



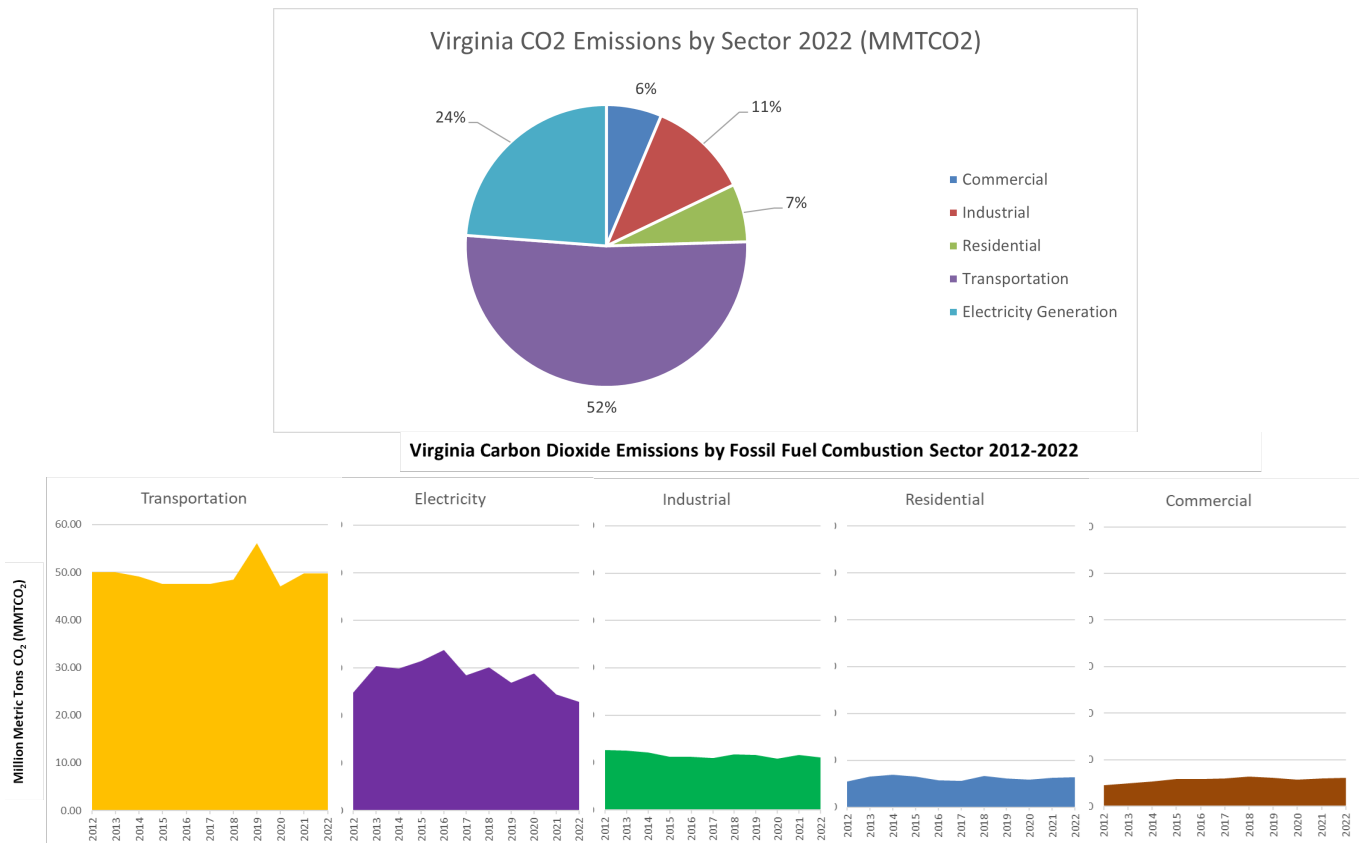
VIRGINIA
Energy

Virginia Alternative Transportation Fuels Report 2024

Prepared by Virginia Clean Cities (VCC) for Virginia Energy on June 5, 2025

Transportation forms an integral part of Virginia's economy and environment and the transportation sector is the largest end-use energy-consuming sector in the Commonwealth according to the U.S. Department of Energy, Energy Information Administration (EIA) and the U.S. Environmental Protection Agency.

VCC connects with voluntary fleet leaders, biofuel producers, and station operators to present this status of fleets, fuel production, and stations in the transition to cleaner, domestic and/or renewable fuels. Data was collected by VCC staff through infrastructure development, emails and phone from January 1, 2024 to December 20, 2024.



