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Electric Vehicles: Opportunities for Southeastern Connecticut

SCCOG Briefing Paper Prepared by Emily Bigl, Environmental Planner I

Overview

This comprehensive report has been compiled by Southeastern Connecticut Council of Governments to address the growing significance of electric vehicles (EVs) within the state and its implications for our communities. The purpose of this paper is to assist the COG and its member municipalities in identifying and supporting strategies for broader adoption of EVs across our region. In recent years, the transportation landscape has witnessed a shift towards sustainable mobility, with EVs surfacing as a component of this transition. This report addresses various aspects of EV deployment, including evolving technology, trends, grant opportunities, regulations, policies, and plans. It is important to note that the information presented in this report reflects our understanding of the regulatory environment at the time of publication and is subject to change. Readers are encouraged to verify the current status of relevant regulations for the most up-to-date guidance. Any questions or comments regarding this report may be directed to Emily Bigl at ebigl@seccoq.org.

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Basics of Electric Vehicle Technology

An Electric Vehicle (EV) is a broad term encompassing any vehicle that utilizes electricity to drive its motor for propulsion. The power source for these vehicles can be a battery, a fuel cell, or even a small engine integrated into the vehicle. The size of EV batteries varies, and they are recharged by connecting the vehicle to an electric power source, such as an EV charging station or a standard household electrical outlet. Commercially available, both heavy-duty and light-duty EVs typically come with a higher price tag compared to their conventional gas-powered counterparts. However, potential cost savings can be acquired through federal tax credits, state incentives, or various other financial benefits associated with EV usage. BEV, PHEV, FCEV, ZEV, MPG, and MPGe are common acronyms frequently used in discussions about electric vehicles, each explained below.

Battery Electric Vehicle (BEV): BEVs exclusively rely on large batteries to power the electric motor, without a conventional fuel-injected engine. While BEVs emit no tailpipe emissions during operation, the electricity used may have associated emissions. Periodic charging is necessary for BEV batteries, and contemporary models offer a range of 300 miles or more per charge.

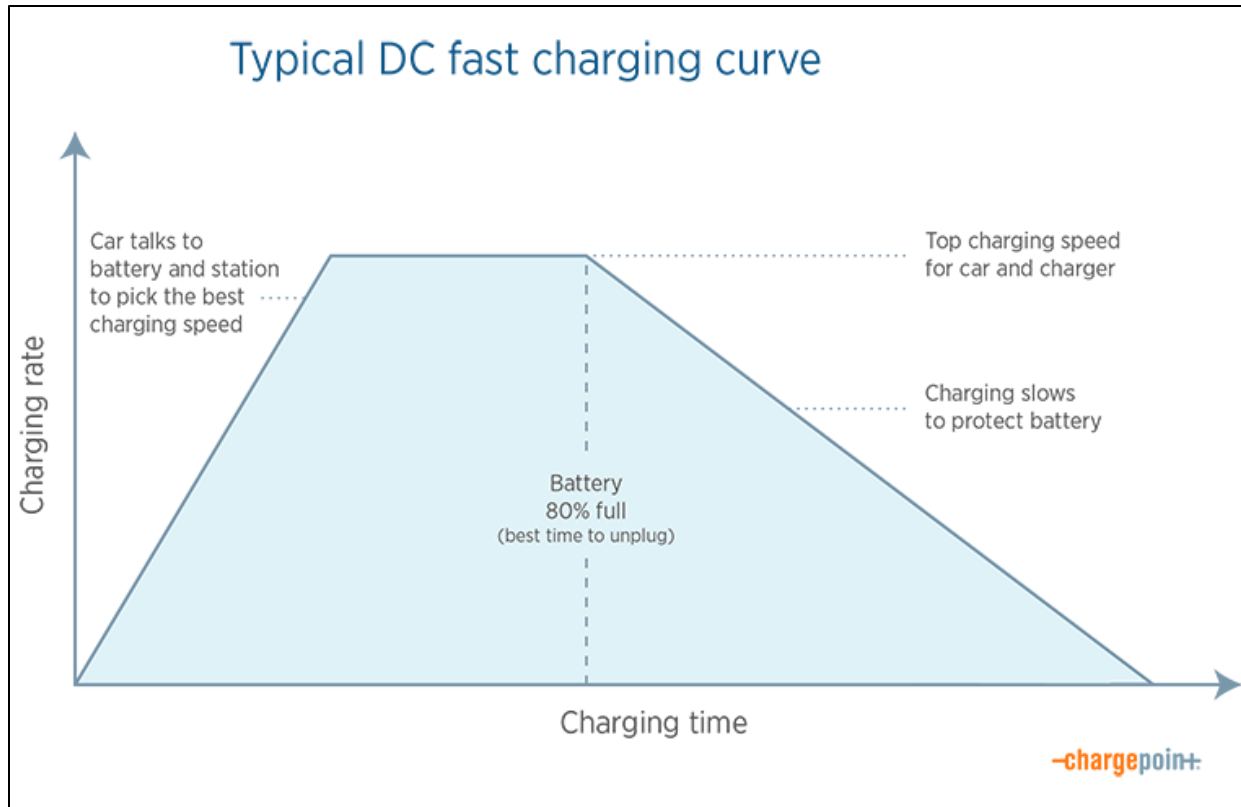
Plug-In Hybrid Electric Vehicle (PHEV): PHEVs integrate both an electric motor and a gasoline engine. These vehicles can operate solely on electricity, drawing power from onboard batteries charged via a charging station or household outlet. The gasoline engine extends the range, allowing seamless transitions between electric and gasoline miles. PHEVs typically have an all-electric range of 15-50 miles, with a total range surpassing 600 miles per gas tank. PHEVs emit no tailpipe emissions in electric-only mode.

Fuel Cell Electric Vehicle (FCEV): FCEVs generate electricity by combining hydrogen with oxygen in a fuel cell stack. This electricity powers the electric motor. FCEVs have a range comparable to gasoline counterparts, with refueling taking just 5 minutes. They produce no harmful tailpipe emissions, emitting only water. Ideally, hydrogen for FCEVs is produced using solar or wind power, eliminating emissions from hydrogen generation. Typically, hydrogen is derived from natural gas through steam reforming, although less efficiently, it can be produced directly from water through electrolysis.

Zero-Emissions Vehicle (ZEV): ZEVs, per California and certain Section 177 State regulations, encompass BEVs and FCEVs that emit no harmful tailpipe emissions. Some regulations also include other clean vehicles like PHEVs, which emit no harmful tailpipe emissions in electric-only mode.

Miles Per Gallon (MPG): A universally recognized metric for gasoline cars, MPG measures fuel economy. To accommodate the variety of alternate-fuel vehicles, the EPA introduced MPGe (Miles Per Gallon Equivalent). Unlike traditional MPG, which calculates mileage on a gallon of fuel, MPGe gauges the distance a vehicle can travel on a quantity of fuel/electricity with the same energy content as a gallon of gasoline.

Charging an EV can be categorized into three main types: Level 1, Level 2, and DC fast charging. Level 1 charging involves plugging the car into a standard 120-volt household electrical outlet, preferably on a dedicated circuit. This method is the slowest, taking 8-20 hours to fully charge a depleted battery. Level 1 charging is convenient for overnight or destination charging, it doesn't require additional equipment, and all EVs come standard with Level 1 charging capability. Level 2 charging operates at 240 volts. It requires installation of home or public charging equipment and takes 3-6 hours for a full charge. Level 2 charging is compatible with most commercially available EVs, and the equipment cost ranges from \$500 to \$2,000, with potential incentives available. 220V charging is another way to describe Level 2 charging, which typically uses a 240-volt power supply. This method is faster than Level 1 charging and is commonly installed at homes, workplaces, and public charging stations. As mentioned earlier, Level 2 charging provides faster charging speeds compared to Level 1, making it more convenient for EV owners who need to charge their vehicles relatively quickly. DC fast charging, also known as Level 3 charging or Tesla Supercharger for Tesla vehicles, utilizes dedicated equipment with 480-volt direct current. This method can provide a 50-80% charge in 30 minutes or less, but then the charging speed slows. See the image below from ChargePoint on the typical DC fast charging curve. Not all EVs support DC fast charging, and it's crucial to check with the manufacturer for compatibility. As the vehicle assumes control during fast charging, each car exhibits varying charging speeds. Different models have distinct speed thresholds, like 55 kW for the Chevrolet Bolt EV and 125 kW for select Teslas. Consequently, not all cars can match the charging pace of every charger. Despite many companies offering chargers exceeding 350 kW, reaching this speed relies on multiple factors.



The charging capacity of electric vehicles can vary significantly depending on temperature, primarily due to the effects of temperature on the battery performance. Lithium-ion batteries, which are commonly used in EVs, perform optimally within a certain temperature range, typically around 20-25°C (68-77°F). Outside of this range, the efficiency of the battery decreases. At lower temperatures, the chemical reactions within the battery slow down, leading to reduced efficiency and capacity. Conversely, at higher temperatures, the battery can experience faster degradation and reduced capacity due to increased internal resistance. Extreme temperatures, whether too hot or too cold, can accelerate battery degradation over time. Manufacturers often incorporate thermal management systems into EVs to mitigate these effects by regulating the battery temperature during charging. Temperature can also affect the estimation of the remaining range displayed to the driver. When it's cold, the available range might decrease due to reduced battery efficiency, even though the battery might still have significant charge left.

