ACCELERATING TRANSPORTATION ELECTRIFICATION

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WHY IT MATTERS

We cannot effectively fight climate change without tackling the largest source of carbon dioxide 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 like sulfur and nitrogen oxides, carbon monoxide, and particulates, which have been linked to respiratory and heart diseases and premature death.[3,4] Diesel trucks are especially harmful; pollution from freight disproportionately impacts communities of color and low-income communities.[5] Students suffer exposure to these pollutants on Virginia's diesel school buses.

The most important strategy to reduce traffic pollution is to help people become less dependent on cars (see page 81). We must also rapidly transition to electric vehicles (EVs) which have zero harmful tailpipe emissions.[6] 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 the power sector becomes cleaner.[7]

Cleaner vehicles will save Virginians money. EVs require significantly less maintenance than gas cars.[8] EV drivers typically spend the equivalent of $1.28 per gallon for a full charge in Virginia.[9] Owning an EV will save an average driver $6,000 to $12,000 over the lifetime of the vehicle.[10]

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. For all these reasons, policymakers have an essential role to play in supporting the equitable transition to electric transportation.

CURRENT LANDSCAPE

The 2021 Clean Cars Standards represent the most significant step Virginia has taken to cut carbon emissions and tailpipe pollution, which will have significant public health and environmental benefits.[11] These standards ensure that Virginians have access to an increasing number of both cleaner gas-powered vehicles and zero-emission vehicles in the Commonwealth. The Governor announced that he plans to unilaterally–and illegally–withdraw Virginia from Clean Cars Standards at the end of 2024. If the Governor succeeds, Virginia will revert to less protective federal emission standards in 2025, forgoing the many benefits of Clean Cars Standards.[12]

Contrary to misinformation, the standards do not ban gas-powered cars.[13] Rather, they provide new car buyers with more choices, since automakers prioritize sending EV models to states with Clean Cars Standards.[14] Before the standards took effect, one-third of registered EVs in Virginia were purchased out of state.[15]

While most EV drivers typically charge at home, a comprehensive, statewide public charging system is critical. Virginia received $106M through the Infrastructure Investment and Jobs Act (IIJA) to ensure fast chargers are available every 50 miles along major highway corridors.[16] However, there continue to be major gaps in the public charging network, particularly in rural and ex-urban areas.

An additional barrier to adoption is up-front costs. While EVs are now close in cost to traditional cars and much cheaper over the lifetime of a vehicle, polling indicates lowering the up-front cost would significantly encourage EV adoption.[17] In 2021, the General Assembly passed a rebate to do just that, with significant investments targeted at low-income communities; however, the rebate has repeatedly gone unfunded.

Nearly one million Virginia students are transported daily on the Commonwealth's 16,000 school buses.[18] Phasing out fossil fuel school buses will help protect Virginia students, reducing asthma and other respiratory illnesses. Currently, less than 2% of Virginia's school buses are electric.[19] Virginia needs supportive state policy to leverage billions in time-limited federal funding for clean school buses.

OPPORTUNITIES

While the market is shifting towards bringing more electric vehicles into the market, a suite of complementary policies is needed to support a rapid and equitable transition to electric transportation. The Clean Car Standards are one of the most successful Clean Cars laws.

Many states that have adopted Clean Cars have funded state rebates or tax credits, as well as non-participating states like Kansas and Nebraska.[20] Funding programs such as these have been shown to increase EV adoption. Virginia's existing rebate, which provides $2500 off the up-front price of a vehicle or up to $4000 for low-income qualified households, remains unfunded.

Another significant barrier to EV adoption is equita-

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ble access to charging infrastructure–both in urban and rural areas. Because most people charge their cars at home, Virginia should develop a plan for the installation of EV charging stations or EV-ready parking spaces at multi-unit dwellings like apartment complexes, where residents currently have little authority to install their charging infrastructure. This should be complemented by a statewide buildout of public charging infrastructure in the numerous areas of the Commonwealth not eligible for funding through the National Electric Vehicle Infrastructure program.

A sustainable, consistent source of state funding for electric school buses would complement federal funding programs and provide the resources school districts need to transition to zero-emissions bus fleets.

Critics often cite threats to grid reliability as reasons to stymie transportation electrification. But even under rapid adoption scenarios, EV electricity demand can be managed without harm to grid reliability or operations. Proactive planning and smart policies, like time-of-use rates and vehicle-to-grid technology, can make the transition more efficient and reduce electricity rates for everyone.[21]

TOP TAKEAWAYS

Virginians' personal vehicles collectively emit more carbon pollution than our power plants and are also a major source of harmful pollutants such as sulfur and nitrogen oxides, carbon monoxide, and particulates.

The 2021 Clean Cars Standards represent the most significant step Virginia has taken to cut carbon emissions and tailpipe pollution. These standards ensure Virginians have access to an increasing number of both cleaner gas-powered vehicles and zero-emission vehicles.

A suite of complementary policies necessary to support a rapid and equitable transition to electric transportation includes the Clean Car Standards, support for public charging infrastructure, funding of the EV rebate program, and planning for grid improvements.

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