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HYBRIDS BETTER FOR THE CLIMATE THAN ELECTRICS IN MOST STATES

Carbon Emissions from Battery Production Outweigh
Progress Toward Greener Grid

Interactive state-by-state map

PRINCETON, N.J. — A new state-by-state analysis of the climate impacts of electric cars, plug"in hybrid electrics, and conventional gas-powered hybrid cars found that in 39 states, a high-efficiency, conventional gas-powered hybrid like the Toyota Prius, is better for the climate (produces fewer total "lifecycle" carbon emissions) than the least"polluting, all"electric vehicle, the Honda Fit Electric, over the first 50,000 miles the car is driven.

The study, *A Roadmap to Climate-Friendly Cars: 2013*, from Climate Central, a science and journalism organization in Princeton, N.J. takes into account carbon emissions from the production of electricity used to charge the car, emissions from driving, and carbon emissions from vehicle manufacturing.

From 2010 to 2012 the nation's energy mix got substantially greener, with roughly an 8 percent reduction in carbon emissions from electricity generation across the country. "In many states this shift away from coal to natural gas and renewables was enough to make driving and recharging electric cars better for the climate. But when emissions from manufacturing the battery and other electric components is included, this advantage often goes up in smoke" said Alyson Kenward, PhD, co-author of the study.

Producing the battery and other electrical components for an electric car creates a 10,000 to 40,000-pound carbon dioxide pollution disadvantage compared to an equivalent conventional hybrid vehicle. This "carbon debt" can only be overcome after tens, or even hundreds of thousands of miles of driving and recharging from clean energy sources.

The popular Tesla S, which has the longest driving range of any electric vehicle, has a much larger battery than most electrics and thus larger carbon emissions associated with its production. As a result, in 46 states, the gas-powered Lexus ES hybrid is better for the climate than the electric Tesla Model S, over the first 100,000 miles the car is driven.

"The good news is that Americans have a rapidly growing number of climate friendly cars to choose from," said Daniel Yawitz, co-author of the study.

Climate Central's analysis looked at the most energy efficient cars on the road, including 17 conventional hybrids like the Prius, four plug-in hybrids like the Chevrolet Volt, and nine all-electric cars like the Nissan Leaf. In 2013, the EPA rated 15 all-electrics, four plug-ins, and 35 conventional hybrid vehicles, up from eight, three and 28 respectively in 2012.

See our interactive map to find the most climate friendly cars in your state