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Contacts: Eric Larson, 609-986-1987
Alyson Kenward, 609-613-1127
Richard Wiles 609-751-1215

STATE-BY-STATE ROADMAP TO CLIMATE-FRIENDLY CARS

Electric cars critical to zero-emissions future, but not always best choice today

Dependence on coal and natural gas short-circuits electric's potential

[Interactive State-by-State Map](#)

(Princeton, N.J.) - America's high-carbon electricity grid is short-circuiting efforts to give consumers climate-friendly, electric-vehicle options. Depending on where you live, generating the electricity to charge an electric car can produce more greenhouse-gas pollution than driving a fuel-efficient gasoline-powered car.

Electric cars are much better for the climate than the average-mileage vehicle in the U.S. But in 36 states, the hybrid electric Toyota Prius produces less greenhouse-gas pollution than the all-electric Nissan Leaf, because when you plug in a Leaf to recharge, you are tapping into electricity generated largely by burning coal and natural gas in those states. This is one of the main findings in a new report, [A Roadmap to Climate-Friendly Cars](#), released today by Climate Central, a science and communications organization.

"The good news is that Americans have lots of choices to reduce the carbon footprint from their daily driving," said Eric Larson, who is on the research faculty at Princeton University and is a senior scientist at Climate Central where he was the lead author of the report. "In many states, popular high-mileage hybrid and conventional gas-powered cars are excellent climate-friendly alternatives to electric cars".

The report provides a [state-by-state roadmap to the most climate-friendly cars](#) on the market today. The [analysis compares](#) life-cycle emissions associated with the Nissan Leaf and Chevy Volt, the top-selling all-electric and plug-in electric vehicles, with hybrids like the Prius and other high-mileage conventional gas-powered cars. (Hybrid electric vehicles like the Prius can be thought of simply as high-efficiency gasoline cars because they derive all of their power from gasoline: their batteries are recharged by running the engine and recovering braking energy.)

In the 10 states with the most carbon-polluting electricity generation, there are 20 cars that are better for the climate than the Leaf; 13 of them are gas-powered vehicles with conventional engines. The rest are gas-powered hybrids.

The partially electric Chevy Volt has a similar profile, depending on how often a driver engages its gasoline engine. A Volt, like the Leaf, plugs in to charge its battery, but when the charge is depleted during driving it switches to its onboard gasoline engine to keep going. If a Volt drives half its miles using gasoline and half using electricity from plug-in charging of its battery, it is a bigger carbon polluter than the Prius in 45 states.

Coal is the largest contributor to the high-carbon footprint of our electrical grid today. In states like Wyoming or Indiana, where 90 percent or more of the electricity comes from coal, driving a Leaf is responsible for much more greenhouse-gas emissions per mile (about 0.9 pounds) than a Prius (about 0.5 pounds). The Leaf fares better in states that get a significant share of their electricity from natural gas, like Rhode Island or Nevada (about 0.6 pounds per mile), but typically still produces more emissions than a Prius.

The Leaf does best in states that rely heavily on nuclear, like Connecticut (0.3 pounds), or on hydro power, like Idaho or Washington (0.1 pounds).

"Our findings don't mean that we won't need electric cars as an option for fighting climate change,"

Larson said. "In the long term, electric cars may be the cornerstone of personal mobility in a world where carbon emissions are next to zero, which will be required to stabilize the climate."

But the report highlights the importance of fuel-efficient, gasoline-powered vehicles as a practical, immediate, and technologically viable strategy to begin to stabilize the climate.

This is a technology we understand and that consumers want," said Alyson Kenward, PhD, scientist at Climate Central and co-author of the report. "We expect to see a lot more climate-friendly hybrid, diesel, and conventional gas options in the near future as new fuel economy standards are phased in and raise gas mileage to nearly 55 mpg for the average new car by 2025 – about double today's level."

"No matter where you live, the Leaf and the Volt have better mileage than the average car on the road today. But, until we shift much more of our electricity generation to lower-carbon alternatives, in many states, efficient gasoline cars will be the best way to minimize the carbon footprint of daily driving," Larson said.

Headquartered in Princeton, New Jersey, Climate Central (climatecentral.org) is a non-profit research and journalism organization providing authoritative and up-to-date information to help the public and policymakers make sound decisions about climate and energy.

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