Front page information are the most recent available info from Energy Information Administration [eia.gov](https://www.eia.gov)

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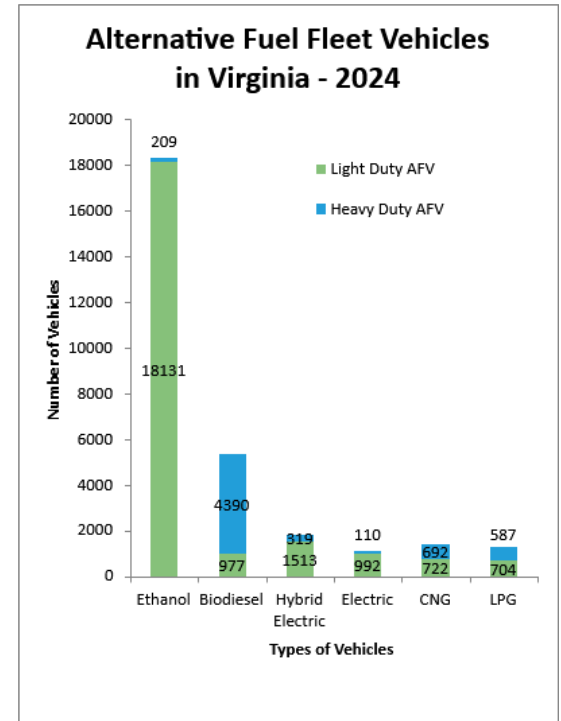
SECTION I: ALTERNATIVE FUEL FLEET VEHICLES SUMMARY

As of December 31, 2024, there were 29,346 alternative fuel vehicles in service across 150 green fleets in Virginia. Largest sector gains in hybrid-electric (HEV) saw a +16.8 rise and electric (ELEC) saw a growth rate of +13% across the Commonwealth. Biodiesel reporting made moderate gains. Liquid petroleum gas (LPG) made moderate gains. Compressed natural gas (CNG) reporting declined at 1.1%. Ethanol E85 saw a decrease of 1%. Some CNG fleets reported difficulty refueling offsite and increased regional travel duty cycle. The vehicles include business and local, state, and federal government fleets.

Table 1-1. Alternative Fuel Fleet Vehicles: 2024

Figure 1-1. Alternative Fuel Fleet Vehicles: 2024

Fuel Type	CNG	E85	HEV	ELEC	BD	LPG	AFV Total
2023 Total	1430	18527	1569	968	5144	1183	28821
2024 Total	1414	18340	1832	1102	5367	1291	29346
1-Year Difference	-16	-187	263	134	223	108	525
% Growth	-1.1%	-1.0%	16.8%	13.8%	4.3%	9.1%	1.8%



SECTION II: RENEWABLE BIOFUEL

Virginia is host to a rich agricultural economy, numerous corporations and entrepreneurs exploring biofuels from plant or recycled materials as a replacement for or mixture with traditional transportation fuels of gasoline or diesel or as a biogas replacement for natural gas. In the year 2024, local biofuel producers reported further shift to brokerage sale of high-value used cooking oil feedstock to emerging renewable diesel producers outside of Virginia. Approximately one million gallons of biodiesel was produced at a single biofuel facility in 2024. 2024 brought forward renewable natural gas production. In future years, availability and contract accessibility to renewable natural gas is likely to increase as innovative production from captured methane in Virginia increases. Renewable natural gas is a resource generated from landfill, wastewater, and agricultural sources where methane is captured for reuse.

SECTION III: ALTERNATIVE FUEL STATION SUMMARY

The total number of alternative fuel station locations reported for the Commonwealth of Virginia in 2024 is 2,043. Of those stations, many are private access stations such as individual fleet facilities. Overall, the total number of alternative fuel stations in Virginia has continued to increase as alternative fuel use continues to expand, as seen in Figure 3-2. 2024 Growth was driven by the increase in electric vehicle charging stations. There were changes in tracking for private fleet and biofuel stations in 2024, resulting in significant data changes for Biodiesel and LPG stations which were not public.