Trends

Electric cars account for 1% of vehicles on the road in the U.S., according to Experian Automotive's second quarter 2023 report. Out of all types of cars in the state last year, the share of electric vehicles and plug-in hybrid vehicles was 1.19%, compared to six years earlier, when it was 0.16%. According to the [International Energy Agency](#), electric light-duty vehicle sales are projected to globally reach over 20 million in 2025, doubling the number of sales in 2022, and to quadruple to 40 million in 2030. The sales share of electric light-duty vehicles thus increases from 13% in 2022 to over 20% in 2025 and around 35% in 2030. The stock of electric light-duty vehicles reaches about 230 million in 2030, meaning that about one in every seven light-duty vehicles on the road is electric.

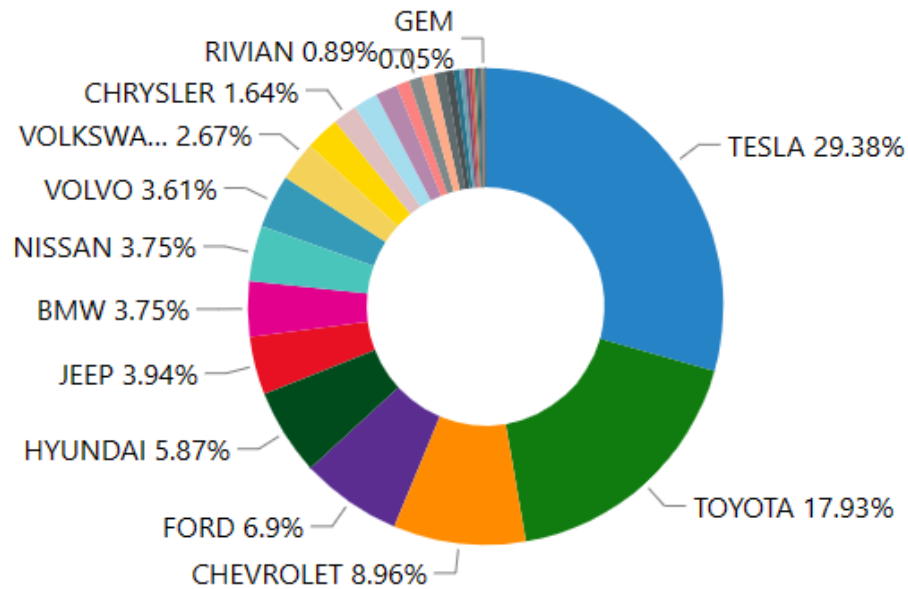
The EPA has finalized strict new rules on vehicle emissions that will push the auto industry to accelerate its transition to electric vehicles. The EPA expects that under the new rules, EVs could account for up to 56% of new passenger vehicles sold for model years 2030 through 2032, meeting a goal that President Biden set in 2021. The EPA rules are not written as an EV mandate or a ban on the sale of gas cars like some states and other countries have adopted. Instead, the EPA sets standards that apply across an entire fleet – meaning an automaker can still make vehicles with higher emissions, as long as they also make enough very low or zero-emission vehicles that it averages out. That means over the next decade, automakers can continue to offer a range of vehicle types, but the “menu” that’s available to consumers will shift to be cleaner overall.

Connecticut is rapidly emerging as an electric vehicle hub. The state not only provides numerous incentives for EVs and is actively expanding infrastructure to support future electric vehicle growth, but is also a favorable location for individuals desiring to own hybrid or electric vehicles. In 2019, Connecticut had 4,120 registered EVs. 2020 had 4,408, 2021 had 9,746, 2022 had 11,814, and 2023 had 18,233 registered EVs. Tesla dominated the EV market between July and December 2021, emerging as the top-selling brand. While comprehensive yearly statistics are unavailable, Tesla constituted a substantial portion of sales, with 2,259 vehicles sold, accounting for approximately 17% of all EV sales in the state. Following closely is Toyota, particularly with its hybrid EVs, notably the Prius Prime. Connecticut witnessed the sale of 815 Toyota electric vehicles, representing about 6% of total EV sales. Other notable players in the Connecticut EV landscape include Ford, Hyundai, BMW, and Chevrolet, each contributing significantly to the EV market. Sales figures for these brands stand at 305, 315, 187, and 162 electric vehicles, respectively, comprising 2.2%, 2.4%, 1.4%, and 1.2% of the overall EV sales in

the state. While there were additional EV sales, such as Smart cars, their numbers were relatively negligible and did not significantly impact the overall percentages.

The following are data visuals generated by [Atlas EV Hub](#) related to the number of registered electric vehicles and their respective manufacturers in New London County. The data comes from CT DEEP and was last updated in July of 2023. DEEP maintains a CSV file of EV registrations that is updated bi-annually.

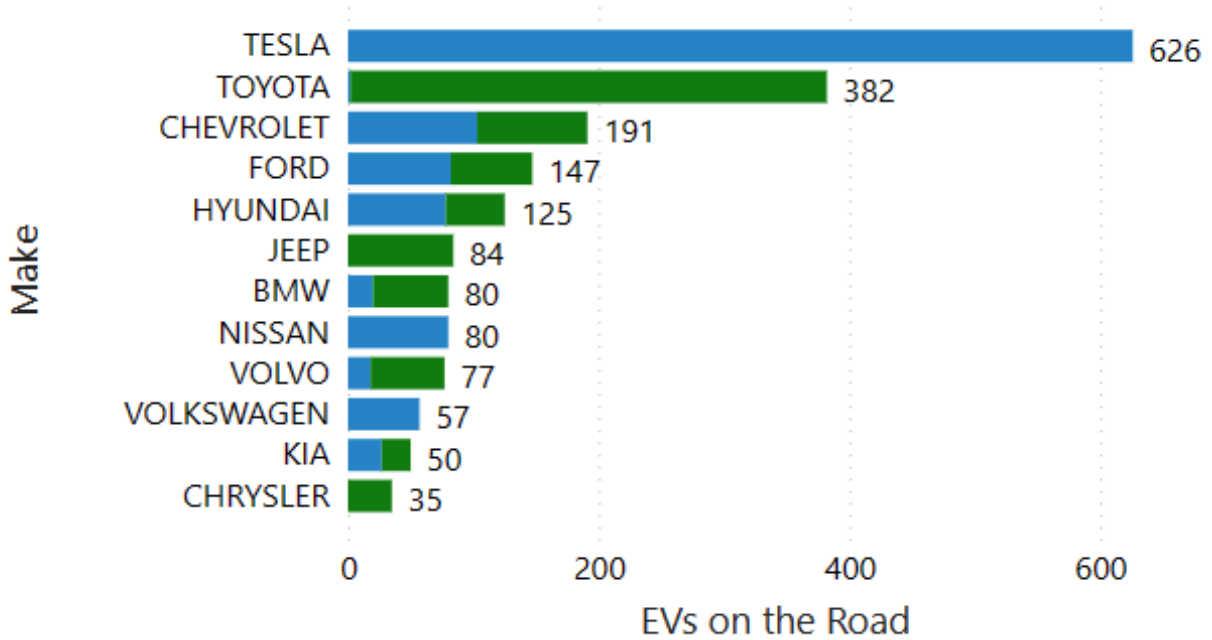
Market Share by Vehicle Make



EVs on the Road by Vehicle Make and Model

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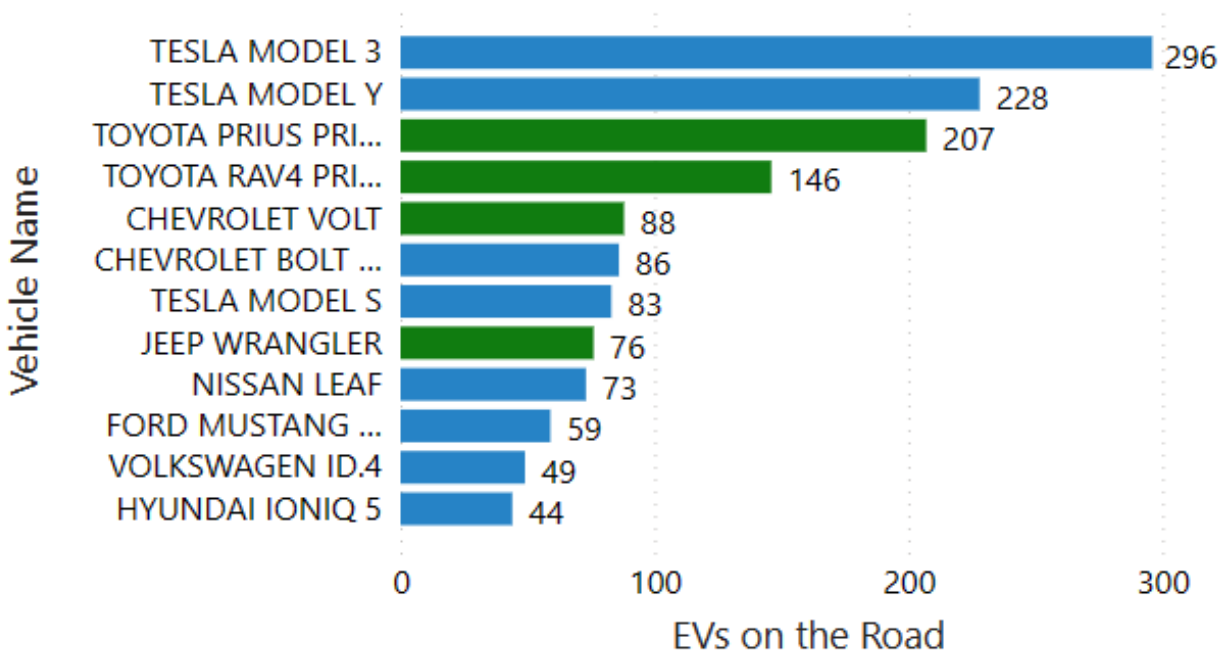
● BEV ● PHEV



