after the completion of phase two, the recipient  
8 shall submit to the Secretary a report con-  
9 taining—

10 (i) an analysis of the technological  
11 challenges encountered by the recipient in  
12 the development of the vehicles;

13 (ii) an analysis of the technological  
14 challenges involved in mass producing the  
15 vehicles; and

16 (iii) the manufacturing cost of each  
17 vehicle, the estimated sale price of each ve-  
18 hicle, and the cost of a comparable non-hy-  
19 brid vehicle.

20 (C) TIMING.—Phase two begins at the con-  
21 clusion of phase one and has a duration of two  
22 years.

23 (d) RESEARCH ON VEHICLE USAGE AND ALTER-  
24 NATIVE DRIVE TRAINS.—The Secretary shall conduct re-  
25 search into alternative power train designs for use in ad-

1 vanced heavy duty hybrid vehicles. Such research shall  
2 compare the estimated cost, including operating and main-  
3 tenance costs, emissions reductions, and fuel savings of  
4 each design with similar non-hybrid power train designs  
5 under the conditions in which these vehicles are typically  
6 used, including, for each vehicle type—

- 7 (1) number of miles driven;
- 8 (2) time spent with the engine at idle;
- 9 (3) horsepower requirements;
- 10 (4) length of time the maximum or near max-  
11 imum power output of the vehicle is needed; and
- 12 (5) any other factors that the Secretary con-  
13 siders appropriate.

14 (e) REPORT TO THE CONGRESS.—Not later than 60  
15 days after the Secretary receives the reports from grant  
16 recipients under subsection (c)(2)(B), the Secretary shall  
17 submit to the Congress a report containing—

- 18 (1) an identification of the grant recipients and  
19 a description of the projects to be funded;
- 20 (2) an identification of all applicants who sub-  
21 mitted applications for the program;
- 22 (3) all data contained in reports submitted by  
23 grant recipients under subsection (c);
- 24 (4) a description of the vehicles produced or  
25 retrofitted by recipients in phase one and phase two

1 of the project, including an analysis of the fuel effi-  
2 ciency of such vehicles; and

3 (5) the results of the research carried out under  
4 subsections (d) and (h).

5 (f) COORDINATION AND NONDUPLICATION.—To the  
6 maximum extent practicable, the Secretary shall coordi-  
7 nate, and not duplicate, activities under this Act with  
8 other programs and laboratories of the Department of En-  
9 ergy and other Federal research programs.

10 (g) COST SHARING.—Section 988 of the Energy Pol-  
11 icy Act of 2005 (42 U.S.C. 16352) shall apply to the pro-  
12 gram established pursuant to this section.

13 (h) ELECTRICAL GRID RESEARCH PILOT PRO-  
14 GRAM.—The Secretary shall establish a pilot program  
15 through the National Laboratories and Technology Cen-  
16 ters of the Department of Energy to research and test  
17 the effects on the domestic electric power grid of the wide-  
18 spread use of plug-in hybrid vehicles, including plug-in hy-  
19 brid vehicles that are advanced heavy duty hybrid vehicles.

20 (i) DEFINITIONS.—For purposes of this section:

21 (1) ADVANCED HEAVY DUTY HYBRID VEHI-  
22 CLE.—The term “advanced heavy duty hybrid vehi-  
23 cle” means a vehicle with a gross weight between  
24 14,000 pounds and 33,000 pounds that is fueled, in  
25 part, by a rechargeable energy storage system.

1           (2) GREENHOUSE GAS.—The term “greenhouse  
2 gas” means—

- 3                   (A) carbon dioxide;  
4                   (B) methane;  
5                   (C) nitrous oxide;  
6                   (D) hydrofluorocarbons;  
7                   (E) perfluorocarbons; or  
8                   (F) sulfur hexafluoride.

9           (3) PLUG-IN HYBRID.—The term “plug-in hy-  
10 brid” means a vehicle fueled, in part, by electrical  
11 power that can be recharged by connecting the vehi-  
12 cle to an electric power source.

13           (4) RETROFIT.—The term “retrofit” means the  
14 process of creating an advanced heavy duty hybrid  
15 vehicle by converting an existing, fuel-powered vehi-  
16 cle.

17           (5) SECRETARY.—The term “Secretary” means  
18 the Secretary of Energy.

19           (j) AUTHORIZATION OF APPROPRIATIONS.—

20                   (1) There are authorized to be appropriated to  
21 the Secretary \$16,000,000 for each of fiscal years  
22 2009 through 2011 to carry out this section.

23                   (2) Of the funds authorized under paragraph  
24 (1), not more than \$1,000,000 per fiscal year may  
25 be used for—

1 (A) carrying out the studies required under  
2 subsection (d);

3 (B) carrying out the pilot program re-  
4 quired under subsection (h); and

5 (C) the administration of the program.

6 **SEC. 3. EXPANDING RESEARCH IN HYBRID TECHNOLOGY**  
7 **FOR LARGE VEHICLES.**

8 Subsection (g)(1) of the United States Energy Stor-  
9 age Competitiveness Act of 2007 (enacted as section  
10 641(g)(1) of the Energy Independence and Security Act  
11 of 2007 (42 U.S.C. 17231(g)(1))) is amended by inserting  
12 “vehicles with a gross weight over 16,000 pounds,” before  
13 “stationary applications”.

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