Figure 3-1. Alternative Fuel Stations in Virginia

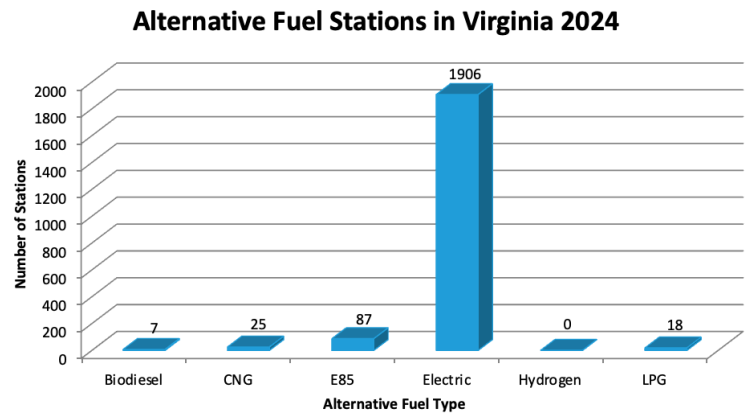
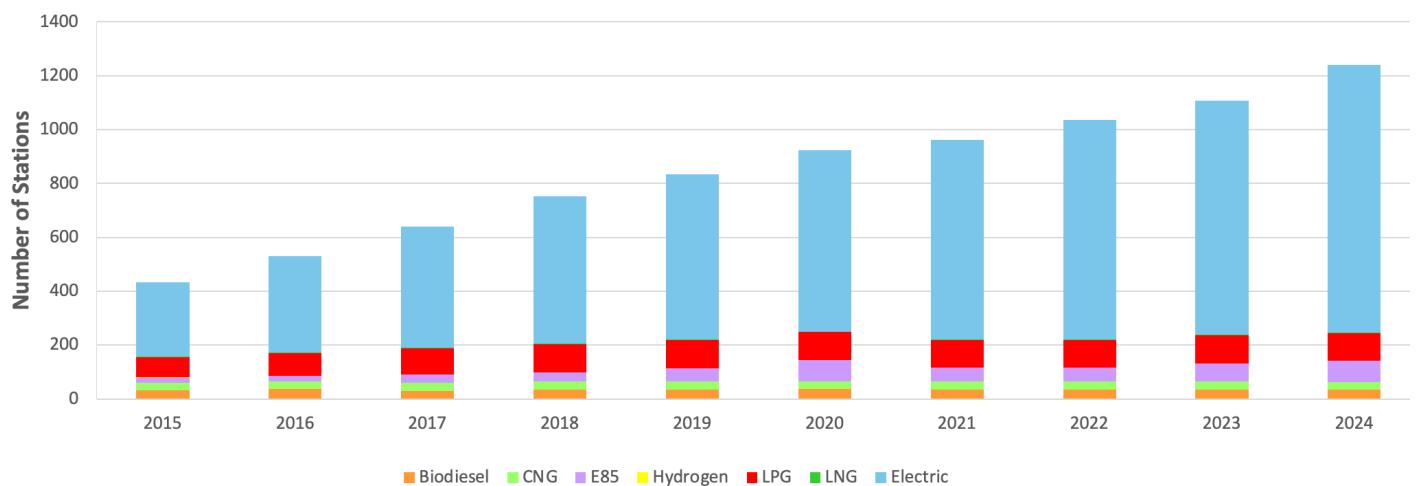


Table 3-1. Alternative Fuel Stations Growth in Virginia

Year	B5-B20	CNG	E85	EV	H2	LPG	LNG	Total
2023	35	28	78	994	0	103	2	1,240
2024	7	25	87	1046	0	103	2	2,043

Figure 3-2. Growth Total of Virginia Alternative Fuel Stations by Fuel Type

10 Year Growth in Virginia Alternative Fuel Stations by Fuel Type: 2024



SECTION IV: ALTERNATIVE FUEL STATION LOCATIONS

Clean fuel infrastructure is tracked with continual updates from the Clean Cities partnership at the U.S. Department of Energy and maps are presented below. This map reflects planned and current stations that are both public and private. This map shows only stations with biodiesel blends with at least 20% biodiesel. This interactive mapping tool is hosted by the U.S. Department of Energy and can be found at the alternative fuel data center and at afdc.energy.gov/stations# with data submitted throughout the year by VCC and stations contacted every year by federal technical response team. Electric vehicle data is interpreted at atlaspolicy.com/evaluateva for port types and transparency layer.

