

for a gasoline-powered vehicle is \$1,117. The study only examined fuel costs, but maintenance costs for electric vehicles also have been found to be lower because the engines have fewer moving parts.

State Action

As more people buy and drive electric vehicles, states are working both to promote their use and make up for lost gas-tax revenues.

■ **Incentives.** Financial incentives, including tax credits and reduced registration fees, are popular ways to promote electric vehicles. Forty-five states and the District of Columbia currently offer incentives for certain hybrid or electric vehicles, or both. Rebates or tax credits for purchasing the vehicles range from \$50, offered annually to vehicle owners in California's San Diego Gas and Electric service area, to a \$10,000 one-time break in Delaware and other states. Additional incentives include tax credits for electric charging stations, research project grants and alternative fuel technology loans.

In May 2014, eight states released an [action plan](#) to put 3.3 million zero-emission vehicles (ZEVs) on the road by 2025. The plan—agreed to by California, Connecticut, Maryland, Massachusetts, New York, Oregon, Rhode Island and Vermont—calls for consumer incentives, including allowing ZEV drivers to use high-occupancy vehicle lanes and building additional charging stations.

State legislatures and governors are not the only ones offering incentives to plug-in electric vehicle buyers. Some electric utility companies in Colorado, Delaware, Florida, Georgia, Indiana, Kentucky, Maryland and Pennsylvania offer a \$10,000 rebate to their customers and employees who purchase a new 2017 Nissan Leaf at participating dealerships. And, in what is considered the largest single investment by any state to promote electric vehicles, California utility regulators in June approved up to \$738 million to fund EV projects. The projects will be carried out over five years by the state's three investor-owned utilities.

Some states have also recently introduced incentives to encourage businesses and residents to install charging stations. For instance, the Massachusetts Electric Vehicle Incentive Program provides grants of 50 percent of the cost, up to \$25,000, to workplaces that install a charging station. Several utilities have introduced programs that provide rebates and grants for these projects. Iowa's Alliant Energy offers a \$500 rebate to residential customers who purchase and install a station, and Minnesota's Dakota Electric offers a similar rebate.

■ **Fees.** With increased use of electric vehicles comes a decrease in gas tax revenues, which typically pay for the upkeep of roads and other

infrastructure. To make up for the loss, legislatures are increasingly levying fees on electric vehicles. Nine states enacted new fees last year, although the Oklahoma Supreme Court struck down that state's measure as unconstitutional. Utah is the only state as of June 2018 to pass new fees, bringing the total number of states with fees to 19. Many fee increases were included in larger transportation funding packages, alongside hikes in gas taxes, vehicle registration fees or other transportation-related revenues.

Connecticut, Illinois and other states, along with the District of Columbia, have reduced annual registration fees for electric or alternative fuel vehicles.

[Oregon](#) and [South Carolina](#) have taken slightly different approaches. Oregon's fee doesn't take effect until 2020, but the state was the first to adopt a road-usage pilot program. Called OReGo, it charges vehicles a small fee for every mile driven instead of assessing a flat rate. It's open to traditional and electric vehicles, with a reduced fee for electric cars.

States have yet to realize significant revenue gains from these special fees since the market share for hybrid and electric vehicles is still small.

Federal Action

Several federal incentives support developing and deploying alternatives to conventional vehicles. One, a \$7,500 federal tax credit on electric vehicle purchases, is available in addition to state incentives. Once 200,000 qualified vehicles have been sold by each automotive manufacturer, the credit is scheduled to expire. However, policymakers are considering [expanding the vehicle cap](#), as it could harm two large American automakers, GM and Tesla. Because they began selling electric vehicles before the tax credit was available, their customers would not benefit from the incentives, giving automakers who were late to the market a competitive advantage.

Another federal tax credit—covering up to 30 percent of equipment costs, not to exceed \$30,000—is available to offset the cost of installing alternative fueling equipment. Other incentives include federal grants to convert older vehicles to new technologies, research grants and alternative fuel technology loans.

Utilities are asking Congress for help as they attempt to keep tapping into electric vehicle demand. Thirty-six of the nation's largest utilities wrote a letter to congressional leadership in March, asking for a lift of the cap on electric vehicle tax credits. The signatories include California's Pacific Gas & Electric, New York's Consolidated Edison, North Carolina's Duke Energy and utilities from nearly every state.

Four for the Road

Hybrid and electric vehicles fall into four general categories:

- **Battery electric vehicles (BEVs):** Run entirely on an electric motor and rechargeable battery. Also known as all-electric vehicles. Example: Nissan Leaf.
- **Plug-in hybrid electric vehicles (PHEVs):** Combine two propulsion modes, an electric motor and rechargeable battery; can switch to gas once battery power is depleted. Example: Chevrolet Volt.
- **Plug-in electric vehicles (PEVs):** Run at least partially on battery power and can be charged from an outlet. Includes all BEVs and PHEVs.
- **Hybrid electric vehicles (HEVs):** Use a gas engine with an electric motor, but can't be recharged from an outlet. Example: Toyota Prius.

Additional Resources

- [State Hybrids and Electric Vehicle Incentives](#)
- [NCSL Transportation Funding and Finance Resources](#)

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