EVs on the Road by Vehicle Make and Model

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● BEV ● PHEV



Per the U.S. Department of Energy, there are approximately 55,000 charging stations spread across the United States, boasting more than 141,000 Level 2 and Level 3 ports. In terms of electric vehicle charging station providers, a handful of major players have established dominance in the market. ChargePoint leads with slightly over 31,000 locations and 56,000 total Level 2 and Level 3 ports, making it the largest public EV charging network in the country. 96% of ChargePoint's ports are Level 2 chargers. Tesla, on the other hand, operates just over 6,000 locations, encompassing more than 33,000 ports. A significant portion of Tesla's locations, around 4,000, are Tesla Destination stations primarily offering Level 2 chargers. However, Tesla's remaining locations host the majority of fast-charging ports in the U.S. Blink recently acquired SemaConnect, expanding its footprint to over 3,500 public charging locations with more than 11,000 connectors, predominantly offering Level 2 charging. Electrify America, despite having a relatively modest 800 station locations, provides over 3,700 total charging ports, with almost all offering fast-charging capabilities. EV Connect, with nearly 900 locations, offers more than 3,200 charging ports, predominantly Level 2 chargers. Volta boasts almost 1,400 charging locations with just over 3,000 ports, predominantly Level 2 chargers. EVgo, with slightly over 850 locations and just over 3,000 connectors, shares a similar distribution of Level 3 chargers with Electrify America.

State Grid Capacity

Overview

Connecticut has one of the nation's most environmentally friendly energy grids, achieved through investments in cleaner, lower-polluting technologies, and a commitment to renewable energy sources. Consequently, driving an electric vehicle in Connecticut is more environmentally friendly compared to almost any other state. Connecticut's dedication to clean energy production results in substantially lower carbon dioxide equivalent (CO₂e) emissions from EVs. The following information on Connecticut's electricity and renewable energy is sourced from the [U.S. Energy Information Administration](#). In 2022, Connecticut relied on natural gas for 56% of its total electricity generation, with nuclear power contributing 37%. Renewables made up about 6%, led by solar, biomass, hydroelectric, and a small portion from wind. Solar power accounted for over half of Connecticut's renewable electricity generation, followed by biomass and hydroelectric sources. The state aims for 44% of electricity from renewables by 2030, with a goal of 100% by 2040.

Southeastern CT Regional Utility Services

Connecticut Municipal Electric Energy Cooperative

The Connecticut Municipal Electric Energy Cooperative (CMEEC) is a public power entity that provides electric services to several municipal utilities and participating wholesale customers. For 40 years, CMEEC has been supplying electricity and supporting locally owned utilities and their electric customers in Connecticut. Their member utilities, in turn, provide electricity to roughly 70,000 residential, commercial/industrial and small business customers located across the state. They supply electricity to Bozrah Light & Power, Groton Utilities, Jewett City Department of Public Utilities, and Norwich Public Utilities, as well as a utility in Norwalk.

Norwich Public Utilities

Norwich Public Utilities (NPU) provides four utilities to the City of Norwich – natural gas, electricity, water and wastewater collection. Established in 1904, NPU is municipally owned and governed by a five-member Board of Commissioners and Sewer Authority. As a municipal department of the City of Norwich, Norwich Public Utilities follows the regulatory guidelines established by the Norwich City Charter, Chapter XII. NPU offers rebates to eligible customers for the purchase or lease of a new or previously owned EV or plug-in hybrid electric vehicle (PHEV), and the purchase and installation of a qualified EV charging station. These rebates are discussed in further detail in the “Utility / Private Incentives” section of this document.

Groton Utilities

Groton Utilities is a publicly owned utility, meaning it is owned by the residents of the City of Groton and run by the city government. Bozrah L&P is associated with Groton Utilities. Electric Vehicle rebates are no longer available from Groton Utilities as of December 31, 2022.

Bozrah Light & Power (BL&P)

The Bozrah Light and Power Company (BL&P) became a part of the Groton Utilities family of services on May 5, 1995. When the City of Groton purchased the former privately owned utility. BL&P is operated as a wholly-owned subsidiary of the City of Groton and is now a part of the country's public power community which includes some 2,000 municipally owned and operated utilities across the nation. Bozrah L&P does not offer any incentives for electric vehicles or EVSE.

Jewett City Department of Public Utilities (DPU)

The Jewett City DPU is a locally owned, not-for-profit utility that exists to provide electric and wastewater services to the community. The Jewett City DPU has been in existence since 1897. It belongs to the Connecticut Municipal Electric Energy Cooperative, from whom it purchases power. It is a member of the Northeast Public Power Association and the American Public Power Association. Jewett City Department of Public Utilities does not offer any incentives for electric vehicles or EVSE.

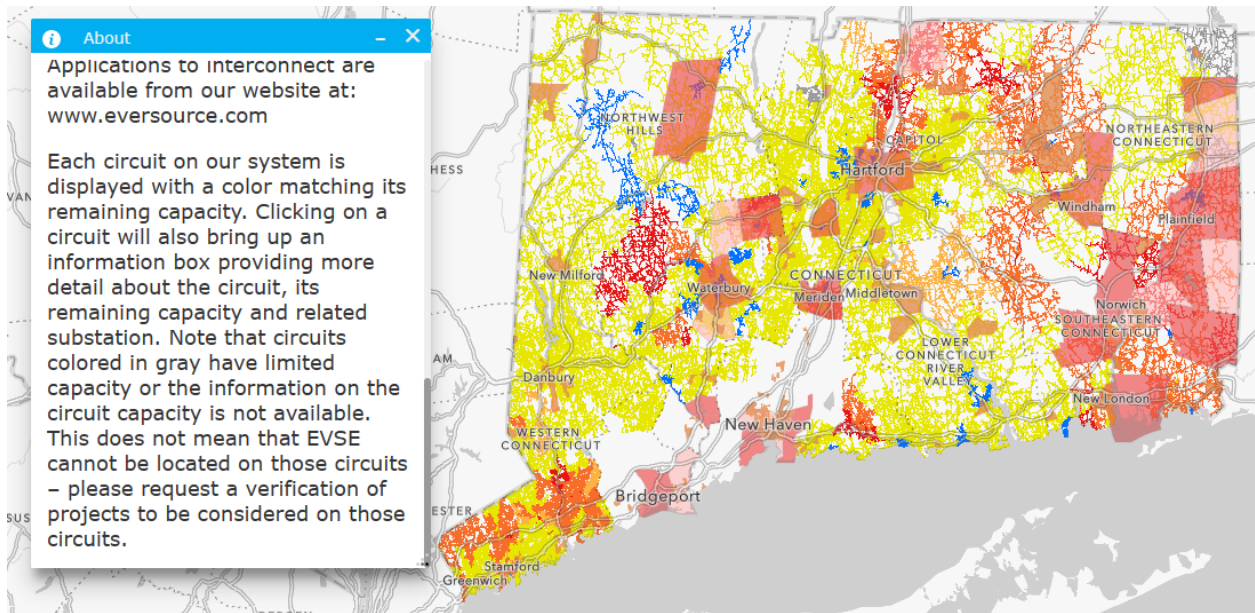
Eversource

Eversource is a public utility holding company registered with the Federal Energy Regulatory Commission and is the parent company of the largest electric utility system in New England. Eversource serves more than 4.4 million electric, natural gas and water customers in Connecticut, Massachusetts and New Hampshire. In Southeastern Connecticut, Eversource provides electric and gas service to Colchester, East Lyme, Franklin, Griswold, Ledyard, Lisbon, Montville, New London, North Stonington, Preston, Sprague, Stonington, Waterford, and Windham. Eversource provides electric-only service to Lebanon and Salem, and gas-only service to Groton and Bozrah. Eversource does not provide any service to Norwich. Eversource has often offered various rebates and incentives for EVs and EVSE in the past, which are further discussed in the "Utility / Private Incentives" section of this document.

