

Advancing Clean Vehicles in Virginia



Why Virginia needs clean vehicles

Clean vehicles are better for our environment, our health, and our economy, and also provide savings for consumers.¹ Reducing tailpipe pollution from cars and trucks and bringing clean vehicles to Virginia more rapidly will:

COMBAT CLIMATE CHANGE

Transportation is the largest source of climate pollution in Virginia — producing over a third of our greenhouse gas (GHG) emissions, and over 80 percent of those emissions come from on-road and non-road vehicles, primarily cars and trucks.² Electricity to power an electric vehicle (EV) — the most common zero-emission vehicle today — in Virginia emits less than 16 percent of the carbon pollution of an equivalent gas car.³ Our power sources will only get cleaner over time due to the expansion of renewable power generation under the Virginia Clean Economy Act and other measures.

IMPROVE PUBLIC HEALTH AND EQUITY

Cars and trucks are also a significant source of other harmful pollution, like particulate matter, sulfur oxides, nitrogen oxides, carbon monoxide, ozone, and air toxics.⁴ Widespread transition to EVs, coupled with clean energy generation, could yield more than \$25.4 billion in health benefits and avoid approximately 2,320 premature deaths, 60,600 asthma attacks, and 299,000 lost workdays in Virginia by 2050.⁵ And transportation pollution disproportionately harms low-wealth communities and communities of color.⁶

SAVE DRIVERS MONEY AND EXPAND CONSUMER CHOICE

A greater variety of EV options are available than ever before, and there are several new models on the market for less than \$30,000.⁷ Owning an EV can save drivers \$6,000 to \$12,000 over the life of a vehicle compared to a fossil fuel-powered car due to reduced maintenance and fuel costs.⁸ Virginia EV drivers



typically spend the equivalent of \$1.28 per gallon for a full charge,⁹ and most EVs can be driven 200 to 500 miles before they need to be recharged.¹⁰

BENEFIT THE ELECTRICAL GRID AND REDUCE OVERALL RATES

According to a report from the State Corporation Commission, if utilities adopt policies like managed charging, widespread EV adoption could put downward pressure on electricity rates and lead to savings for all ratepayers, whether they drive an EV or not.¹¹ As EV adoption increases, smart charging practices can help improve grid reliability and efficiency and shave peak electricity demand.¹²

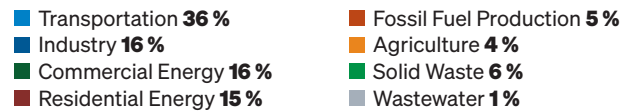
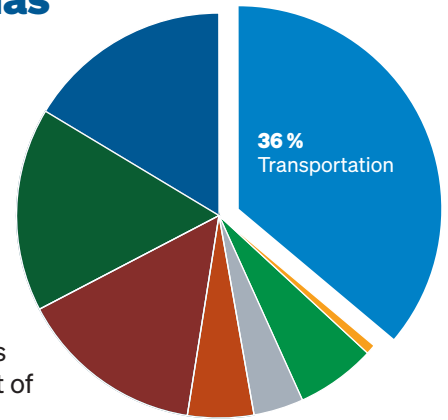
BENEFIT THE ECONOMY

EVs also keep more money in Virginia's economy, since they are powered by Virginia's electrical grid rather than out-of-state oil companies. Earlier estimates showed that a faster transition to EVs in Virginia, driven by the Clean Cars standards, could lead to tens of thousands of new jobs¹³ and result in hundreds of millions of dollars in total net benefits.¹⁴



Greenhouse Gas Emissions

According to the most recent data available from the Virginia Department of Environmental Quality, transportation is the largest source of climate pollution in Virginia. Cars and trucks are responsible for most of those emissions.



How to bring more clean vehicles to Virginia

Although sales of cleaner vehicles have been increasing in Virginia, more is needed to bring these vehicles — and their benefits — to Virginia sooner. Because of expected rollbacks to federal tailpipe emissions and fuel economy standards, as well as uncertainty associated with federal incentives and infrastructure funding, Virginia needs to utilize its own laws and policies to accelerate the adoption of clean vehicles in the Commonwealth.