Figure 4-1. Biodiesel (B20) and Ethanol (E85) Stations

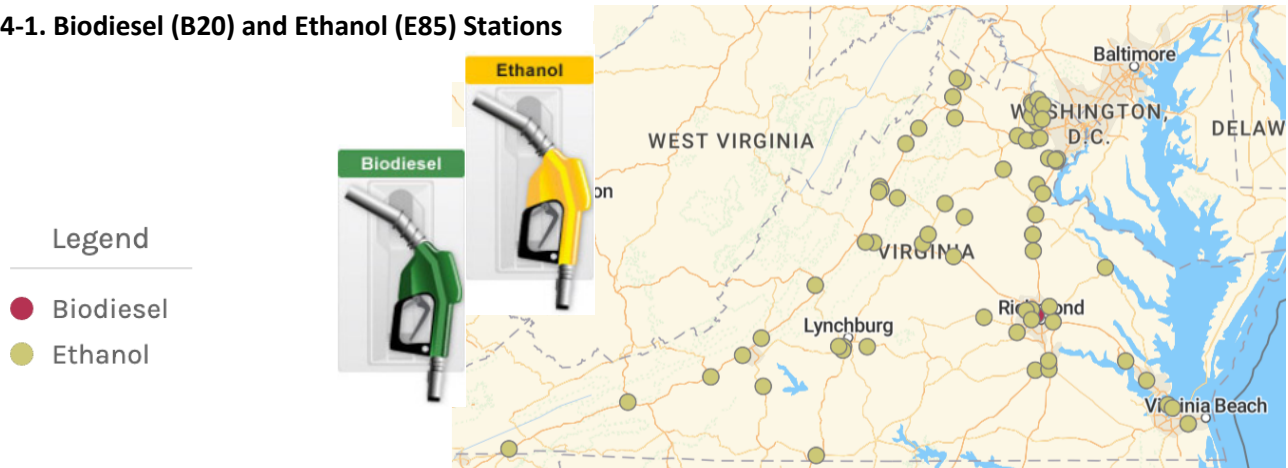


Figure 4-2. Electric Fueling Stations

Charging Level ● Level 2 Ports ● DC Fast Charge Ports

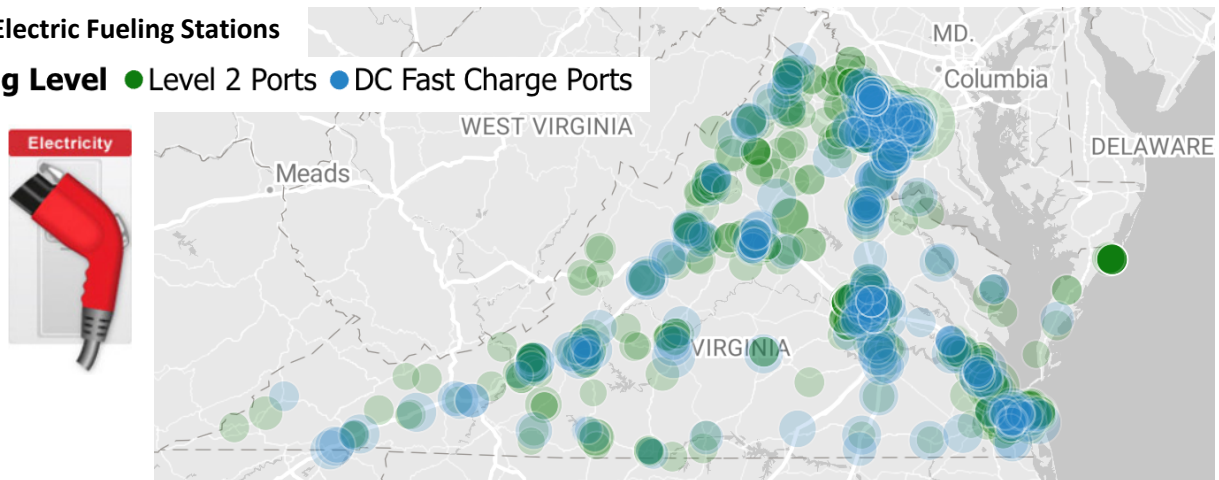
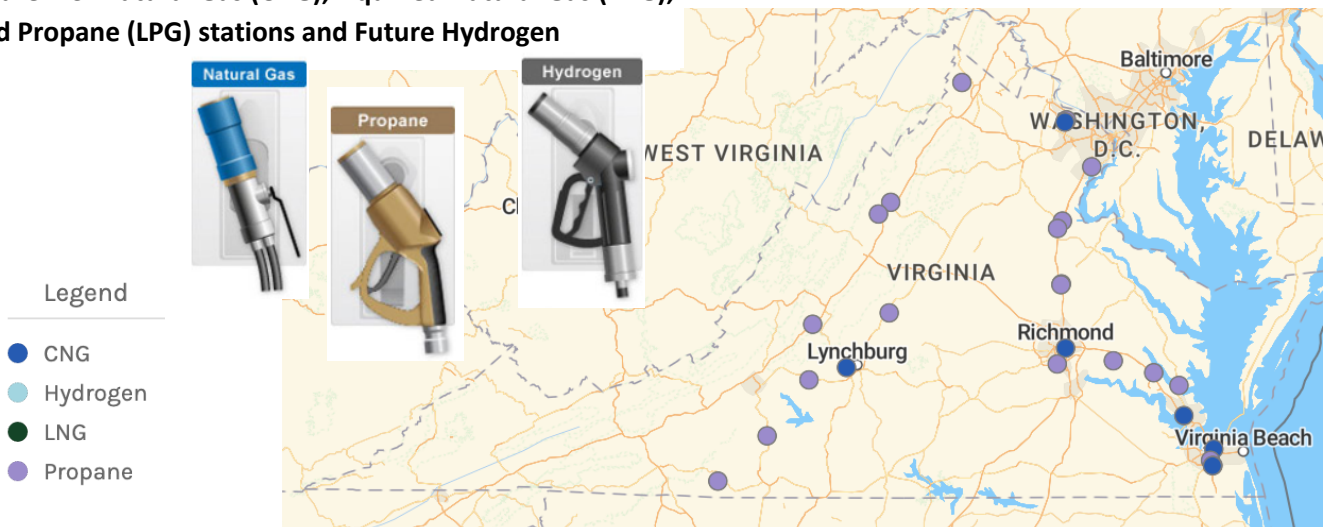