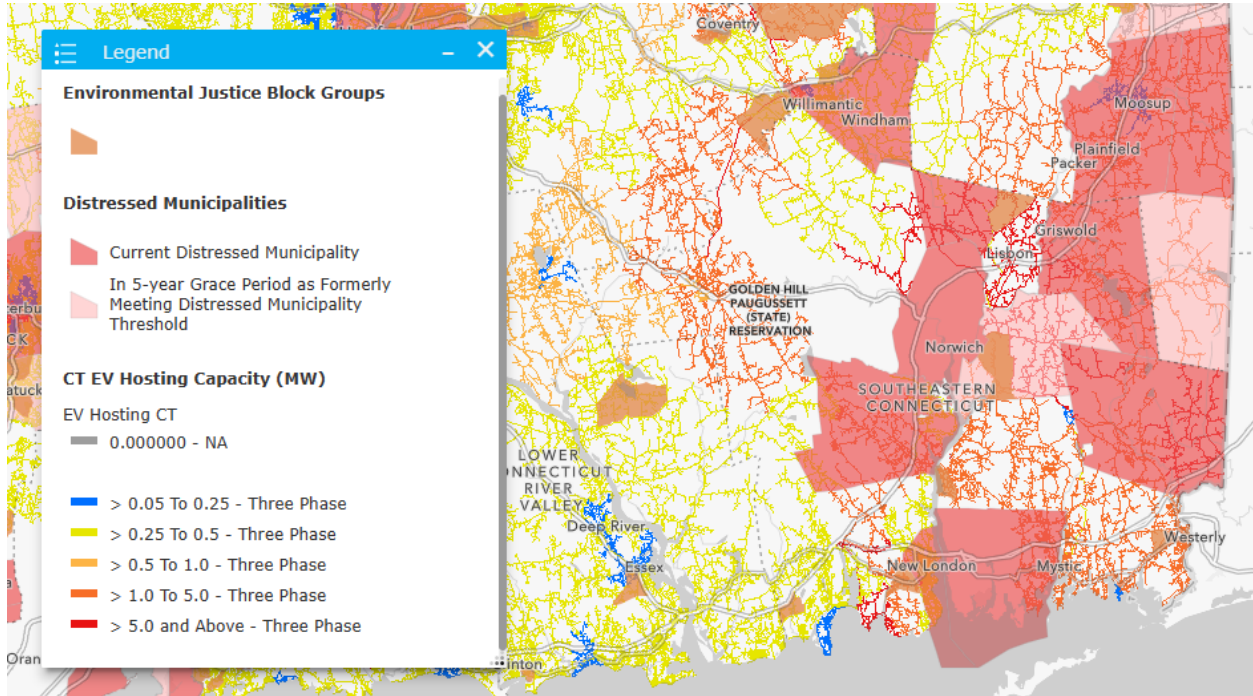
Eversource EV Hosting Capacity Map

The shift towards a more sustainable transportation system, marked by the widespread adoption of electric vehicles, will place new and heightened pressures on our nation's electricity grids. Some electric utilities employ hosting capacity maps to delineate their distribution system's capability to incorporate

additional electrical generation capacity or end-use loads at specific grid locations. These maps serve as valuable tools for utilities, developers, and various stakeholders, aiding in the optimal siting of energy infrastructure. Hosting capacity maps offer increased transparency regarding locations where additional distributed energy resources (DERs), such as EV chargers, can be integrated. They pinpoint areas where DERs can alleviate grid constraints and highlight potential areas requiring upgrades. For instance, companies in the EV sector can utilize these maps to identify new zones for the expansion of their charging station networks. While hosting capacity maps may not address all interconnection queries for individual sites, they do provide insights into the relative levels of investment required. Eversource has an [EV hosting capacity map](#) and defines hosting capacity as “the estimated maximum amount of energy from a distributed resource (such as solar panels) that can be accommodated on the distribution system at a given location.” This capacity is under existing grid conditions and operations without requiring significant infrastructure upgrades. This capacity takes into consideration safety, power quality, reliability, or other operational criteria.



Connecticut as a whole with Eversource’s map instructions



SCCOG region with Eversource's hosting capacity legend

Emerging Energy Issues

Climate change is amplifying the heat island effects, leading to an escalated demand for cooling during peak summer usage. Heat islands intensify the reliance on air conditioning to cool structures. Per the U.S. EPA, through an analysis of case studies across various countries, it was observed that electricity demand for air conditioning rose by approximately 1–9% for every 2°F increase in temperature. Nations with widespread air conditioning usage, such as the United States, witnessed the most substantial surge in electricity demand, contributing to elevated expenses. Heat islands not only elevate overall electricity demand but also heighten peak energy demand. During extreme heat events, exacerbated by heat islands, the heightened air conditioning demand can strain systems, necessitating utilities to implement controlled, rolling brownouts or blackouts to avert power outages.

Transit is also anticipated to put additional pressure on the power supplies. At a State and Federal level there are incentives and mandates to convert both bus and rail fleets to non-ICE vehicles. Within Connecticut, new buses purchased after January 1, 2024 must be electric. The conversion of bus transit fleets will take years, it is anticipated that within SCCOG the first all-electric buses will be in service by 2030 and that full fleet conversion would not occur until 2040 based on asset management planning. Charging stations, specific to buses, will likely be needed at strategic locations within the transit district

to ensure service can be maintained. Commuter and national rail systems are also being converted from hybrid diesel engines to electric engines with overhead catenary. It is notable that energizing systems have different specifications for Amtrak and CT Rail, which poses a significant engineering challenge to be overcome in the next decade.

Strategies for Avoiding Peak Charging and Grid Overload

Avoiding peak charging and grid overload is essential for ensuring the stability and efficiency of electric vehicle charging infrastructure. Several strategies that may be undertaken by a variety of different entities include:

- **Smart Charging Algorithms:** Implement smart charging algorithms that prioritize charging during off-peak hours when electricity demand on the grid is lower. These algorithms can be integrated into EV charging stations and managed through centralized control systems.
- **Time-of-Use (TOU) Pricing:** Encourage EV owners to charge their vehicles during off-peak hours by implementing TOU pricing plans. This involves charging higher rates during peak demand periods and lower rates during off-peak times, incentivizing users to shift their charging to non-peak hours.
- **Demand Response Programs:** Participate in demand response programs offered by utility companies. These programs allow grid operators to remotely control EV charging rates or schedules during times of high demand, helping to alleviate stress on the grid.
- **Vehicle-to-Grid (V2G) Technology:** Explore V2G technology, which enables bidirectional energy flow between EVs and the grid. During peak demand periods, EV batteries can discharge power back to the grid, reducing strain and potentially earning revenue for EV owners.
- **Distributed Energy Resources (DERs):** Deploy DERs such as solar panels, wind turbines, and energy storage systems at EV charging stations or nearby locations. These resources can offset grid electricity consumption during peak hours and provide a renewable energy source for charging.
- **Grid Upgrades and Expansion:** Invest in grid upgrades and expansion projects to accommodate growing EV adoption. Upgrading infrastructure, such as transformers and distribution lines, can increase the grid's capacity to handle additional EV charging loads without experiencing overload.
- **Public Awareness and Education:** Educate EV owners and the general public about the importance of responsible charging behavior and the impact of peak demand on the grid.

Encourage users to plan their charging schedules and consider the broader implications of their charging habits.

- Increase Transit Ridership: Increasing transit ridership has multiple benefits particularly as fleets are converted to non-emitting vehicles. In addition to reducing SOV charging, mode shift reduces vehicle miles traveled, emissions, and congestion. This strategy also has the most benefit in areas that will be disproportionately by urban heat islands and provide benefits for the young, old and disabled users poorly served by use of SOVs.

Incentive Programs

Utility / Private Incentives

Note: It is important to note that electric vehicle incentives and rebates can vary over time. This paper discusses incentives that were applicable at the time of research but may have changed since. Readers are encouraged to verify the latest incentives before making decisions based on this information. For example, effective May 23, 2024, Eversource’s Connecticut Electric Vehicle Charging Program will not be active due to recent regulatory decisions. All Eversource Connecticut EV charging programs are impacted, including home charging installation and Managed Charging participation. Once the Public Utilities Regulatory Authority (PURA) establishes a secure funding mechanism to administer these programs, Eversource will resume issuing incentive payments for the EV charging programs. Read more about the program suspension [here](#).

Commercial Electric Vehicle (EV) Charging Station Rebate - Eversource

Eversource offers rebates to commercial customers who purchase and install qualified Level 2 or direct current fast charging (DCFC) stations. Rebates are available for up to 50% of EV charging station purchase cost and up to 100% of make-ready installation costs, up to the following amounts:

EV Charging Station Type	Maximum Rebate	Underserved Community Maximum Rebate
Level 2	\$20,000	\$40,000
DCFC	\$150,000	\$250,000

Rebates for Connecticut Home Charging - Eversource

Eversource offers three different residential options that may be combined depending on the needs of the applicant. They offer:

- A \$500 rebate on qualified Level 2 Smart Chargers purchased on or after January 1, 2023.
- A \$100 incentive for cars with Telematics that are not eligible for a charger rebate.
- A \$500 rebate to help with a home wiring upgrade

By receiving one of these rebates or incentives, you will automatically be enrolled in the Managed Charging program, which rewards users with up to \$200 annually for charging their vehicle at certain times of the day.

