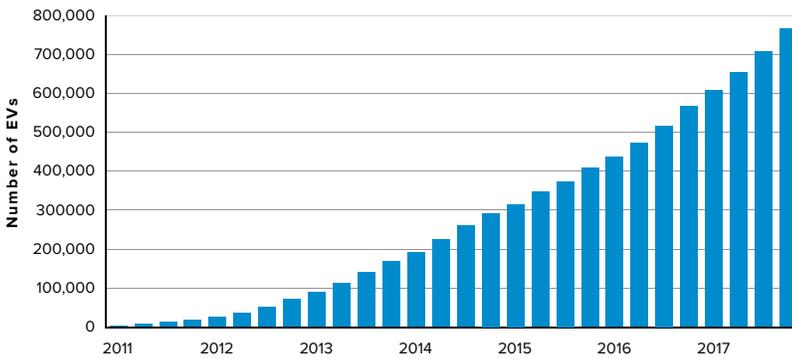


Electric Vehicle Trends & Key Issues

March 2018

ELECTRIC VEHICLES ON THE ROAD

780,000 EVs Are on the Road in the U.S.



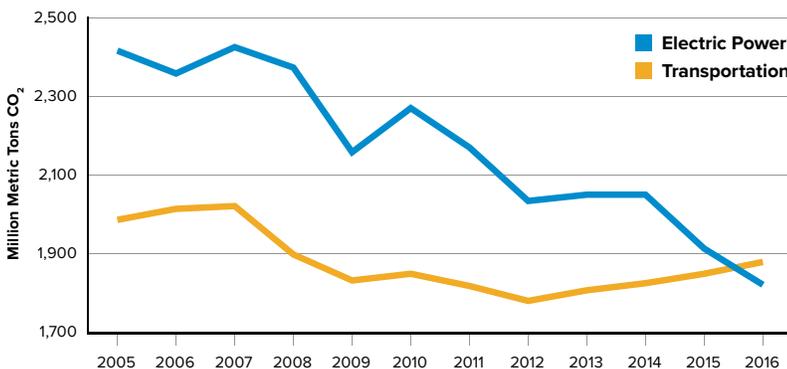
Source: InsideEVs.com and HybridCars.com

3 KEY FACTS

- About 780,000 EVs are on the road in the U.S. (through January 2018).
- Total EV sales for 2017 increased 26% compared to 2016, against an overall auto market that was down 2%.
- Q4 2017 was the best sales quarter ever—beating Q4 2016 by 17%.

TRENDS

Power Sector Carbon Emissions Are Now Below Transportation Sector Emissions



Source: EIA, *Monthly Energy Review* (November 2017)

3 KEY FACTS

- In 2016, carbon dioxide emissions for the power sector dropped below the transportation sector. The first time since the 1970s.
- In fact, carbon dioxide emissions from electricity generation declined nearly 25% below 2005 levels by the end of 2016.
- Preliminary estimates indicate these trends continued in 2017.

POLICY UPDATE

STATE REGULATION

✓ Approval

On February 16, 2018, the Oregon PUC approved a \$4.3 million pilot proposed by Portland General Electric to install and own six electric bus charging stations to support an electric bus route and install and own six “Electric Avenue” charging stations comprised of up to four DC fast chargers and one Level 2 charger each. (Docket UM 1811)

✓ Approval

On January 11, 2018, the California PUC approved 15 “priority review” transportation electrification pilot projects proposed by PG&E, SCE, and SDG&E, with a total budget of \$42 million. The projects encompass a wide range of transportation applications including ports, airports, and commercial vehicles, as well as passenger cars. See EV Access for All section. (Docket 17-01-020. More detail: [CPUC Summary](#))

✓ Approval

On November 30, 2017, the Massachusetts DPU approved a \$45 million EV program proposed by Eversource Energy to install and own “make ready” infrastructure for nearly 4,000 Level 2 chargers at long-dwell locations and 72 DC fast chargers at travel locations. (Docket 17-05. More detail: [NRDC Summary](#))

STATE LEGISLATION

■ Georgia

An effort to reinstate an EV purchase incentive is underway with HB 98. A previous tax credit of \$5,000 was a major driver for EV adoption within the state. EV sales in the state dropped significantly following its removal. (More detail: [Green Car Reports](#))

■ Pennsylvania

HB 1446 would set a state target to increase transportation electrification 50 percent by 2030 over a baseline forecast and require electric companies to submit proposals for EV charging infrastructure in support of the goal. (More detail: [HB 1446](#))

■ Registration Fees

EV registration fees were the most frequently considered EV policy by states in 2017. While the fees are nominally intended to compensate for gasoline tax revenue that EV drivers do not pay, the fees range from \$30 to as high as \$300—often much more than a gasoline vehicle would pay. Seventeen states have registration fees for EVs, with eight states enacting new fees in 2017, according to NC State University’s Clean Technology Center’s [50 States of Electric Vehicles](#) report.