Figure 4-3. Natural Gas (CNG), Liquefied Natural Gas (LNG), and Propane (LPG) stations and Future Hydrogen



SECTION V: ALTERNATIVE FUEL CORRIDORS

In 2016, the Department of Transportation and the Federal Highway Administration (FHWA) announced their designated Alternative Fuel Corridors under the Fixing America's Surface Transportation (FAST) Act. The cumulative designations (Rounds 1-5) for propane, electric and compressed natural gas in Virginia are submitted by Virginia Energy and detailed in the maps below. The green lines indicate signage ready corridors which are corridors that have sufficient alternative fuel facilities to warrant highway signage. Hydrogen, Propane, and CNG corridors will be for fleet and heavy duty use not for consumer sized vehicles. https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/

Figure 5-1. Electric Vehicle Charging Station READY Corridors Light Duty



Figure 5-2. 2024 Hydrogen Corridors

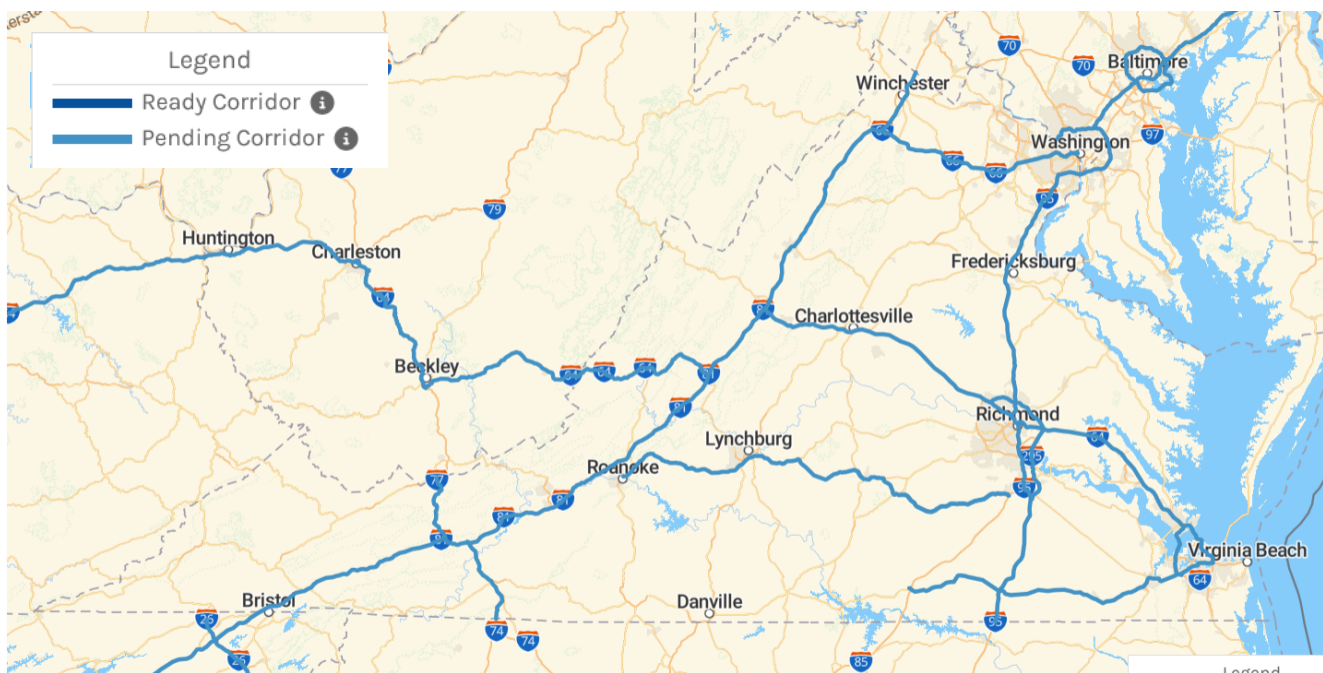
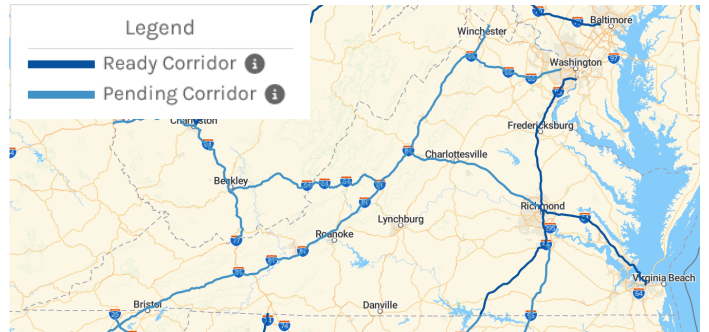