EV Charging in Multifamily Buildings in CT – Eversource

Eversource offers two different ways to lower overall costs on installing qualifying EV Chargers in a multifamily building. The first option is to purchase a charger and apply for a rebate. The second option is to lease an EV charger. Multi-unit dwellings with 5 or more units can avoid up-front costs with the new Level 2 Electric Vehicle Supply Equipment lease program. This program allows multifamily property developers and owners to commission and install qualifying EV chargers without the initial costs of equipment, design, installation, operation and maintenance. Site owner will be billed a fixed amount on a monthly basis with no up-front cost.

Electric Vehicle (EV) and EV Charging Station Rebates - Norwich Public Utilities

Norwich Public Utilities (NPU) offers rebates to eligible customers for the purchase or lease of a new or previously-owned EV or plug-in hybrid electric vehicle (PHEV), and the purchase and installation of a qualified EV charging station. NPU rebates are in addition to available federal, state, and manufacturers' rebates and incentives. Rebates are available in the following amounts:

Vehicle Type	Rebate Amount
New PHEV	\$1000
New EV	\$1,500
Used PHEV, Model Year (MY) 2019 or newer	\$500
Used EV, MY 2019 or newer	\$1,000

EV Charging Station Type	Rebate Amount
Residential Level 2	\$1,000
Commercial, workplace or multifamily Level 2	\$3,000
Commercial, public Level 2	\$4,000

State Grants and Incentives

Diesel Emissions Reduction Act (DERA) Grants

The Connecticut Department of Energy and Environmental Protection (DEEP) provides U.S. Environmental Protection Agency Diesel Emissions Reduction Act (DERA) funding for projects that reduce diesel emissions in Connecticut. Funding for eligible project costs is available for government agencies organizations, and businesses that reduce diesel emissions by converting engines to alternative fuels, retrofitting exhaust controls, purchasing new vehicles, or adding idle reduction equipment. DEEP prioritizes projects that benefit environmental justice communities. The funding limit for a diesel-to-electric replacement of a Class 5-8 vehicle is up to 45% of the total cost, including EV charging infrastructure. The 2023 deadline passed in January 2024, but the grant is administered annually.

Electric Vehicle (EV) Charging Station Grants

The Connecticut Department of Energy and Environmental Protection (DEEP) allocates a portion of its designated funds from the [Volkswagen \(VW\) Environmental Mitigation Trust](#) for the deployment of public Level 1, Level 2, and direct current fast charging (DCFC) stations through the Diesel Emissions Mitigation Program. The Program provides funding in the following amounts:

Applicant Type	Funding Amount
Municipalities, state agencies, and other public entities	Up to 65% of the cost to purchase, install, and maintain EV charging stations for public, government fleet, or government employee use
Non-government entities	Up to 60% of the cost to purchase, install, and maintain publicly available EV charging stations

The next round of funding for the VW program is likely to be in late 2024 or early 2025. Priority will be given to projects located in [environmental justice communities](#).

Hydrogen Fuel Cell Electric Vehicle (FCEV) and Electric Vehicle (EV) Rebate

The Connecticut Hydrogen and Electric Automobile Purchase Rebate Program (CHEAPR) offers point-of-sale rebates of up to \$9,500 for the incremental cost to purchase or lease a FCEV, EV, or plug-in hybrid electric vehicle (PHEV). The manufacturer suggested retail price for new eligible vehicles may not exceed \$50,000. CHEAPR offers an additional rebate, Rebate Plus, for qualifying individuals who purchase or

lease a new or pre-owned eligible vehicle. Rebate Plus applicants must reside in an [environmental justice community](#) or [distressed municipality](#), participate in a [qualifying state or federal income program\(PDF\)](#), or have an income less than 300% the federal poverty line. The CHEAPR rebate may only be combined with the Rebate Plus for the purchase or lease of new vehicles. Rebates are available on a first-come, first-served basis.

Rebates are offered in the following amounts:

Vehicle Type	CHEAPR Standard	Rebate Plus - New Vehicle	Rebate Plus - Used Vehicle
PHEV	\$750	\$1,500	\$1,125
EV	\$2,250	\$2,000	\$3,000
FCEV	\$7,500	\$2,000	\$7,500

Note: On May 7th, 2024, Connecticut House Bill 5523 passed the House and Senate. The Bill Modifies the CHEAPR rebate amount for residents of environmental justice communities from up to 100% more than the standard rebate to at least 200% more than the standard rebate; requires certain proceeds from the Regional Greenhouse Gas Initiative to be used for the CHEAPR program (rather than the CHEAPR account) and other programs that support DEEP’s engagement with environmental justice communities. (Reference [Connecticut General Statutes 22a-202](#))

Loans for Residential Charging or Natural Gas Fueling Infrastructure

The Connecticut Green Bank offers Smart-E low-interest loans for Connecticut electric vehicle drivers to purchase Level 2 and direct current fast charging (DCFC) stations or natural gas vehicle fueling equipment. To qualify, applicants must own and occupy the residence at which the EV charging stations or natural gas fueling equipment will be installed.

Zero Emission School Bus Funding and Technical Assistance

The Connecticut Department of Energy and Environmental Protection (DEEP) must establish and administer a grant program to provide matching funds necessary for municipalities, school districts and school bus operators for the purchase or lease of zero-emission school buses and electric vehicle

charging stations. School districts within environmental justice communities will be prioritized. In addition, DEEP must provide administrative and technical assistance to municipalities, school districts, and school bus operators that are transitioning to zero-emission school buses and installing electric vehicle charging stations.

(Reference [Connecticut General Statutes 22a-201d](#))

Volkswagen Nox Mitigation Program (VW Program)

Under the VW Program, municipalities can receive up to 65% of the cost of replacing a Class 4-8 diesel-powered vehicle with an electric equivalent, with EV charging infrastructure costs included. The next round of funding for the VW program is likely to be in late 2024 or early 2025. Information can be found on the [DEEP website](#) when the next round of funding occurs.

Federal Grants and Incentives

Alternative Fuel Vehicle Refueling Property Credit

The Inflation Reduction Act of 2022 (IRA) has extended and modified the 30C Alternative Fuel Vehicle Refueling Property Credit (30C credit). This credit offers an income tax benefit for qualified alternative fuel vehicle refueling property, including specific facilities for recharging electric vehicles, that are put into service in eligible census tracts. These tracts are defined as low-income community census tracts or non-urban census tracts, as outlined in IRS Notice 2024-20 (further discussed below). Eligible claimants for the 30C credit include individuals, businesses, and certain state, local, and other tax-exempt entities. The 30C credit entails:

- Consumers who purchase and install qualified alternative fuel vehicle refueling property, such as electric vehicle charging equipment, for their primary residence between December 31, 2022, and January 1, 2033, may be eligible for a tax credit. This credit is generally the lesser of 30% of the property's cost or \$1,000.
- For businesses and applicable entities, including state, local, tribal, and other qualifying tax-exempt organizations, the credit for each item of property is generally the lesser of 6% (or 30% if specific prevailing wage and apprenticeship requirements are met) of the property's cost or \$100,000. This credit applies to property placed in service between December 31, 2022, and January 1, 2033.

Additional Federal Tax Credits

Newly purchased all-electric, plug-in hybrid, and fuel cell electric vehicles in 2023 or later might qualify for a federal income tax credit, potentially reaching a maximum of \$7,500. The eligibility for this credit is contingent on various factors, including the vehicle's Manufacturer's Suggested Retail Price (MSRP), the location of its final assembly, sourcing of battery components and/or critical minerals, and the applicant's modified adjusted gross income (AGI). Similar tax credits of up to \$7,500 may apply to qualified vehicles acquired before 2023. Additionally, pre-owned vehicles bought in 2023 or beyond are eligible for a tax credit, with the maximum amount set at \$4,000.

Low or No Emission Grant Program

On February 8, 2024, the Federal Transit Administration (FTA) declared the availability of \$1.5 billion in funding for Fiscal Year 2024, aimed at aiding state and local initiatives in the procurement or modernization of buses, enhancement of bus facilities, and support for workforce development.

A substantial portion of this funding, specifically \$390 million, is earmarked under the Grants for Buses and Bus Facilities Program. This funding initiative aligns with FTA's key objectives, emphasizing the reinforcement of U.S. bus manufacturing, containment of vehicle costs, and expediting the delivery of new vehicles. This funding opportunity introduces simplified application requirements for tribes seeking less than \$1 million, facilitating the application process for tribes with relatively modest requests.

IIJA Charging and Fueling Infrastructure Grants Program

The IIJA (Infrastructure Investment and Jobs Act) Charging and Fueling Infrastructure Grants Program (Community Charging) provides grants for projects to develop electric vehicle charging and hydrogen, propane, and natural gas fueling infrastructure access along alternative fuel corridors throughout the country, including in rural areas, low- and moderate-income neighborhoods, and communities with a low ratio of private parking spaces to households or a high ratio of multiunit dwellings to single family homes. The IIJA Charging and Fueling Infrastructure Grants Program (Corridor Charging) deploys publicly accessible EV charging infrastructure and hydrogen, propane, and natural gas fueling infrastructure along designated Alternative Fuel Corridors. Both tracks of the Charging and Fueling Infrastructure Grant Program provide \$1.25 billion for a total of \$2.5 billion over 5 years. This first round of funding makes \$700 million from fiscal years 2022 and 2023 funding available to strategically deploy electric vehicle charging infrastructure and other fueling infrastructure projects in urban and rural communities in publicly accessible locations, including downtown areas and local neighborhoods, particularly in underserved and disadvantaged communities.

