

## Opinion: Why NJ's Not Yet Ready For Roads Teeming With Electric Vehicles

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In 2020 New Jersey's Electric Vehicle Act set an ambitious goal of getting 330,000 electric vehicles on the road by 2025, a tenfold increase of the current 30,420. While electric vehicles are rightly being promoted as the "green" alternative to fossil-fueled internal combustion vehicles, they also present a set of unique challenges that our state is not fully prepared to meet. The practical and financial implications may inadvertently exacerbate many of New Jersey's wealth and socioeconomic disparities by creating winners and losers based on where you live or how much you make.

In Garden State Initiative's new report "The Road to Equitable Transportation Policy in New Jersey: An Assessment of Cost Burdens, Gaps in Mobility and Recommendations for Reform," the authors explored issues regarding the charging infrastructure, grid

capacity and electric-vehicle resale marketplace which raised significant questions that New Jersey residents should be asking our policymakers.

The development of the needed charging infrastructure and how we pay for it has thus far escaped public scrutiny. While many EV owners of means will be able to charge their vehicles at home, what about everyone else, including those without private parking?

The daunting challenge when replacing gasoline stations with EV charging stations is that there must be the same, if not more, EV charging stations for the transition to succeed. Recharging takes at least five times longer than filling up with gasoline — 30 minutes for a fast charge versus five minutes for a fuel stop — so there would have to be many more EV recharging units available than there are gasoline pumps today. Since vehicle recharging time is far longer than gassing up, stations will have to significantly expand their parking storage and queuing spaces for vehicles. This problem will be particularly acute in urban areas with limited free space for development and on the New Jersey Turnpike and Garden State Parkway since many of these travelers are on long-distance trips.

At present, there are few places to recharge outside of the New York City and Philadelphia metro areas. In large parts of New Jersey, including the Highlands and much of the coastal plain, one can drive for miles and miles without seeing an EV station at all. Even in those areas where there are stations, the numbers are insufficient for scaling up EVs in these densely populated places. Furthermore, most of the publicly accessible charging stations are located in areas that are served by mass transit —a situation that appears to not be very helpful to residents of New Jersey's many transit deserts.

### **Who will pay?**

Then there is the question of who will pay for the construction and operation of this new charging infrastructure? That question is especially acute considering the unfortunate reality that major fuel distributors are having trouble developing a model that makes economic sense in terms of EV charging facilities. They cite the cost of installing the chargers (up to \$100,000 each) as well as the impact of the installation process on their facilities.

Beyond the costs, a matter meriting significant attention but little discussed is the relationship between the state's electric-grid capacity and a scale-up toward an EV future. Fossil fuels can be shipped to stations prior to use while electricity is typically generated in real time in response to demand. While storage of gasoline and diesel is quite simple, there is little to no storage capacity on the grid for electricity.

Despite generous state subsidies, EVs are today largely the provenance of the wealthy and upper middle class along with public transit agencies with taxpayer-funded fleets. EVs are more expensive than gasoline or diesel-powered vehicles and the used vehicle market is small. Furthermore, higher-income drivers are more likely to have a location at home to recharge. Public officials should be considering how EV technology will impact

middle- and working-class families in New Jersey. Working-class households typically have a vehicle for basic transportation needs, and this vehicle is likely much older and require maintenance.

When we consider how EVs will transfer from their initial owners via the resale or used car market that many working-class households depend on, one must consider how vehicles age. Traditional fossil- fueled vehicles can often be maintained and have their useful lives extended through relatively affordable and simple repairs, sometimes done by the owner. While EVs are touted as having minimal maintenance needs due to their simple mechanicals, they do have a few weaknesses to consider. The key one is battery life. Batteries in EVs typically are rated with an eight- to 10-year lifespan and/or approximately a 200,000 mile lifespan. Once the battery fails it can cost between \$6,000 and \$10,000 for a replacement, a price that very well may exceed the cost of the vehicle. This begs the question of how good and reliable EVs will get to working class households without a reliable used car market, and how a significant number of New Jerseyans will be able to shoulder the significant cost of battery failure.

While none of these challenges is insurmountable, our state's policymakers must adopt a clear-eyed view and realistic policies in our move toward a "green" future. To that end, the report recommends several policy steps should be implemented. The state Clean Energy Program, funded by a surcharge on utility bills, will be needed to fund subsidies and investment and should no longer be raided to fill budget holes. In light of the infrastructure challenges we outlined, it is likely that the traditional combustible engine will continue to be used into the near future, and well-established engine/battery hybrids will see us through a long period of transition. Policymakers must acknowledge that reality and hedge their bets on what technology will win the future — battery charges or hydrogen fill-ups.