

New study outlines prospects for electric vehicle market growth in the U.S.

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The Obama administration has set a goal of getting one million electric cars on the road by 2015 to reduce air pollution and dependence on fossil fuels. These vehicles are becoming available, but will Americans buy them? The answer, according to a new study by researchers at Harvard Kennedy School, is yes - but only if the electric vehicles are competitive with conventional cars on cost, range and fueling convenience.

The report from researchers in the school's Belfer Center for Science and International Affairs compares the lifetime operating costs of electric cars versus plug-in hybrids and gasoline-powered cars over a range of potential scenarios during the next two decades.

The study, "[Will Electric Cars Transform the U.S. Vehicle Market](#)," authored by Henry Lee and Grant Lovellette, finds that at current purchasing and operating costs, plug-in hybrid cars are \$5,377 more expensive than gasoline-powered cars, while battery-only vehicles cost \$4,819 more over the life of the car. However, the researchers project that as costs shift over the next 10 to 20 years through cheaper batteries and more expensive gasoline, the lifetime costs of battery-powered cars will likely be cheaper than gas-powered cars - from \$1,155 to \$7,181 less in different scenarios. The study finds that plug-in hybrids stay more expensive than purely battery-powered cars in every scenario.

The researchers note that if consumers are to buy the millions of battery-powered cars required to cut emissions and gasoline consumption significantly, the cost of gasoline will need to rise above \$4.50 a gallon, and battery technology will need to improve to increase range and reduce cost. The study says the private sector will likely be willing to make the investments needed to build an adequate charging infrastructure, reducing the need for government investments.

Henry Lee, faculty co-chair of the Energy

Technology Innovation Policy research group and a co-author of the report, said. "The industry will need improvements in battery technology and reductions in battery [costs](#) for electric vehicles to meet their potential. Such improvements will require continued government support of battery research and development and higher gasoline prices either through government action in the form of taxes or a cap and trade program or through the market."

More information: Lee, Henry and Grant Lovellette, "Will Electric Cars Transform the U.S. Vehicle Market." Discussion Paper 2011-08, Cambridge, Mass.: Belfer Center for Science and International Affairs, July 2011
belfercenter.ksg.harvard.edu/p..._vehicle_market.html

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