IMPLEMENT THE CLEAN CARS STATUTE

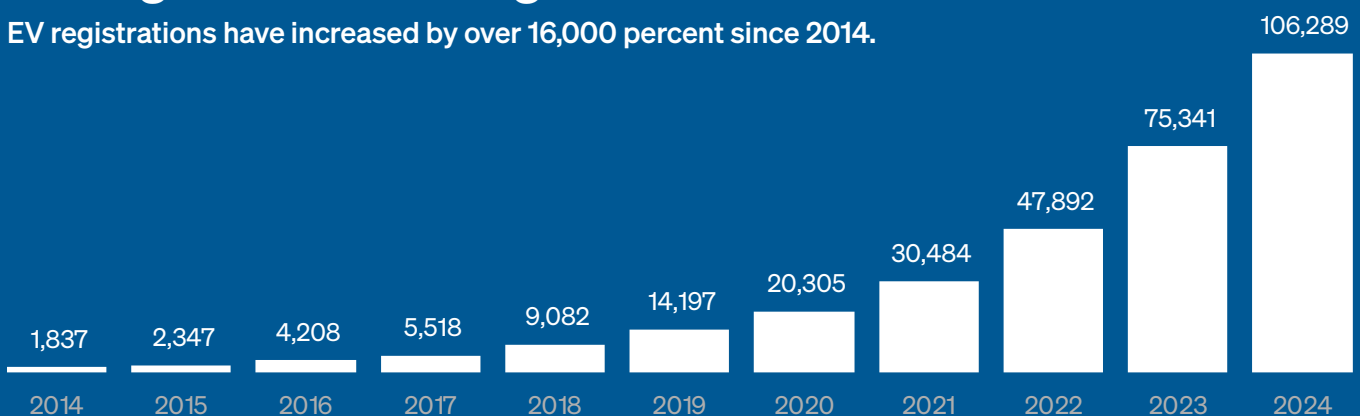
Virginia enacted a landmark law in 2021 that required the Commonwealth to adopt and implement the Clean Cars Standards.¹⁵ The standards — which only apply to

vehicle manufacturers, not auto dealers or individuals, and which only apply to new sales of passenger cars and light-duty trucks — limit the average emissions from all passenger cars and light-duty trucks. They require less-polluting fossil fuel vehicles, as well as a certain percentage of zero-emission vehicles like EVs, to be delivered for sale in Virginia.

Although attempts at the federal level to block these commonsense measures have created uncertainty, Virginia must ensure it is ready to implement the standards — as required by state law — once any roadblocks are cleared. Any attempt to roll back the Clean Cars Standards or repeal the Clean Cars statute should be rejected.