Figure 5-3. Propane Fueling Station READY Corridors



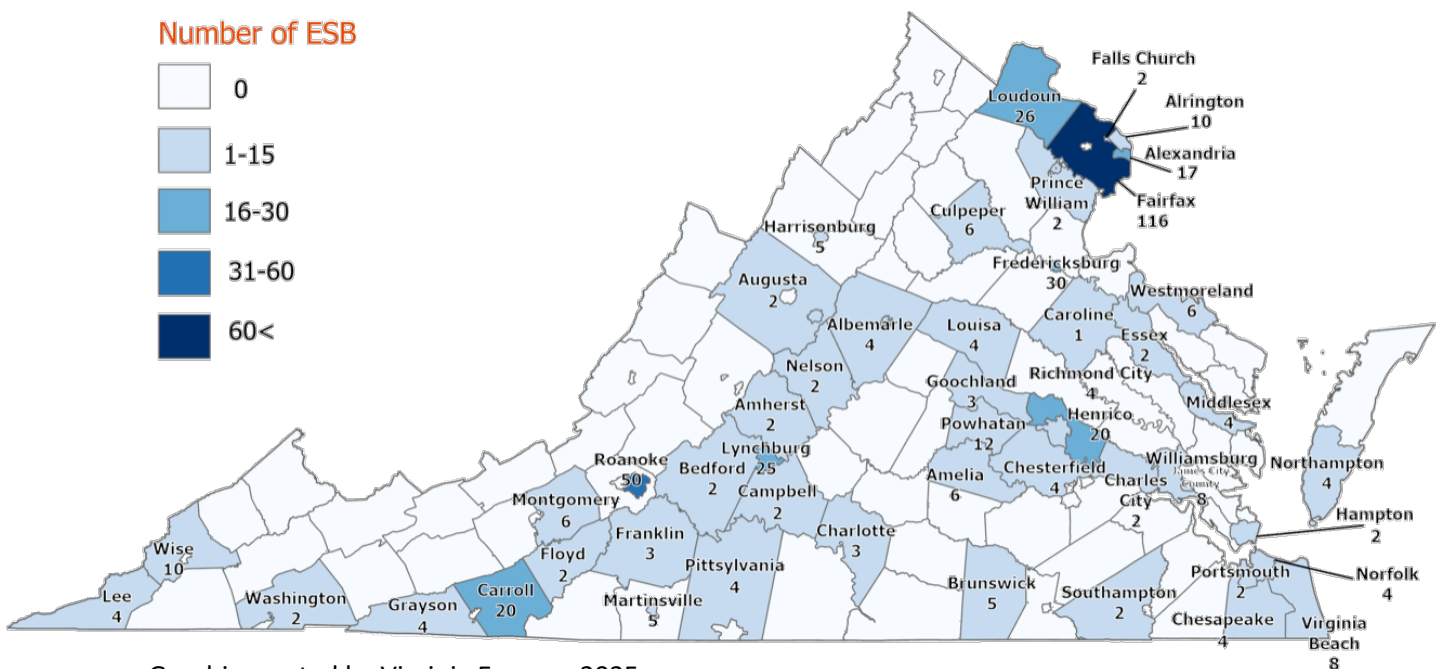
Figure 5-4. Natural Gas Fueling Station READY Corridors



SECTION VI: SCHOOL BUS ELECTRIFICATION

School bus electrification has been a major focus of utility, state, and federal spending in recent periods with Virginia school districts selected repeatedly for major federal awards. By the end of 2024 school districts are actively deploying 489 electric school buses in Virginia, increasing the percentage of Virginia’s electric school buses from 2% to 3.26%. Announced vehicles include some delivered in 2025 and include 150 vehicles tied to federal grant agreements in funding that may experience delay.