■ VW Settlement

On January 29, 2018, all 50 states plus the District of Columbia and Puerto Rico were officially designated as beneficiaries to the Environmental Mitigation Trust, a \$2.9 billion fund established under the VW settlement. State plans outlining how funds will be spent are expected over the next several months. Already, more than half of the states have indicated interest in allocating some of their funds toward EV charging infrastructure. (More detail: [VW Settlement Clearinghouse](#))

FEDERAL REGULATION AND POLICY

■ Vehicle Standards

The U.S. Environmental Protection Agency (EPA) and National Highway Transportation Safety Administration (NHTSA) are reconsidering their final determination regarding a 2017 mid-term evaluation of greenhouse gas (GHG) standards for passenger vehicles for model years 2022-2025, with a decision due by April 1, 2018. Once the agencies act on the reconsideration, they could make significant changes to both EPA’s GHG standards and NHTSA’s related Corporate Average Fuel Economy (CAFE) standards. These changes could impact EV sales incentives under each regulatory program, as well as California’s Zero Emission Vehicle (ZEV) regulations. (More detail: [EPA](#))

■ Tax Credit

The federal tax credit of up to \$7,500 for EVs remains in place. The credit has a manufacturer cap of 200,000 qualifying vehicles, after which the credit begins to sunset. (More detail: [IRC 30D](#))

OUR TAKE

THE ENERGY GRID IS READY FOR EVs

- Today's energy grid can easily accommodate EV charging because the vast majority occurs at relatively low power and over long durations, such as while EVs are parked at home or work. Even as the number of EVs grows, the ability to shape load through pricing and other charging management strategies will help minimize impacts to the energy grid. (More details: [Regulatory Assistance Project](#) blog)

FEWER THAN

1%

OF THE 277,000 EVs ON CALIFORNIA ROADS

required a service line or distribution upgrade solely to support the EV at a residential location.

- Cost-benefit analyses of integrating EVs into the energy grid—taking into account costs to the energy grid to accommodate the growing number of EVs—consistently have shown that EVs provide a net benefit for all customers. The [California Transportation Electrification Assessment](#) showed modest distribution upgrade costs through 2030 even under aggressive adoption scenarios. Similar results were found in different states in a series of studies from [M.J. Bradley and Associates](#).
- Real-world data shows that energy grid upgrades due to EV adoption are minimal. A joint [Load Research Report](#) from PG&E, SCE, and SDG&E found that distribution upgrades due to the more than 277,000 EVs on the road in California (as of October 2017) are “immaterial.” The results bode well for other states, as California today has by far the highest EV sales per capita.

EV ACCESS FOR ALL

Electric companies are an integral partner in successfully expanding EVs to more customers and across multiple transportation modes. Given the low operating costs and low emissions, transit agencies and school districts are looking to move more passengers on electric buses. Some recent examples include:

- In January 2018, Southern California Edison (SCE) received approval to deploy make-ready infrastructure (up to 20 charge ports) at bus depots and along bus routes to serve electric commuter buses.
- In New York City, the [Metropolitan Transit Authority](#) is planning trials of electric buses and Consolidated Edison is determining the various roles it could play in the charging of electric buses, including managed charging services, as part of a \$25 million [RFI](#) to identify and explore concepts and partnerships to increase EV penetration.
- Pacific Gas & Electric (PG&E) is deploying make-ready infrastructure and providing incentives to school bus fleet operators in exchange for shifting vehicle charging times to align with renewable energy generation.
- In Albuquerque, [PNM](#) is working with the city to support 20 state-of-the-art electric buses that are part of the city's new rapid transit initiative.

“The common thread running through smart transportation initiatives is electricity.”

— PAT VINCENT-COLLAWN

Chairman, President and CEO
PNM Resources

ELECTRIC FLEETS

Electric companies also are working with shuttle service providers and fleet delivery services in their transition to EVs.

- In January 2018, San Diego Gas and Electric (SDG&E) received approval to install, own, operate, and maintain five charging stations for shuttle service providers. SDG&E will install solar-plus-storage at one station to test managed charging.

- SDG&E also is partnering with local delivery services to install, own, operate, and maintain charging stations for up to 90 new medium-duty electric delivery vehicles. SDG&E and [UPS](#) plan to deploy 20 Level 2 chargers and one DC fast charger at each of three locations.

What's next? Electric companies are working with rideshare and taxi operators to extend the benefits of electric transportation to even more people.

DRIVING THE MARKET: MEMBER SPOTLIGHT ON DC FAST CHARGING



AVISTA

A DC fast charger at a visitor center in Rosalia, WA, is located strategically on a major travel corridor between Spokane and Pullman. The charging station is one of seven DC fast chargers that Avista is installing, owning, and operating throughout its service territory as part of a \$3 million pilot program approved by the state commission in April 2016. (Docket UE-160082. More details: [Avista press release](#))



HAWAIIAN ELECTRIC

Hawaiian Electric Company President and CEO Alan Oshima stands beside his own plug-in Ford Fusion at one of a dozen DC fast charging stations that the Hawaiian Electric Companies own and operate across their service territory on Oahu, Maui, and Hawaii Island. The company recently changed its pricing strategy from a flat rate to a time-varying rate to encourage drivers to charge midday when excess solar power is available. (More details: [Hawaiian Electric press release](#))



GEORGIA POWER

Darren Epps of Southern Company charges at one of the 38 “charging islands” that Georgia Power owns and operates throughout its service territory. Georgia Power launched an electric transportation pilot in 2014 in response to local market needs: from 2010 to 2014, Georgia became the fastest growing EV market in the nation, driven in part by a \$5,000 state tax credit (see Policy Update section), and EV drivers needed places to charge outside of home or work. The community charging islands, as well as other charging infrastructure programs and an education and outreach campaign, helped to raise awareness, support the needs of the existing EV market, and support future market growth. (More detail: [Georgia Power website](#))