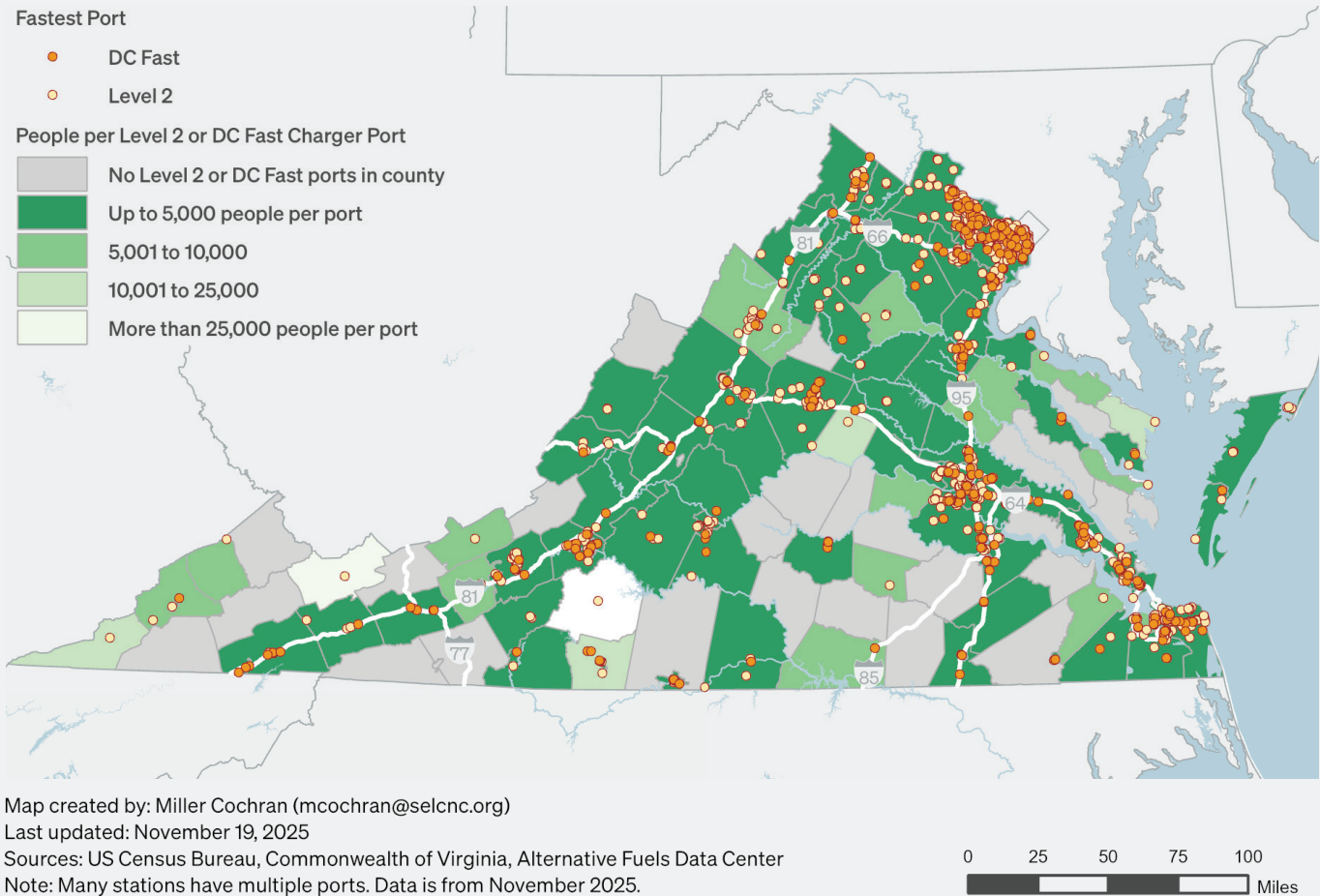
EV Registrations in Virginia

EV registrations have increased by over 16,000 percent since 2014.



EV Charging Stations in Virginia

Public charging station location, speed, and port density per person, by locality



EXPAND EV CHARGING INFRASTRUCTURE

To meet the growing demand for EVs, charging stations are being deployed rapidly across the Commonwealth. As of October 2025, there were more than 1,800 public charging station locations and more than 5,000 charging ports statewide.¹⁶ Both state and local policies and investments are needed to continue to expand access to EV charging, help fill gaps in the market, and make the EV charging experience as convenient as possible.

Residential and workplace charging

Charging at home is typically the easiest and most affordable option for drivers, but a lack of home charging infrastructure remains a significant barrier to EV adoption — especially for people who live in multifamily homes like apartments and condos. To address this and avoid the need for costly retrofits, new homes should be built with EV charging in mind.

Installing EV chargers during construction, or at least the necessary electrical infrastructure to allow future charger installation, can provide significant savings to both homeowners and renters over the long term.¹⁷

While Virginia has enacted some policies to address this barrier, including a 2020 law that clarifies the right to install a charger in multifamily buildings,¹⁸ more steps are needed at the state and local level to make it easier for all residents to charge at home. The General Assembly should give localities the authority to set EV readiness standards for multifamily dwellings, which would address a key barrier to owning an EV for residents as multifamily housing is built or renovated. For both single and multifamily homes, Virginia also should adopt standards on EV readiness from the International Energy Conservation Code Council in the next update of the state building code.¹⁹

Localities also can encourage convenient charging at workplaces and other commercial developments through their zoning codes, by improving permitting processes, and by taking other steps to encourage installation of charging at these locations.