Figure 6-1. Electric School Bus Deployment Announcements, as of February 2025



Graphic created by Virginia Energy , 2025

SECTION VII: CONSUMER ELECTRIC VEHICLE DATA

Electric vehicles are deployed widely across the Commonwealth. Virginia Clean Cities has worked to secure data and seeks to present information to the public at www.driveelectricva.org and at atlaspolicy.com/evaluateva. At the end of 2024, there were approximately 134,000 EVs and PHEVs on the road in the Commonwealth, representing 1.81% of the light duty vehicles on the road in Virginia.

Figure 7-1. Electric Vehicle Registration Data End of Year - EvaluateVA

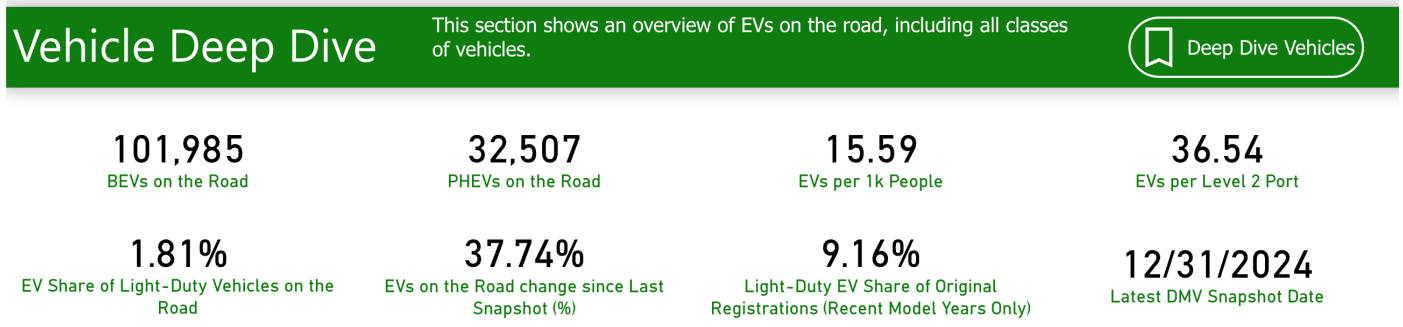


Figure 7-2. Electric Registration Summary - EvaluateVA

