

Delaware's Automotive Future is Electric

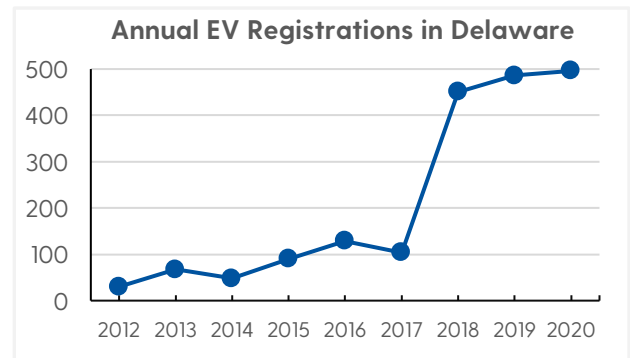
By Philip Barnes and Jorge Hernandez-Limon, April 2021

In early 2021, General Motors, the U.S.'s largest automaker, announced that it would only produce electric vehicles (EVs) by 2035.¹ GM's decision to fully electrify its lineup is the latest indication that the automobile market is experiencing a significant transformation, one that will see internal combustion engines replaced with electric motors and fuel tanks replaced with batteries. Municipal governments in Delaware should prepare for this eventuality by supporting EVs in their communities. This policy brief series will provide insights and recommendations for EV-ready counties, cities, and towns so local officials can begin laying the groundwork for the EV future.

MARKET GROWTH AND TRENDS

Significant technology and infrastructure improvements—from battery design to vehicle charging networks—are propelling EVs from a niche market into the mainstream. Vehicle costs are declining, ranges are increasing, charging station capacity is expanding across the U.S., and the number of commercially available models is rapidly expanding.^{2,3,4} This is leading to a record number of year-on-year EVs sales. Even in 2020 during the Coronavirus pandemic and economic downturn, Delawareans registered more EVs than in any previous year (see graph).⁵

While EVs currently account for only 2.3 percent of all passenger vehicle sales in the U.S. and 2.0 percent in Delaware, the year-on-year growth rate is upwards of 70 percent.⁶ A reasonable forecast is that EV sales will capture 30 percent of the vehicle market by 2030.⁷ Carmakers continue to electrify their models to satisfy growing consumer demand, indicating that market forces, nudged by government programs, are ushering in the EV transformation.



FEDERAL GOVERNMENT SUPPORT

Over the past decade, the federal government has created policies and programs to support EV ownership and infrastructure. The most visible and notable is a federal tax credit of up to \$7,500 for the purchase of an electric vehicle.⁸ Additional federal incentives include direct financial support to states and localities for installing charging stations, grants for local and regional transit providers to electrify fleets, technical assistance to localities for planning and installing a nation-wide vehicle charging network, and funding to research institutions for EV innovation and technology development.⁹

The Biden administration is signaling a willingness to expand federal support mechanisms to further electrify transportation. The president's infrastructure plan includes \$174 billion for tax incentives, charging infrastructure, and factory retooling.¹⁰ The Biden administration is also exploring an EV version of the "Cash for Clunkers" program that would provide cash incentives for people to trade in their gas-powered vehicle for an EV.¹¹

Given the new administration's climate change agenda, which envisions decarbonization of the transportation sector, it is reasonable to assume

federal support for EVs will be a priority. This may include higher fuel economy standards for gas- and diesel-powered vehicles, motivating automakers to further electrify their vehicle lineups.¹²



STATE GOVERNMENT INCENTIVES

In addition to the federal government incentives, the State of Delaware is offering support for the EV transition. The Department of Natural Resources and Environmental Control (DNREC) offers \$2,500 and \$1,000 rebates—in addition to the federal tax credit—for new plug-in electric and hybrid electric vehicles respectively. These rebates are paid shortly after purchase and do not need to be redeemed through tax filings like the federal government's credit.¹³ DNREC also offers rebates up to \$3,500 for the purchase and installation of workplace and public charging stations.¹⁴

On the regulatory side, the Delaware Public Service Commission approved a proposal for Delmarva Power to install charging stations in the three counties, and the Delaware Electric Cooperative and Delmarva now offer billing credits and reduced electricity rates for EV owners who charge their vehicles at home during off-peak hours.^{15, 16}

COMMUNITY BENEFITS

Local governments should not simply take an interest in EVs because of market forces in motion or policy incentives from Dover. They should seek to support EVs in their counties, cities, and towns because of the significant benefits they provide to residents, business, and visitors. Health and environmental benefits are numerous. EVs have no need for motor oil or exhaust systems, so they do not leak oil on the roads, and they have no tailpipe emissions, leading to cleaner water and air quality. If chargers replace nozzles at gas stations, this reduces the risk of leaks from underground storage tanks and the estimated 1,500 liters of gas that are spilled over a decade of filling up.¹⁷

Communities stand to benefit economically as well. EV charging increases time spent shopping in the vicinity, translating into more revenue for nearby businesses.¹⁸ Charging stations are also shown to increase the property values of the surrounding community.¹⁹

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¹ Shepardson, 2021b

² Hamilton et al., 2020

³ Sharpe & Lenton, 2021

⁴ Penny, 2021

⁵ Love, 2021

⁶ McDonald, 2020

⁷ Hamilton et al., 2020

⁸ US Department of Energy, 2021b

⁹ US Department of Energy, 2016

¹⁰ Wayland, 2021

¹¹ Baldwin, 2020

¹² Shepardson, 2021a

¹³ Department of Natural Resources and Environmental Control, 2021b

¹⁴ Department of Natural Resources and Environmental Control, 2021a

¹⁵ Delaware Electric Cooperative, 2019

¹⁶ Delmarva Power, 2021

¹⁷ Hilpert & Breyse, 2014

¹⁸ ChargePoint, 2015

¹⁹ Bedo, 2019

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For the full works cited, visit:

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