Public charging

A comprehensive public charging network is critical to provide options for those who cannot charge at home, and to address range anxiety for longer-distance trips. Over the past few years, public charging has expanded rapidly throughout Virginia, and the state is working to allocate over \$100 million in federal funding to build public fast charging stations along our major highways.²⁰ However, the state and local governments need to fill gaps in this planned network, especially in rural and low-wealth areas where federal funding will not reach and where the private market is less likely to step in. State funding for these so called “charging deserts” can help ensure that all Virginians can take advantage of the cost savings and other benefits of going electric.

SHIFT PUBLIC FLEETS TO CLEAN VEHICLES

As noted above, it is typically cheaper to own and operate EVs over the life of the vehicle, even if the upfront purchase price may be higher. Electrifying vehicle fleets is a major opportunity to reduce vehicle pollution since fleet vehicles typically rack up more miles in a year than personal vehicles.²¹ As a result, there is more “bang for the buck” in electrifying fleet vehicles.

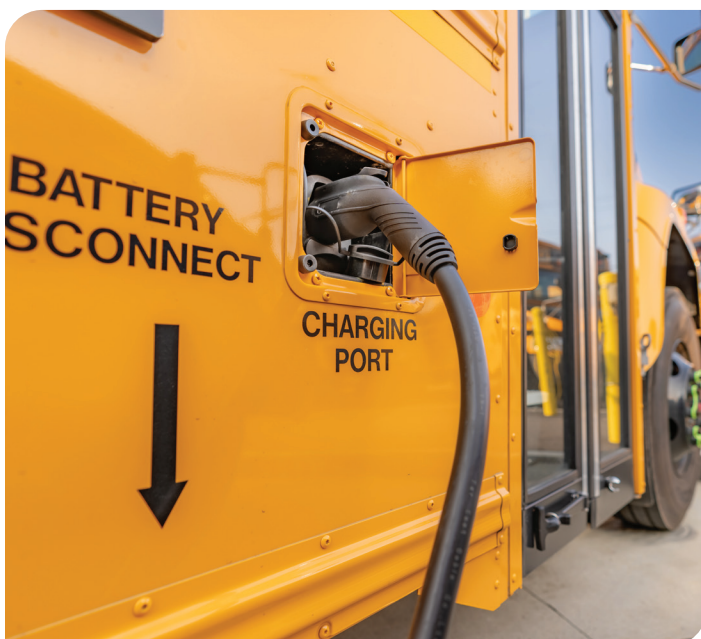
Public sector fleets at both the state and local level present a particularly important opportunity for electrification. In Virginia, there are more than 145,000 publicly owned motor vehicles, including cars, trucks, buses, and vocational vehicles.²² Electrifying transit buses and school buses would significantly reduce tailpipe pollution and improve public health. Replacing the oldest diesel buses with clean, electric buses would provide outsized benefits, not only by reducing GHG emissions but also by curtailing dangerous air pollution like fine particulates and nitrogen oxide.²³

Virginia can take numerous steps to spur the transition of public fleets to clean vehicles. Purchase incentives can bring down the upfront costs, helping to tip the scales in favor of cleaner options that cost less to operate over the life of the vehicle. And while the federal government is scaling back some programs and funding for electrification, there are still opportunities to use federal funding to purchase cleaner vehicles and charging infrastructure. Virginia also should take steps to fully implement the existing state law that requires the state government to accurately calculate the total cost of ownership when making vehicle purchase decisions.²⁴

FUND EV PURCHASE INCENTIVES

Although prices are coming more in line with comparable fossil fuel-powered vehicles, the higher upfront cost of EVs remains a barrier for many drivers. Congress recently repealed federal tax incentives that aimed to close this gap, leaving room for action at the state level. In 2021, the General Assembly adopted — but has not yet funded — one of the most comprehensive and thoughtful EV purchase incentive statutes in the country. Funding for EV rebates, especially for used vehicles and lower-income drivers, would make EVs more affordable and accessible.

In addition, rebates or vouchers for privately owned fleet vehicles, especially medium- and heavy-duty vehicles like trucks, would allow operators to reap the cost savings and the public to enjoy the environmental benefits of EVs sooner. State and local governments also should consider funding rebates for other, lower cost transportation options like electric bicycles for people who may not be able to afford or want to purchase a car.