EPA Clean School Bus Program

With funding from the Bipartisan Infrastructure Law, the EPA's Clean School Bus Program provides \$5 billion over five years (FY 2022-2026) to replace existing school buses with zero-emission and low-emission models through grants and rebates. The 2024 Clean Heavy-Duty Vehicles (CHDV) grant program Notice of Funding Opportunity is now open. EPA anticipates approximately 70% of the nearly \$1 billion to fund new, zero-emission Class 6 or 7 school buses. The NOFO will close on July 25, 2024.

Energy Efficiency and Conservation Block Grant Program

The federal Office of State and Community Energy programs is hosting an Energy Efficiency and Conservation Block Grant (EECBG) Program designed to assist states, local governments, and Tribes in implementing strategies to reduce energy use, to reduce fossil fuel emissions, and to improve energy efficiency. The deadline to apply for EECBG Program formula grants and vouchers has been extended. For local governments, it is now October 31, 2024. For Tribes, it is May 31, 2025.

National Electric Vehicle Infrastructure Program (NEVI)

The \$5 billion National Electric Vehicle Infrastructure (NEVI) Formula Program will provide dedicated funding to States to strategically deploy EV charging infrastructure and establish an interconnected network to facilitate data collection, access, and reliability. Initially, funding under this program is directed to designated Alternative Fuel Corridors for electric vehicles to build out this national network, particularly along the Interstate Highway System. When the national network is fully built out, funding may be used on any public road or in other publicly accessible locations. CT will receive \$52 million in formula funding over the next 5 years. The Phase I AFC deadline has passed already in the state, and it is unclear when the NOFO for Phase II of the CTDOT NEVI Program will be released.

DOE Local Government Energy Program - Communities Sparking Investment In Transformative Energy (C-SITE)

This program will support eligible local governments and Tribes to implement building efficiency and/or electrification, electric transportation, energy infrastructure upgrades, microgrid development and deployment, renewable energy, resilience hubs, and workforce development projects that provide direct community benefits, spark additional investments, meet community-identified priorities, and build local capacity. Applications are due May 31, 2024.

DOE National Renewable Energy Laboratory (NREL) - Clean Energy to Communities Program In-Depth Partnerships

This program is composed of local government, community-based organizations, electric utilities, and other key organizations that can help communities develop a validated plan to put clean energy ambitions into action and address challenges. NREL has an open request for proposal for communities of all types for two to four new in-depth partnerships, each including up to \$500,000 in subcontracting funding and \$3,500,000 of technical assistance from one or more national laboratories. Successful community teams will bring electric utilities and local governments together to solve cross-sectoral energy transition challenges. Applications are due by June 14, 2024.

Industry Best Practice Resources

Note: *Due to the continual addition and modification of state laws and regulations, such as the passing of Public Act No. 22-25 in 2022, it is acknowledged that the language within certain best practice documents may no longer align with current legal standards.*

Great Plains Institute, a nonprofit organization that works to advance clean energy solutions in the Midwest, produced a [Summary of Best Practices in Electric Vehicle Ordinances](#) in June of 2019. The summary is provided as a reference to cities seeking to develop EV zoning standards or development regulations. The summary does not address building or electric codes, only zoning ordinance language and associated tools. The examples are not intended to constitute recommendations, but rather to show the breadth of choices made by communities across the nation to integrate EVSE into development regulation. Zoning ordinance language from the municipality of Middletown, CT is highlighted three times within this document. An example from Middletown is seen in Section 5: Required EV Parking Capacity & Minimum Parking Requirements. Where a typical ordinance may include language such as “May include flexibility on minimum requirements to reduce cost burden”, Middletown’s ordinance language at the time was more specific, citing that “Applicants may request a waiver or reduction of electric vehicle parking requirements from the Planning and Zoning Commission during site plan approval.”

[Guidelines for the Installation of Electric Vehicle Charging Stations at State-Owned Facilities](#) is a 2020 document from CT DEEP that offers a thorough overview of the procedures involved in procuring and setting up electric vehicle supply equipment (EVSE) at state-owned facilities in Connecticut. These guidelines are a crucial component of the state's comprehensive strategy to facilitate widespread electric vehicle adoption, diminish harmful criteria pollutants in the transportation sector, meet federal health-based air quality standards, and reduce communities' exposure to toxins emitted by mobile sources. The document provides insights for facility and fleet managers, covering aspects such as determining the required number of EVSE stations and outlining the installation process for EV chargers.

[AchiEVe: Model Policies to Accelerate Electric Vehicle Adoption](#) is a 4th version report from 2020 presented by the Sierra Club, Plug In America, FORTH, and the Electrification Coalition. This toolkit is designed to provide public officials and advocates with model EV policies that accelerate the switch to these clean vehicles in an effective, sustainable, and equitable way. Connecticut’s CHEAPR Program is highlighted as a model policy in the “Policies to Encourage and Enable Vehicle Purchase” section of the report. Connecticut is also featured as a model in the “Evaluating Vehicle Registration Fees” section for its reduced registration fees for EV passenger cars.

The 2020 [Electric Vehicle Roadmap for Connecticut \(EV Roadmap\)](#) represents a comprehensive strategy for accelerating the deployment of electric vehicles through policies and regulatory tools addressing transportation equity, purchasing incentives, consumer education, charging infrastructure expansion, consumer protection, integration of EVs into the electric grid, utility investment, and utility rate design. The EV Roadmap’s Key Focus Areas are...

- Public and private fleets
- Innovation
- Expanding EV charging infrastructure
- Demand charges
- Education, marketing, and outreach
- Consistency of the consumer charging experience
- Medium- and heavy-duty vehicle electrification
- Building codes and permitting requirements
- Leveraging incentives to promote equitable, affordable EV adoption
- Minimizing grid impacts through demand reduction measures
- Volkswagen EVSE

The [2022 Local Government Playbook from the Electrification Coalition](#) contains recommendations for how counties, cities, and towns can leverage federal investments in electric vehicle infrastructure. It provides a “checklist” of actions and strategies that local governments can enact now and in the future, including best practices, innovative policy approaches, and lessons from previous charging deployments. The report serves as a tool to support the local deployment of EV infrastructure and implementation of

federally funded programs. Topics covered include near- and long-term policy recommendations, state and regional planning, stakeholder engagement, community engagement and site planning.

Additionally, the Electric Vehicle Council from Fuels Institute produced a [Best Practice Guide for EVSE Regulations](#) in October of 2022. The guide was prepared to help state and local officials, and other readers, understand in brief form the policy landscape in the U.S. both at the state and local levels, noting types of policies that have been set and providing several examples of how different authorities having jurisdiction (AHJ) have implemented them. The State of Connecticut is featured twice as an example, but the guide does not include any examples from specific Connecticut municipalities.

Connecticut's approach on policies governing EVSE operation is highlighted, with the following text from Connecticut General Statutes §16-19ggg (2016) being featured: "Owners and operators of public EVSE that require payment must allow multiple payment options to allow public access. In addition, payment should not require users to pay a subscription fee or obtain a membership of any kind; however, payment required may be based on price schedules for such memberships. Owners and operators can impose restrictions on the amount of time a vehicle can use the EVSE."

The Capitol Region Council of Governments hosted a seminar on [Electric Vehicle Charger Stations](#) in October of 2023, as part of a Bipartisan Infrastructure Law Workshop Series. The informational seminar was for participants to learn more about electric vehicle charging stations by reviewing best practices in siting, design, permitting, and construction and potential funding sources.

The Joint Office of Energy and Transportation released a slide deck from a webinar recording on February 15th, 2024 titled "[Navigating Zoning and Building Codes for EV Charging Infrastructure.](#)" This webinar was the second in a two-part webinar series on planning for permitting and zoning considerations for electric vehicle charging infrastructure. Attendees heard from presenters on how to effectively navigate zoning and building code processes for planning, constructing, and deploying EV chargers.

Most recently, U.S. DOE's Joint Office of Energy and Transportation has partnered with the Clean Energy to Communities (C2C) to launch a [Public Electric Vehicle \(EV\) Charging Infrastructure Playbook](#). This guidebook provides interactive resources to help communities plan and build the infrastructure needed to support a zero-emission transportation system. The modules within the playbook include guiding questions, videos, worksheets, and additional resources to drive local progress. Modules can be followed in the order presented or used as stand-alone resources to help with specific priorities.

