S 734

Advanced Vehicle Technology Act of 2011

Congress: 112 (2011–2013, Ended)
Chamber: Senate
Policy Area: Energy
Introduced: Apr 6, 2011
Current Status: Placed on Senate Legislative Calendar under General Orders. Calendar No. 150.
Latest Action: Placed on Senate Legislative Calendar under General Orders. Calendar No. 150. (Sep 6, 2011)
Official Text: https://www.congress.gov/bill/112th-congress/senate-bill/734

Sponsor

Name: Sen. Stabenow, Debbie [D-MI]
Party: Democratic • **State:** MI • **Chamber:** Senate

Cosponsors (2 total)

Cosponsor	Party / State	Role	Date Joined
Sen. Levin, Carl [D-MI]	D · MI		May 11, 2011
Sen. Wyden, Ron [D-OR]	D · OR		May 11, 2011

Committee Activity

Committee	Chamber	Activity	Date
Energy and Natural Resources Committee	Senate	Reported By	Sep 6, 2011

Subjects & Policy Tags

Policy Area:

Energy

Related Bills

Bill	Relationship	Last Action
112 S 1351	Related bill	**Jul 12, 2011:** Read twice and referred to the Committee on Energy and Natural Resources.
112 HR 1367	Identical bill	**Apr 7, 2011:** Referred to the Subcommittee on Energy and Environment.

Summary (as of Sep 6, 2011)

Advanced Vehicle Technology Act of 2011 - **Title I: Vehicle Research and Development -** (Sec. 101) Directs the Secretary of Energy (DOE) to conduct a program of basic and applied research, development, demonstration, and commercial application activities on materials, technologies, and processes with the potential to substantially reduce or eliminate petroleum use by, and emissions from, the nation's passenger and commercial vehicles. Requires the program to include activities in the areas of: (1) hybridization or full electrification of vehicle systems; (2) batteries, ultracapacitors, and other energy storage devices, (3) power electronics; (4) engine efficiency and combustion optimization; (5) waste heat recovery; (6) hydrogen vehicle technologies; (7) compressed natural gas and liquefied petroleum gas vehicle technologies; (8) reduction of vehicle weight, friction, and wear; (9) innovative propulsion systems; (10) hydraulic hybrid technologies; (11) engine compatibility with and optimization for a variety of transportation fuels; (12) refueling and charging infrastructure for alternative fueled and electric or plug-in electric hybrid vehicles; (13) gaseous fuels storage system and system integration and optimization; (14) sensing, communications, and actuation technologies for vehicle, electrical grid, and infrastructure; (15) efficient use, substitution, and recycling of potentially critical materials in vehicles; and (15) retrofitting advanced vehicle technologies to existing vehicles.

Directs the Secretary to ensure that DOE continues to support research, development, engineering, demonstration, and commercial application activities and maintains competency in mid- to long-term transformational vehicle technologies with potential to achieve deep reductions in petroleum use and emissions, including activities in the areas of: (1) hydrogen vehicle technology; (2) multiple battery chemistries and novel energy storage devices; (3) communication, connectivity, and power flow amount vehicles, infrastructure, and the electrical grid; and (4) lightweight vehicles and materials.

Requires activities under this Act to be carried out in collaboration with automotive manufacturers, heavy commercial and transit vehicle manufacturers, qualified plug-in electric vehicle manufacturers, compressed natural gas and liquefied petroleum gas vehicle manufacturers, vehicle and engine equipment and component manufacturers, manufacturing equipment manufacturers, advanced vehicle service providers, fuel producers and energy suppliers, electric utilities, institutions of higher education, national laboratories, and independent research laboratories.

Requires the Secretary to: (1) determine whether a wide range of companies that manufacture or assemble vehicles or components in the United States are represented in ongoing public private partnership activities; (2) formalize partnerships with industry-led stakeholder organizations, nonprofit organizations, industry consortia, and trade associations with expertise in advanced automotive and commercial vehicle technologies; (3) develop more efficient processes for transferring research findings and technologies to industry; (4) give consideration to conversion of existing or former vehicle technology manufacturing facilities for researching and developing advanced vehicle technologies; (5) establish and support public-private partnerships, dedicated to overcoming barriers in commercial application of transformational vehicle technologies, that utilize such industry-led technology development facilities of entities with demonstrated expertise in successfully designing and engineering pre-commercial generations of such transformational technology; (6) promote efforts to ensure that technology research, development, engineering, and commercial application activities funded under this Act are carried out; (7) coordinate activities between relevant DOE programs and offices and other federal agencies; (8) inform other agencies of the potential for demonstrating technologies funded by this Act; and (9) support and utilize state and local government initiatives in advanced vehicle technology development.

Requires the Secretary, when awarding cost-shared grants under this program, to give priority to those technologies that: (1) provide the greatest aggregate fuel savings based on the reasonable projected sales volumes of the technology, and

(2) provide the greatest increase in U.S. employment.