How to maximize the energy benefits of clean vehicles

Virginia's electricity grid is under increasing strain, especially with rapidly increasing energy demand from data centers and other large industrial customers.²⁵ While the transition to EVs will require more electricity to power these vehicles, the amount of additional demand is comparably small and transportation electrification has the potential to provide significant benefits to all utility customers and to utilities.²⁶ This is because EVs drive greater overall utilization of the electric grid, increasing total utility revenues and more than offsetting increased infrastructure costs.²⁷ By making more efficient use of existing grid assets, EVs should lead to lower costs for all customers.²⁸ As EV adoption increases, potential grid benefits stand to increase as well.

RECOGNIZE THAT EV ENERGY DEMANDS ARE DWARFED BY DATA CENTERS

Concerns about the increased energy needed to charge the growing number of EVs are overblown. Energy use associated with EV charging has been projected to account for between 6 to 9 percent of total electricity demand in Virginia by 2040.²⁹ By comparison, the explosive growth of data centers has led to that industry consuming roughly 27 percent of Dominion's electricity today,³⁰ with projected data center electricity sales growing to 51 percent by 2035.³¹ Although there are reasons to believe Dominion's projections of data center growth may be overstated,³² there is no question that EV-related energy demand will be only a small fraction of the energy needed for data centers.

PROMOTE UTILITY EV POLICIES THAT BENEFIT THE ELECTRICAL GRID

The transition to EVs will undoubtedly require more energy and additional investments in the electrical grid, but with smart policies in place, widespread EV adoption can help put downward pressure on electricity rates overall. Effective and proactive transportation electrification planning is essential to get these policies right and to maximize the grid benefits of EVs. While the State Corporation Commission has required the Commonwealth's two largest utilities to prepare plans for EV adoption, the General Assembly should provide additional direction to the Commission to ensure that Virginia's utilities are taking the steps necessary to accommodate — and accelerate — the growth of EVs. Key examples of proactive policies that can maximize the grid benefits of EVs include managed charging programs, time-of-use rates, and in the not-too-distant future, vehicle to grid integration.

Managed EV charging and time-of-use rates

Utilities across the country utilize time-of-use rates and, increasingly, managed charging to encourage EV drivers to charge their vehicles when electricity demand is lowest or when excess renewable energy is available.³³ This improves grid utilization and allows utilities to more than recoup the cost of any grid upgrades needed to power those EVs by selling electricity that would otherwise go unused.³⁴ Time-of-use rates encourage EV drivers to charge at off-peak times by offering a reduced price for energy during specified periods.³⁵ Utilities can also “manage” EV charging events by incentivizing customers to charge within a specific window of time, or by directly curtailing charging during times of higher grid demands.³⁶ If properly designed, time-of-use rates and managed charging programs can work together to maximize benefits to the grid while reducing charging costs for EV drivers.

Vehicle to grid technology

The potential grid benefits of EVs are not limited to avoiding charging at peak times or utilizing excess energy when it is available. Increasingly, EVs will be able to power homes directly when the grid is under strain and even provide power back to the grid.³⁷ Newer EVs already have bidirectional charging technology that allows them to discharge



their batteries and provide a local battery backup for the home (“vehicle to home”) or devices (“vehicle to load”).³⁸ Utilities also are experimenting with “vehicle to grid” operations, with the eventual goal of EVs acting as a “virtual power plant” to feed power back to the grid when it is needed most.³⁹ As more EVs are purchased, the size of these virtual power plants and the potential grid benefits they can provide will only increase.

Keys to advancing clean vehicles in Virginia

Accelerating clean vehicle adoption will deliver significant environmental, public health, and economic benefits to the Commonwealth. By curbing tailpipe pollution, we can create a cleaner and more efficient transportation system for everyone. Action is needed at every level of government to accelerate the shift to clean vehicles. Key steps Virginia can take include:

- Retaining the Clean Cars statute and implementing the Clean Cars Standards to bring more low- and zero-emission vehicles to Virginia;
- Expanding EV charging by making homes and multifamily developments EV ready, changing local policies to make it easier to build EV charging, and supporting public EV charging in rural and low-wealth areas;
- Transitioning public fleets to EVs;
- Funding EV purchase incentives; and
- Adopting smart utility policies to maximize the energy benefits of EVs.



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