Connecticut State Laws and Regulations

Public Act No. 22-25

In the 2022 legislative session, the Connecticut General Assembly approved [Public Act No. 22-25](#), titled "An Act Concerning The Connecticut Clean Air Act." The legislation encompasses a range of measures designed to address emissions from the transportation sector, recognized as the primary contributor to statewide greenhouse gas (GHG) emissions at 37%. Additionally, it accounts for 67% of nitrogen oxide emissions, a main component of smog. Among the provisions, the law grants authorization to the Connecticut Department of Energy and Environmental Protection (DEEP) to implement more stringent emissions standards for medium and heavy-duty vehicles. Despite constituting only 6% of the on-road vehicle fleet, these vehicles contribute up to 53% of nitrogen oxide emissions. The legislation also introduces statutory modifications under the Connecticut Clean Air Act, expands existing programs, and establishes new initiatives focused on electric vehicle utilization and air quality improvement. Key provisions of the legislation include:

- **Medium and Heavy-Duty Vehicle Standards:** Empowering the DEEP commissioner to adopt California's standards for medium- and heavy-duty motor vehicles, ensuring the production and availability of cleaner vehicles in Connecticut.
 - The medium and heavy-duty (MHD) vehicle standards require increasing percentages of MHD electric vehicle sales until 2032 (depending on vehicle class) and will reduce emissions from internal combustion engine MHD vehicles by up to 90%.
- **State Fleet Electrification:** Adjusting the schedule for electrifying the state fleet and prohibiting the procurement of diesel-powered buses after January 1, 2024.
- **Connecticut Hydrogen and Electric Automobile Purchase Rebate (CHEAPR) Program:** Enhancing the CHEAPR program to prioritize low-income individuals, environmental justice communities, and extending eligibility to various entities, while allocating greenhouse gas reduction fees to the CHEAPR account.
- **Zero Emission School Buses:** Promoting the adoption of zero-emission school buses, setting targets for environmental justice communities, and establishing a matching grant program to support the EPA Clean School Bus program.
- **Medium and Heavy-Duty Truck Vouchers:** Allowing DEEP to establish a voucher program to encourage the use of zero-emission medium and heavy-duty vehicles, funded from the CHEAPR account.

- **Traffic Signal Grant Program:** Requiring CTDOT to establish a matching grant program to assist municipalities in modernizing existing traffic signal equipment.
- **Right to Charge:** Establishing "right to charge" provisions in condominiums and common interest communities, along with "renter's right to charge" under specific specifications.
- **New Construction Electric Vehicle (EV) Charging Requirements:** Mandating a percentage of parking spaces in certain new constructions to be equipped with EV charging stations or infrastructure.
 - This provision of the Act mandates certain requirements for new state facilities constructed after January 1, 2023, with construction costs exceeding \$100,000. These facilities must have level two electric vehicle charging stations installed in at least 20% of their parking spaces.
 - For non-state facilities, new commercial or multi-family residential buildings constructed after January 1, 2023, with 30 or more parking spaces, must install level two or direct current fast-charging stations in at least 10% of their parking spaces. Municipalities have the option to increase this threshold beyond 10%.

Public Act No. 22-25 also introduces a property tax exemption for specific electric vehicle infrastructure:

- Level two electric vehicle charging stations on commercial or industrial properties.
- Nearly all electric vehicle charging stations on residential properties.
- Refueling equipment for fuel cell electric vehicles.

Governor Lamont has signed the Act into law, effective October 1, 2022. This law will exempt the specified electric charging stations from property taxation starting with the October 1, 2022 grand lists.

Alternative Fuel and Fuel-Efficient Vehicle Acquisition and Emissions Reduction Requirements

Cars and light-duty trucks purchased by state agencies must meet the following requirements:

- Have an average U.S. Environmental Protection Agency estimated fuel economy of at least 40 miles per gallon;
- Comply with state fleet vehicle acquisition requirements set forth under the Energy Policy Act of 1992 (EPAAct); and
- Obtain the best achievable fuel economy per pound of carbon dioxide emitted for the applicable vehicle classes.

Alternative fuel vehicles (AFVs) that the state purchases to comply with these requirements must be capable of operating on an [EPA-defined alternative fuel list](#) that is available in the state.

In addition, all cars and light-duty trucks that the state purchases or leases must be hybrid electric vehicles, plug-in hybrid electric vehicles, or capable of using alternative fuel. All AFVs purchased or leased must be certified to the California Air Resources Board's (ARB) Ultra Low Emission Vehicle II (ULEV II) standard, and all light-duty gasoline vehicles and hybrid electric vehicles the state purchases or leases must be certified, at a minimum, to the California ARB ULEV II standard.

Beginning January 1, 2026, cars and light-duty trucks purchased by state agencies must meet the following electric vehicle acquisition goals:

- 50% of vehicle acquisitions must be EVs by 2026;
- 75% of vehicle acquisitions must be EVs by 2028; and,
- 100% of vehicle acquisitions must be EVs by 2030.

Lower EV maintenance costs must be considered when Connecticut Department of Administrative Services (DAS) leases vehicles to other state agencies. The DAS must report annually on the composition of the state fleet, including the volume of alternative fuels used. Beginning January 1, 2026, and annually thereafter, if procurement of light-duty cars and trucks purchased by the state does not meet the ZEV procurement requirements, DAS must submit an explanatory report to the General Assembly.

Vehicles that the Connecticut Department of Public Safety designates as necessary for the Department of Public Safety to carry out its mission are exempt from these provisions.

(Reference [Connecticut General Statutes 4a-67d](#))

Electric Vehicle (EV) Charging Station Accessibility Requirements

In October 2022, the Connecticut Department of Administrative Services (DAS) set requirements for accessible EV charging stations by adopting the [2021 International Building Code](#) by the [International Council Code \(ICC\)](#), 2017 ICC A117.1, and [American National Standards Institute \(ANSI\) Section 502.11](#).

Accessible EV charging stations must have an accessible route from the aisle adjacent to the parking space to the clear floor space. The accessible route must be unobstructed from bollards, curbs, or wheels stops, and remain unobstructed during charging. Meters and pay stations associated with EV charging stations must have displays and information visible from a point located no more than 40 inches above the center of the clear space in front of the parking meter or parking pay station.

(Reference [Connecticut State Building Code, Section 502.10.2 through 502.11.3](#))

Electric Vehicle Emissions Inspection Exemption

Vehicles powered exclusively by electricity are exempt from state motor vehicle emissions inspections.

(Reference [Connecticut General Statutes 14-164c](#)).

Electric Vehicle (EV) Parking Requirement

An individual may not park a motor vehicle in a parking space equipped with a public charging station unless that vehicle is an EV. An infraction applies for non-EVs that park in spaces with public charging stations.

(Reference [House Bill 7140, 2019](#) and [Connecticut General Statutes 16-19ggg](#))

Mandatory Electric Vehicle (EV) Charging Station Building Standards

Beginning January 1, 2023, new state buildings with project costs greater than \$100,000 must install Level 2 EV charging stations at a minimum of 20% of light-duty vehicle (LDV) parking spaces. New commercial or multi-unit dwelling buildings with at least 30 LDV parking spaces must be capable of supporting Level 2 or direct current fast charging (DCFC) stations at 10% of such spaces.

(Reference [Connecticut General Statutes 4b-77](#))

Public Electric Vehicle (EV) Charging Station Requirements

Owners and operators of public EV charging stations that require payment must offer multiple payment options. In addition, payment should not require users to pay a subscription fee or obtain a membership of any kind, however payments may be based on price schedules for such memberships. Owners and operators may impose restrictions on the amount of time a vehicle can use the EV charging station.

In addition, owners and operators of public EV charging stations must disclose the location and characteristics of each EV charging station to the U.S. Department of Energy's Alternative Fuels Data Center. Information that must be disclosed includes, but is not limited to, address, voltage, and timing restrictions.

(Reference [Connecticut General Statutes 16-19ggg](#))

State Building Electric Vehicle Charging Station Standards

The Connecticut Department of Energy and Environment must develop standards for construction of state buildings, which include standards electric vehicle charging stations standards and meet or exceed Leadership in Energy and Environmental Design (LEED) Silver levels.

(Reference [Connecticut General Statutes 16a-38k](#))

Electric Vehicle (EV) Charging Station Incentive Requirements

The Connecticut Public Utilities Regulatory Authority (PURA) established a new 9-year statewide Electric Vehicle Charging Program that started in summer of 2021. The Program requires utilities to offer incentives for EV charging station infrastructure, increased incentive amounts for underserved communities, and special electricity rates for charging EVs.

(Reference [PURA Docket No. 17-12-03RE04](#))

Connecticut State Policies and Plans

Connecticut's National Electric Vehicle Infrastructure (NEVI) Planning

The U.S. DOT's \$5 billion National Electric Vehicle Infrastructure (NEVI) Formula Program will provide dedicated funding to States to strategically deploy EV charging infrastructure and establish an interconnected network to facilitate data collection, access, and reliability. Initially, funding under this program is directed to designated Alternative Fuel Corridors for electric vehicles to build out this national network, particularly along the Interstate Highway System. When the national network is fully built out, funding may be used on any public road or in other publicly accessible locations. The U.S. Department of Transportation's (DOT) [NEVI Formula Program](#) requires the Connecticut Department of Transportation (CTDOT) to submit an annual EV Infrastructure Deployment Plan (Plan) to the DOT and U.S. Department of Energy (DOE) [Joint Office of Energy and Transportation](#) (Joint Office), describing how the state intends to distribute NEVI funds. The submitted plans must be established according to [NEVI guidance\(PDF\)](#). Implications for COGs, municipalities, and utilities are outlined below.