(Sec. 102) Requires the Secretary to conduct research, development, and demonstration activities on connectivity of vehicle and transportation systems, including technologies for: (1) onboard vehicle, engine, and component sensing and actuation; (2) vehicle-to-vehicle sensing and communication; and (3) vehicle-to-infrastructure sensing and communication.

(Sec. 103) Requires the Secretary to carry out a research, development, engineering, demonstration, and commercial application program of advanced vehicle manufacturing technologies and practices, including innovative processes to: (1) increase the production rate and decrease the cost of advanced battery manufacturing; (2) vary the capability of individual manufacturing facilities to accommodate different battery chemistries and configurations; (3) reduce waste streams, emissions, and energy-intensity of vehicle, engine, advanced battery, and component manufacturing processes; (4) recycle and remanufacture used batteries and other vehicle components for reuse in vehicles or stationary applications; (5) produce cost-effective lightweight materials such as advanced metal alloys, polymeric composites, and carbon fiber; (6) produce lightweight high pressure storage systems for gaseous fuels; (7) design and manufacture purpose-built hydrogen and fuel cell vehicles and components; (8) improve the calendar life and cycle life of advanced batteries; and (9) produce permanent magnets for advanced vehicles.

(Sec. 104) Requires the Secretary to report to Congress: (1) annually through 2017 on the technologies developed as a result of this Act, with emphasis on technologies that were successfully adopted for commercial applications and, if so, whether products relying on those technologies are manufactured in the United States; and (2) annually on activities undertaken, active industry participants, efforts to recruit new participants, progress of the program in meeting goals and timelines, and a strategic plan for funding of activities across agencies.

Title II: Medium and Heavy Duty Commercial and Transit Vehicles - (Sec. 201) Requires the Secretary, in partnership with relevant research and development programs in other federal agencies and appropriate industry stakeholders, to carry out cooperative research, development, demonstration, and commercial application activities on advanced technologies for medium- to heavy-duty commercial, recreational, vocational, and transit vehicles, including activities in the areas of: (1) engine efficiency and combustion research; (2) onboard storage technologies for compressed and liquefied petroleum gas; (3) development and integration of engine technologies designed for compressed natural gas liquefied petroleum operation of a variety of vehicle platforms; (4) waste heat recovery; (5) heavy hybrid, hybrid hydraulic, plug-in hybrid, and electric platforms and energy storage technologies; (6) reduction of friction, wear, and engine idle and parasitic energy loss; (7) advanced lightweight materials and vehicle designs; (8) increasing load capacity per vehicle; (9) recharging infrastructure; (10) compressed natural gas and liquefied petroleum gas infrastructure; (11) advanced internal combustion engines; (12) hydrogen vehicle technologies; (13) retrofitting advanced technologies onto existing truck fleets; and (14) integration of advanced systems onto a single truck and trailer platform.

Requires the Secretary to: (1) appoint a Director to coordinate such activities; and (2) report annually to Congress on activities, active industry participants, efforts to recruit new participants, progress of the program in meeting goals and timelines, and a strategic plan for funding of activities across agencies.

(Sec. 202) Requires the Secretary to: (1) conduct a competitive grant program to demonstrate the integration of multiple advanced technologies on Class 8 truck and trailer platforms with a goal of improving overall freight efficiency by 50%; (2) develop standard testing procedures and technologies for evaluating the performance of advanced heavy vehicle technologies under a range of representative duty cycles and operating conditions; (3) evaluate heavy vehicle

performance using work performance-based metrics other than those based on miles per gallon; and (4) undertake a pilot program of research, development, demonstration, and commercial applications of technologies to improve total machine or system efficiency for nonroad mobile equipment and seek opportunities to transfer relevant research findings and technologies between the nonroad and on-highway equipment and vehicle sectors.

Authorizes the Secretary to construct heavy duty truck and bus testing facilities.

(Sec. 205) Amends the Energy Policy Act of 2005 to repeal provisions that: (1) establish the joint flexible fuel/hybrid vehicle commercialization initiative; (2) require the Secretary to accelerate efforts for improving batteries and other rechargeable energy storage systems, power electronics, hybrid systems integration, and other technologies for use in hybrid vehicles; (3) establish the domestic manufacturing conversion grant program; and (4) establish a research, development, and demonstration program to determine the feasibility of using hydrogen propulsion in light-weight vehicles and the integration of the associated hydrogen production infrastructure using off-the-shelf components.

Amends the Energy Independence and Security Act of 2007 to repeal the vehicle energy storage demonstration program.

Actions Timeline

- **Sep 6, 2011:** Committee on Energy and Natural Resources. Reported by Senator Bingaman with an amendment in the nature of a substitute. With written report No. 112-70.
- **Sep 6, 2011:** Placed on Senate Legislative Calendar under General Orders. Calendar No. 150.
- **Jul 14, 2011:** Committee on Energy and Natural Resources. Ordered to be reported with an amendment in the nature of a substitute favorably.
- **May 19, 2011:** Committee on Energy and Natural Resources. Hearings held. Hearings printed: S.Hrg. 112-38.
- **Apr 6, 2011:** Introduced in Senate
- **Apr 6, 2011:** Read twice and referred to the Committee on Energy and Natural Resources.