

112TH CONGRESS  
1ST SESSION

# H. R. 2399

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

JUNE 24, 2011

Mr. SENSENBRENNER introduced the following bill; which was referred to the Committee on Science, Space, 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       2011”.

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);

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; and

6 (C) ensure that plug-in hybrid vehicles eli-  
7 gible under the program are in compliance with  
8 standard J1772 or other appropriate Society of  
9 Automotive Engineers requirements.

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

13 (4) SCHEDULE.—

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

22 (B) APPLICATION SELECTION.—Not later  
23 than 90 days after the date on which applica-  
24 tions for grants under the program are due, the  
25 Secretary shall select, through a competitive

1 process, all applicants to be awarded a grant  
2 under the program.

3 (5) NUMBER OF GRANTS.—The Secretary shall  
4 determine the number of grants to be awarded  
5 under the program based on the technical merits of  
6 the applications received. The number of grants  
7 awarded under the program shall not be less than  
8 three or more than seven, and at least half of the  
9 grants awarded shall be for plug-in hybrid tech-  
10 nology.

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

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

16 (1) PHASE ONE.—

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

22 (B) REPORT.—Not later than 60 days  
23 after the completion of phase one, the recipient  
24 shall submit to the Secretary a report con-  
25 taining data and analysis of—

1 (i) the performance of each vehicle in  
2 carrying out the testing procedures devel-  
3 oped by the Secretary under subparagraph  
4 (E);

5 (ii) the performance during such test-  
6 ing of each vehicle's components, including  
7 the battery, energy management system,  
8 charging system, and power controls;

9 (iii) the projected cost of each vehicle,  
10 including acquisition, operating, produc-  
11 tion, testing, validation, and maintenance  
12 costs; and

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

15 (C) TERMINATION.—The Secretary may  
16 terminate the grant program with respect to the  
17 project of a recipient at the conclusion of phase  
18 one if the Secretary determines that the recipi-  
19 ent cannot successfully complete the require-  
20 ments of phase two.

21 (D) TIMING.—Phase one begins upon re-  
22 ceipt of a grant under the program and has a  
23 duration of one year.

24 (E) TESTING PROCEDURES.—The Sec-  
25 retary shall develop standard testing procedures

1 to be used by recipients in testing each vehicle.  
2 Such procedures shall include testing a vehicle's  
3 performance under typical operating conditions  
4 and through the vehicle's anticipated duty cycle.

5 (2) PHASE TWO.—

6 (A) IN GENERAL.—In phase two, the re-  
7 cipient shall demonstrate advanced manufac-  
8 turing processes and technologies by producing  
9 or retrofitting a minimum of fifty advanced  
10 heavy duty hybrid vehicles.

11 (B) REPORT.—Not later than 60 days  
12 after the completion of phase two, the recipient  
13 shall submit to the Secretary a report con-  
14 taining—

15 (i) an analysis of the technological  
16 challenges encountered by the recipient in  
17 the development of the vehicles;

18 (ii) an analysis of the technological  
19 challenges involved in mass producing the  
20 vehicles; and

21 (iii) the manufacturing cost of each  
22 vehicle, the estimated sale price of each ve-  
23 hicle, and the cost of a comparable non-hy-  
24 brid vehicle.

1                   (C) TIMING.—Phase two begins at the con-  
2                   clusion of phase one and has a duration of two  
3                   years.

4           (d) RESEARCH ON VEHICLE USAGE AND ALTER-  
5 NATIVE DRIVE TRAINS.—The Secretary shall conduct re-  
6 search into alternative power train designs for use in ad-  
7 vanced heavy duty hybrid vehicles. Such research shall  
8 compare the estimated cost, including operating and main-  
9 tenance costs, emissions reductions, and fuel savings of  
10 each design with similar non-hybrid power train designs  
11 under the conditions in which these vehicles are typically  
12 used, including, for each vehicle type—

- 13                   (1) number of miles driven;  
14                   (2) time spent with the engine at idle;  
15                   (3) horsepower requirements;  
16                   (4) length of time the maximum or near max-  
17                   imum power output of the vehicle is needed; and  
18                   (5) any other factors that the Secretary con-  
19                   siders appropriate.

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

- 24                   (1) an identification of the grant recipients and  
25                   a description of the projects to be funded;

1           (2) an identification of all applicants who sub-  
2           mitted applications for the program;

3           (3) all data contained in reports submitted by  
4           grant recipients under subsection (c);

5           (4) a description of the vehicles produced or  
6           retrofitted by recipients in phase one and phase two  
7           of the project, including an analysis of the fuel effi-  
8           ciency of such vehicles; and

9           (5) the results of the research carried out under  
10          subsections (d) and (h).

11          (f) COORDINATION AND NONDUPLICATION.—To the  
12          maximum extent practicable, the Secretary shall coordi-  
13          nate, and not duplicate, activities under this Act with  
14          other programs and laboratories of the Department of En-  
15          ergy and other Federal research programs.

16          (g) COST SHARING.—Section 988 of the Energy Pol-  
17          icy Act of 2005 (42 U.S.C. 16352) shall apply to phase  
18          two of the program established pursuant to this section.

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



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

2 (1) ADVANCED HEAVY DUTY HYBRID VEHI-  
3 CLE.—The term “advanced heavy duty hybrid vehi-  
4 cle” means a vehicle with a gross weight between  
5 14,000 and 56,000 pounds that is fueled, in part, by  
6 a rechargeable energy storage system, excluding  
7 truck tractors.

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

- 10 (A) carbon dioxide;  
11 (B) methane;  
12 (C) nitrous oxide;  
13 (D) hydrofluorocarbons;  
14 (E) perfluorocarbons; or  
15 (F) sulfur hexafluoride.

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

20 (4) RETROFIT.—The term “retrofit” means the  
21 process of creating an advanced heavy duty hybrid  
22 vehicle by converting an existing, fuel-powered vehi-  
23 cle.

24 (5) SECRETARY.—The term “Secretary” means  
25 the Secretary of Energy.

1           (6) TRUCK TRACTOR.—The term “truck tractor”  
2           has the meaning given such term in section  
3           31111(a)(3) of title 49, United States Code.

4           (j) AUTHORIZATION OF APPROPRIATIONS.—(1)  
5           There are authorized to be appropriated to the Secretary  
6           \$16,000,000 for each of fiscal years 2012 through 2014  
7           to carry out this section.

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

10           (A) carrying out the studies required under  
11           subsection (d);

12           (B) carrying out the pilot program required  
13           under subsection (h); and

14           (C) the administration of the program.

15           (3) Notwithstanding paragraphs (1) through (6) of  
16           subsection (p) of section 641 of the Energy Independence  
17           and Security Act of 2007 (42 U.S.C. 17231), the total  
18           amount authorized to be appropriated under that sub-  
19           section shall not exceed \$279,000,000 for each of the fis-  
20           cal years 2012 through 2014.

21 **SEC. 3. EXPANDING RESEARCH IN HYBRID TECHNOLOGY**  
22 **FOR LARGE VEHICLES.**

23           Subsection (g)(1) of the United States Energy Stor-  
24           age Competitiveness Act of 2007 (enacted as section  
25           641(g)(1) of the Energy Independence and Security Act

1 of 2007 (42 U.S.C. 17231(g)(1)) is amended by inserting  
2 “vehicles with a gross weight over 16,000 pounds,” before  
3 “stationary applications”.

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