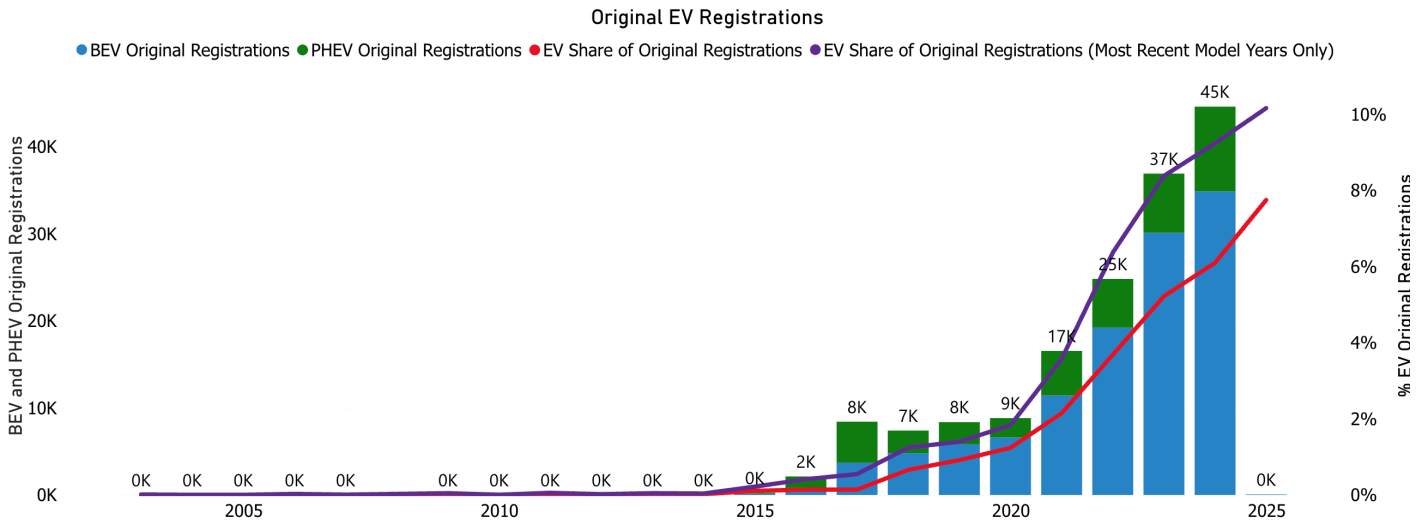
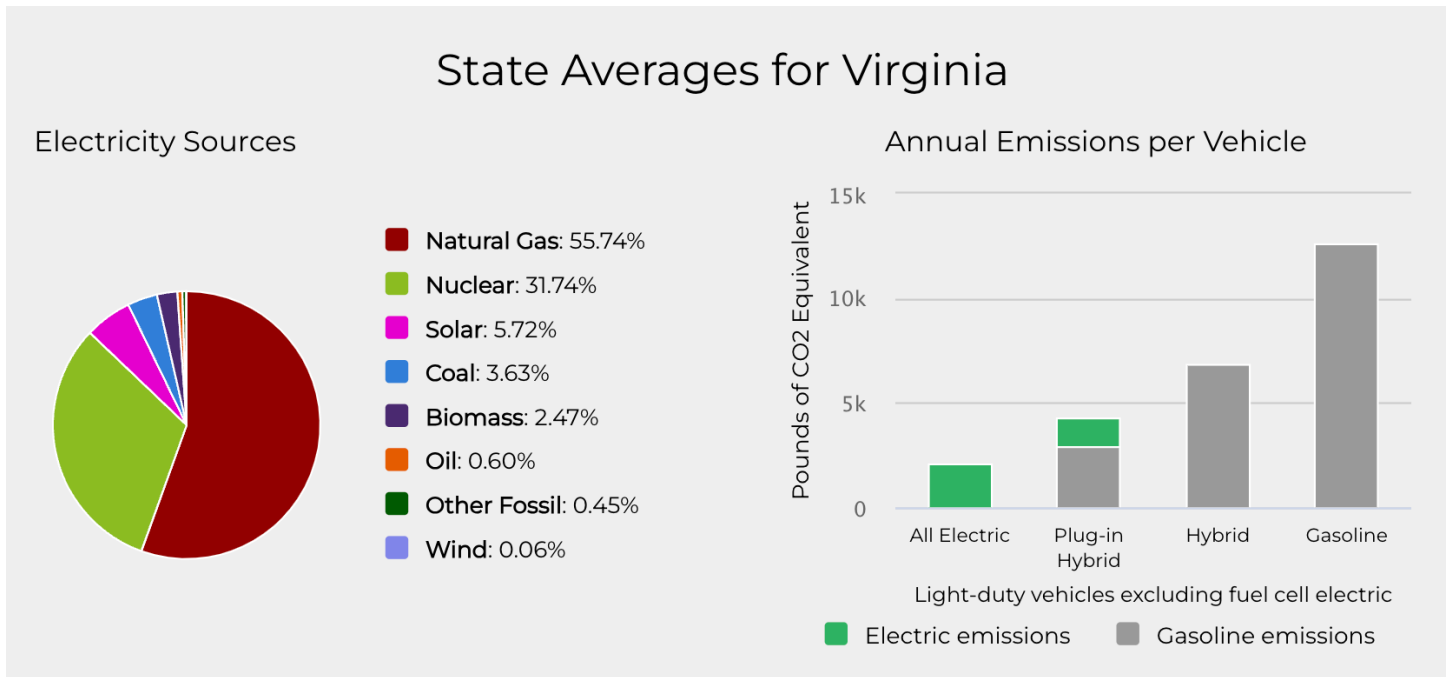


Figure 7-3. Electric Vehicle Emissions on Virginia Grid (U.S. Department of Energy May 2026)

<https://afdc.energy.gov/vehicles/electric-emissions>



Over the summer 2022, Virginia Clean Cities worked with Cadmus Group on a series of projections leading to 2045 – this adoption curve is detailed below and shows even in high adoption scenarios and purchases that a wide number of internal combustion vehicles will operate on the Commonwealth’s roads through mid-century. In June 2025, the US and Virginia plans closer align with the low adoption scenario.

Figure 9-3. Electric Vehicle Adoption Curves and Percentage of Vehicle Stock Through 2045

