

Federal Electric Vehicle Drive Policies

In March 2009, President Obama pledged to have 1 million plug-in hybrid electric vehicles (PHEVs) on the road by 2015. While the penetration of electric drive vehicles in the American automobile market could significantly reduce petroleum use, vehicle emissions, and fuel expenditures countrywide, there are several challenges to implementing the President's 2015 goal.

Barriers to implementation include the current cost of batteries for electric vehicles (which reflects the limited availability of raw materials, technical limitations, and low production volumes), as well as the lack of supporting infrastructure and technical standards necessary for mass penetration of these vehicles into the market. Furthermore, for electric vehicles to become a viable option for the driving public, their potential impacts on the electricity grid must be well understood.

The federal government promotes electric vehicles through policies supporting research and development, manufacturing, and deployment and integration. While several of these programs are already underway, legislation before Congress proposes new policies related to electric drive vehicles. Existing and proposed programs are outlined in the table below. These are in addition to the research and development and deployment programs at the Department of Energy funded through the annual appropriations process.

| | Existing Programs | Proposed Programs | | |
|---------------------------------|---|---|--|--|
| | | H.R. 2454 | S. 1462 | S. 1733 |
| Manufacturing Assistance | Advanced Technology Vehicle Manufacturing Loan Program: | Advanced Technology Vehicle Manufacturing Loan Program Authorization Increase: | This bill would not expand or create any financial assistance programs. | This bill would not expand or create any financial assistance programs for manufacturers. |
| | This program provides loans to companies producing vehicles or components that improve fuel economy at least 25% above 2005 levels. Congress authorized this program through the Energy Independence and Security Act (EISA) of 2007 and appropriated \$25 billion in the fall of 2008. In June 2009, DOE granted the first \$8 billion in loans to Ford, Nissan, and Tesla. According to DOE, this program seeks to improve fuel economy through several pathways rather than by focusing on a single technology. All three of the first grant recipients, however, will work on vehicle electrification. Ford will also apply funds to improve advanced internal combustion engine technologies. | This bill would increase the authorization for the program from \$25 billion to \$50 billion. While these funds may be spent on any advanced technology, it is likely that a significant portion will be spent on plug-in vehicle technologies. | The bill would create an EERE research program focused on battery manufacturing and battery systems for electric drive vehicles; this program would be authorized to receive appropriations from 2009 through 2018. S.1462 does not indicate how this research program would relate to other established and planned DOE activities. | |
| | Electric Drive Vehicle Battery and Component Manufacturing Initiative: | DOE Vehicle Manufacturing Assistance Program: | | |
| | The American Recovery and Reinvestment Act of 2009 provided \$2 billion for the manufacturing of batteries and electric drive components. In August 2009, DOE awarded grants to 30 recipients. 75% of the investment will support the production of batteries and battery components by U.S. manufacturers as well as a lithium-ion battery recycling project. U.S. manufacturers of electric drive train components, including motors and power electronics, will receive the remaining funds. This program will lead to at least \$4 billion in investments because grant recipients must match the government's contribution. | The bill would create a program within DOE to provide funding for the reconstruction or retooling of U.S. vehicle and battery manufacturing facilities in order to produce plug-in electric drive vehicles. DOE would determine the appropriate financing mechanism; funds to be provided through allowances from the cap-and-trade program. | | |
| Vehicle Electrification | Plug-In Hybrid Credits | DOE Vehicle Electrification Program: | | DOE Clean Vehicle Technology Fund |
| | The <i>Emergency Economic Stabilization Act of 2008</i> added to the tax credits introduced in <i>EPAAct 2005</i> a credit for plug-in vehicles, both hybrid- and battery-electric. The <i>American Recovery and Reinvestment Tax Act of 2009</i> (the stimulus package) expanded that credit. The credit is now available for a new plug-in electric drive vehicle having a battery capacity of at least 4 kilowatt-hours, which brings a credit of \$2,500. Each kilowatt-hour of battery above this adds \$417 to the credit, up to a maximum of \$7,500 for vehicles up to 14,000 lbs gross vehicle weight. As in <i>EPAAct 2005</i> , the amount of the credits begins a phase-out after a manufacturer exceeds a vehicle sales limit, in this case 200,000 vehicles. Also, a credit for plug-in conversion kits, allowing the conversion of hybrid-electrics to plug-in hybrids, in the amount of 10% of the cost of the kit is available. | Both the H.R. 2454 and S. 1462 call for the creation of a vehicle electrification program within DOE. The program would expand upon the Recovery Act efforts to provide financial assistance to deployment and integration projects in multiple regions of the country. In contrast with the Recovery Act initiative, state, local, or tribal governments rather than companies must apply for funding, although projects may be jointly sponsored by utilities or private entities. Neither bill specifies a funding mechanism for this program, but both bills list permissible uses for the awards. Funds may be used to offset the incremental cost of plug-in vehicles, to purchase electric charging infrastructure, or to purchase smart grid equipment. S. 1462 also allows the purchase of advanced batteries with government funds. Both the House and Senate bills require that DOE make data from projects available to the public. | | This bill would create the Clean Vehicle Technology Fund to provide financial assistance for the deployment of electric vehicle technology. 5% of total funds must be used to create a clean national transportation low emissions plan, which would establish an electric vehicle strategic deployment goal for 2020 and project the near- and long-term infrastructure and standardization needs for EVs, electricity providers, vehicle manufacturers, and electricity purchasers. The remaining monies in the Clean Vehicle Technology Fund must be used to support the development and demonstration of light- and heavy-duty plug-in electric vehicles. DOE would establish pilot projects to determine regions in the U.S. most ready to deploy electric vehicle infrastructure. |
| | Vehicle Electrification Initiative: | | Federal Fleet Pilot Program: | |
| | The Recovery Act provides \$400 million in funding for vehicle electrification activities. DOE awarded approximately 90% of this funding to 11 grant recipients for deployment and integration projects. Dozens of locations around the country will host test demonstrations of plug-in hybrid and all-electric vehicles. Grant funds will help cover the cost of purchasing thousands of vehicles for these projects and the cost of installing charging infrastructure. The project proposals involve a variety of vehicle types, including pick-up trucks, mini-vans, delivery trucks, and shuttle buses. DOE has distributed the remaining funds to seven education and workforce training programs in order to facilitate the transition to electric transportation systems. | | The Senate bill would encourage the penetration of plug-in vehicles in the federal fleet by creating a pilot deployment project housed within the Federal Energy Management Program. The program is authorized to provide grants to offset the incremental cost of pre-commercial plug-in vehicles and the cost of installing recharging infrastructure at federal facilities between 2010 and 2015. | |

Source: American Council for an Energy-Efficient Economy (www.aceee.org)