ACCELERATING OUR TRANSITION TO ELECTRIC CARS

Shakaya Cooper // Generation180 // shakaya@generation180.org
Garrett Gee // Southern Environmental Law Center // ggee@selc.org
Victoria Higgins // Chesapeake Climate Action Network // vhiggins@chesapeakeclimate.org
Lena Lewis // The Nature Conservancy // lena.lewis@tnc.org

WHY IT MATTERS

To effectively fight climate change, we must tackle the largest source of carbon pollution in Virginia: transportation.[1] Virginians' personal vehicles collectively emit more carbon pollution than our power plants.[2] Vehicles are also major sources of harmful tailpipe pollution that has been linked to respiratory and heart diseases and premature death.[3,4] Diesel trucks are especially harmful, with pollution from freight disproportionately impacting communities of color and low-income communities.[5] Students suffer exposure to these pollutants daily on Virginia's diesel school buses.

While the most important strategy to reduce pollution from vehicles is to help reduce driving overall, we must also rapidly transition our remaining driving to electric vehicles (EVs), which have zero harmful tailpipe emissions. Electricity to power an EV emits less than one-sixth of the carbon pollution of an equivalent gas-powered vehicle, and will emit even less over time as Virginia's electrical grid becomes cleaner.[6]

Cleaner vehicles will also save Virginians money. EVs require significantly less maintenance than gas cars.[7] EV drivers typically spend the equivalent of $1.28 per gallon for a full charge in Virginia.[8] Owning an EV will save an average driver $6,000 to $12,000 over the lifetime of the vehicle.[9]

However, the benefits of EVs are not equally accessible to all drivers in Virginia. More affordable models of EVs are not always available at local dealerships. People living in rural areas, multi-unit housing, and rental properties often have limited charging options. Public EV charging infrastructure, which has grown dramatically in the past few years, still has gaps that the free market has been slow to fill, and the federal government is pulling back historic investments to support EVs and expand the public charging network. This highlights the need for state-level leadership to maintain progress and protect access to clean transportation.

CURRENT LANDSCAPE

In 2021, the General Assembly adopted the Clean Car Standards, which requires the Commonwealth to implement standards that would bring more affordable electric vehicles to Virginia and improve public health by reducing tailpipe pollution. Despite this legislative mandate, the Governor announced his administration would stop implementing the Clean Car Standards at the end of 2024.[10] Regardless of its implementation status, there are other steps Virginia can take to accelerate transportation electrification.

A comprehensive, statewide public charging network is necessary to make EVs work for every driver and every trip by supporting longer journeys. Today, rural and exurban areas have fewer convenient public charging options than urban areas and along major highways. Additionally, single-family homeowners can more easily install EV charging infrastructure and take advantage of residential utility rates, whereas people who live in apartments, townhomes, and buildings without dedicated parking may not have a convenient and cost-effective option to charge their EVs.

Utilities are also key to making EV charging more convenient and affordable. Electricity use patterns will change as home charging and public charging become more common, and anticipating the change in patterns is essential to the opportunity that EVs provide to the grid. With the right policies in place, Virginia can meet its energy needs, transition quickly to EVs, and even reduce the electricity rates that all customers pay, including under rapid adoption scenarios. [11]

OPPORTUNITIES

The market is shifting towards EVs, but our climate and our health require a more rapid transition. A suite of policies, in addition to the Clean Car Standards, could both bring more affordable EVs to Virginia and make it more convenient to charge them at home and across the state while supporting the electric grid.

Proactively planning for EV adoption and policies that encourage EV adoption can reduce the utility costs of preparing the grid for EVs. Demand-side management strategies like EV rate designs, managed charging, and vehicle-to-grid integration can help to manage the impact of EVs on the grid and even improve grid stability.[12] However, these benefits will only be realized with proactive and comprehensive planning.

Another significant barrier to EV adoption is equitable access to charging infrastructure, both in urban and rural areas. Policies could support the installation of EV charging stations or EV-ready parking spaces at workplaces or multi-unit dwellings like apartment complexes, where residents currently have limited ability or incentive to install their charging infrastructure.[13] This could be complemented by a buildout of public charging with a focus on rural and underserved areas. New single-family homes could be required to have electric panels with enough capacity to support adding an EV charger.

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Some of the most significant benefits of EVs come from transitioning major fleets to zero-emissions. Nearly one million Virginia students are transported daily on the Commonwealth's 16,000 school buses.[14] Phasing out fossil fuel school buses will help protect Virginia students from asthma and other respiratory illnesses. Approximately 3% of Virginia's school buses are electric (or planned to transition to electric).[15] Fully implementing the 2022 total cost of ownership law, which requires state agencies to consider the full lifetime cost of vehicles when making fleet purchases, could gradually replace state-owned gas-powered cars with EVs while saving taxpayer dollars.

TOP TAKEAWAYS

Virginians' personal vehicles collectively emit more carbon pollution than our power plants and are a major source of harmful pollutants. Accelerating the transition to electric vehicles, including maintenance of the Clean Cars Standard, will reduce carbon emissions and improve public health.

A comprehensive statewide charging network and access to convenient charging for multi-unit residents would deliver the economic benefits of EVs more equitably across Virginia.

Utilities are key players in the EV transition, and proactive planning could help to achieve electrification in a manner that is beneficial for both utilities and ratepayers.

ENDNOTES

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