

111TH CONGRESS
1ST SESSION

H. R. 445

IN THE SENATE OF THE UNITED STATES

SEPTEMBER 10, 2009

Received; read twice and referred to the Committee on Energy and Natural
Resources

AN ACT

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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Heavy Duty Hybrid
3 Vehicle Research, Development, and Demonstration Act of
4 2009”.

5 **SEC. 2. ADVANCED HEAVY DUTY HYBRID VEHICLE TECH-**
6 **NOLOGY RESEARCH, DEVELOPMENT, DEM-**
7 **ONSTRATION, AND COMMERCIAL APPLICA-**
8 **TION PROGRAM.**

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

16 (b) **APPLICATIONS.**—

17 (1) **IN GENERAL.**—The Secretary shall issue re-
18 quirements for applying for grants under the pro-
19 gram.

20 (2) **SELECTION CRITERIA.**—The Secretary shall
21 establish selection criteria for awarding grants under
22 the program. In evaluating applications, the Sec-
23 retary shall—

24 (A) consider the ability of applicants to
25 successfully complete both phases described in
26 subsection (c); and

1 (B) give priority to applicants who are best
2 able to—

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

6 (ii) achieve the greatest reduction in
7 fuel consumption and emissions.

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

11 (4) SCHEDULE.—

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

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

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

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

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

14 (1) PHASE ONE.—

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

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

24 (i) the performance of each vehicle in
25 carrying out the testing procedures devel-

oped by the Secretary under subparagraph
(E);

(ii) the performance during such testing of each vehicle's components, including the battery, energy management system, charging system, and power controls;

(iii) the projected cost of each vehicle, including acquisition, operating, and maintenance costs; and

(iv) the emissions levels of each vehicle, including greenhouse gas levels.

(C) TERMINATION.—The Secretary may terminate the grant program with respect to the project of a recipient at the conclusion of phase one if the Secretary determines that the recipient cannot successfully complete the requirements of phase two.

(D) TIMING.—Phase one begins upon receipt of a grant under the program and has a duration of one year.

(E) TESTING PROCEDURES.—The Secretary shall develop standard testing procedures to be used by recipients in testing each vehicle. Such procedures shall include testing a vehicle's performance under typical operating conditions.

1 (2) PHASE TWO.—

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

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

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

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

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

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

24 (d) RESEARCH ON VEHICLE USAGE AND ALTER-
25 NATIVE DRIVE TRAINS.—The Secretary shall conduct re-

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

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

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

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

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

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

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

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

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

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

23 (1) ADVANCED HEAVY DUTY HYBRID VEHI-
24 CLE.—The term “advanced heavy duty hybrid vehi-
25 cle” means a vehicle with a gross weight between

1 14,000 pounds and 33,000 pounds that is fueled, in
2 part, by a rechargeable energy storage system.

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

5 (A) carbon dioxide;

6 (B) methane;

7 (C) nitrous oxide;

8 (D) hydrofluorocarbons;

9 (E) perfluorocarbons; or

10 (F) sulfur hexafluoride.

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

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

19 (5) SECRETARY.—The term “Secretary” means
20 the Secretary of Energy.

21 (j) AUTHORIZATION OF APPROPRIATIONS.—

22 (1) There are authorized to be appropriated to
23 the Secretary \$16,000,000 for each of fiscal years
24 2010 through 2012 to carry out this section.

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

Attest: LORRAINE C. MILLER,
Clerk.