- COGS can play a role of educating COG town members and staff about EVs and EVSE, as well as collaborating with peer agencies involved with EV infrastructure in the region. Additionally, COGs can determine EV infrastructure needs in the region and how to address them, as well as identify funding sources and help members as they develop funding/grant applications.
- Municipalities will need to collaborate with regional governments and utilities to ensure compliance and maintenance, while potentially increasing their investment in EV charging stations in public areas. Municipalities would also likely be responsible for the promotion of the new charger location(s) among residents and commuters in their area.
- Utilities will provide power supply and grid connectivity to charging stations, potentially requiring infrastructure upgrades. Utilities may also participate in grant programs to support charging station deployment.

Utility Company Electric Vehicle (EV) Charging Load Projection Requirement

The Public Utilities Regulatory Authority requires electric distribution companies to integrate EV charging load projections into distribution planning. Projections will be based on the number of EVs registered in the state as well as projected fluctuations in EV sales. Electric distribution companies must publish annual reports detailing the EV charging load projections for the company's distribution planning.

(Reference [Connecticut General Statutes 16-19fff](#))

Zero Emission Transit Bus Acquisition Requirement

Beginning January 1, 2024, the state may not procure, purchase, or lease diesel transit buses. At least 30% of transit buses purchased or leased by the state must be zero-emission by January 1, 2030. The Commissioner of Administrative Services must study and identify barriers to implementing zero-emission buses state-wide and submit a report of the results to the General Assembly by January 1, 2024.

(Reference [Connecticut General Statutes 4a-67d](#))

School Bus Emissions Reduction

Each full-sized school bus with a Model Year (MY) 1994 or newer engine must be equipped with specific emissions control systems, including either: a closed crankcase filtration system and a level 1, level 2, or level 3 device; an engine that the U.S. Environmental Protection Agency (EPA) has certified as meeting MY 2007 emissions standards; or use of compressed natural gas or other alternative fuel that EPA or the California Air Resources Board has certified to reduce particulate matter emissions by at least 85% as compared to ultra-low sulfur diesel fuel. Beginning January 1, 2035, school districts may only purchase zero-emission school buses, and all school buses in Connecticut must be zero emission by 2040. School districts within environmental justice communities must transition to zero emission buses by January 1, 2030. School districts may enter zero-emission school bus contracts for 10-year periods.

(Reference [Connecticut General Statutes 14-164o, and 22a-201e](#))

Electric Vehicle (EV) Registration Data

The Connecticut Department of Motor Vehicles (DMV) must record the number of EVs registered in Connecticut. An EV is defined as any all-electric vehicle, fuel cell electric vehicle, plug-in hybrid electric vehicle, or range-extended EV. The data must be publicly available on the DMV website and include the total number of EVs registered each year. The DMV must update the information every six months.

(Reference [Connecticut General Statutes 14-12\(l\)](#))

Electric Vehicle (EV) Deployment Goal

The Connecticut Department of Energy and Environmental Protection (DEEP) released the [EV Roadmap for Connecticut\(PDF\)](#) (Roadmap), a framework to accelerate EV adoption. The Roadmap complements strategies identified in the [Zero Emission Vehicle Deployment Support](#), including fleet electrification, expanding EV charging station infrastructure, establishing EV charging stations interoperability criteria,

minimizing grid impacts, advancing building codes, streamlining permitting requirements, leveraging incentives, and increasing education and outreach.

Integrated Resources Plan Report

The Department of Energy and Environmental Protection (DEEP), in consultation with the electric distribution companies, must deliver a plan that analyzes, among other things, the potential for electric vehicles to provide energy storage and other services to the electric grid, and identify strategies to ensure that the grid is prepared to support increased EV charging based on projections of sales of EVs. The report must be delivered biennially. Reports are published biennially and available on the [DEEP Integrated Resources Planning](#) website.

(Reference [Connecticut General Statutes 16a-3a through 16a-3e](#))

Medium- and Heavy-Duty (MHD) Zero Emission Vehicle (ZEV) Deployment Support

California, Colorado, Connecticut, District of Columbia, Hawaii, Maine, Maryland, Massachusetts, Nevada, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Vermont, Virginia, and Washington (signatory states) signed a [memorandum of understanding](#) (MOU) to support the deployment of medium- and heavy-duty (MHD) ZEVs through involvement in a Multi-State ZEV Task Force (Task Force).

In July 2022, the Task Force published a [multi-state action plan\(PDF\)](#) to support electrification of MHD vehicles. The action plan includes strategies and recommendations to accomplish the goals of the MOU, including limiting all new MHD vehicle sales in the signatory states to ZEVs by 2050, accelerating the deployment of MHD ZEVs, and ensuring MHD ZEV deployment also benefits disadvantaged communities.

State Fleet Greenhouse Gas (GHG) Emissions Reduction

A Steering Committee on State Sustainability (Committee) will direct executive branch agencies to reduce GHG emissions from their vehicle fleets by expanding the Lead by Example program. The Committee will develop actions to achieve GHG reduction goals set by the governor.

(Reference [Executive Order 1, 2019-1](#))

Zero Emission Vehicle (ZEV) Study and Procurement

The Connecticut Department of Administrative Services (DAS) and the Connecticut Department of Transportation must study the feasibility and cost savings of creating and implementing a bid process for

the bulk procurement of light-, medium-, and heavy-duty electric vehicles, hydrogen fuel cell electric vehicles, and zero emission buses for the fleet. DAS must publish the study results by January 1, 2024.

(Reference [Connecticut General Statutes 4a-67d](#))

Alternative Fuel Vehicle (AFV) Procurement Preference

In determining the lowest responsible qualified bidder for the award of state contracts, the Connecticut Department of Administrative Services may give a price preference of up to 10% for the purchase of AFVs or for the purchase of conventional vehicles plus the conversion equipment to convert the vehicles to dual or dedicated alternative fuel use. For these purposes, alternative fuels include natural gas, hydrogen, propane, or electricity used to operate a motor vehicle.

(Reference [Connecticut General Statutes 4a-59](#))

Electric Vehicle (EV) Charging Station Policies at State Agencies

Beginning October 1, 2022, an individual may not park a motor vehicle in a state agency parking space equipped with an EV charging station unless the vehicle is an EV. EVs may not charge longer than the maximum time limit set by each state agency. State agencies must assess and collect fees from public and employee users to recover EV charging station installation costs unless users are charging a state-owned EV.

(Reference [Connecticut General Statutes 4b-13a](#))

Electric Vehicle (EV) Charging Station Policies for Condominiums

Beginning October 1, 2022, condominium associations may not prohibit or restrict the installation or use of EV charging stations. These entities may put reasonable restrictions on EV charging stations, but the policies may not discourage or add obstacles to the use of EV charging stations. Reasonable restrictions may not increase the cost of the EV charging station or reduce its efficiency or performance. The EV charging station installer must obtain appropriate approvals from the common interest development association, comply with applicable architectural standards, engage a licensed installation contractor, provide a certificate of insurance, register the EV charging station with the association, meet health and building standards, and pay for the electricity usage, maintenance, and other costs associated with the EV charging station until it is removed by the homeowner.

(Reference [Connecticut General Statutes 47-68a and 47-261b](#))

Electric Vehicle (EV) Charging Station Policies for Rental Properties

Landlords must approve a tenant’s written request to install an EV charging station in their designated parking space. This requirement takes effect at different times based on the number of units a landlord owns, according to the following schedule:

Number of Units Owned	Effective Date
250 or more	October 1, 2022
At least 50 but no more than 250	October 1, 2023
Less than 50	October 1, 2024

All modifications and improvements must comply with federal, state, and local laws and all applicable zoning and land use requirements, covenants, conditions, and restrictions. The EV charging station installer is responsible for the cost of the installation, maintenance, repair, removal, or replacement of the equipment; electricity consumption; and any resulting damage to the EV charging station or surrounding area. A tenant's written request to modify the rental property to install an electric vehicle charging station shall indicate such tenant's consent to enter into a written agreement with the landlord that includes, but is not limited to, provisions regarding maintenance of a general liability insurance policy that covers an electric vehicle charging station at a tenant's dedicated parking space and to name the landlord as a named additional insured under the policy commencing with the date of approval for construction until the tenant forfeits possession of the dwelling unit to the landlord. The EV charging station must be designated as a fixture of the rental property if not removed upon the termination of the lease. Additional terms, conditions, or exclusions may apply.

(Reference [Connecticut General Statutes 47a-1 and 47a-13b](#))

Hydrogen and Electric Vehicle (EV) Rebate Program Administration

The Connecticut Department of Energy and Environmental Protection (DEEP) must further develop the [Connecticut Hydrogen and Electric Automobile Purchase Rebate](#) (CHEAPR) program by:

- Establishing an Advisory Board of various government and industry members to direct the allocation of CHEAPR funds;

- Providing at least 3 million dollars of rebates and vouchers to residents for the purchase or lease of new or pre-owned EV or fuel cell electric vehicle annually;
- Prioritizing the allocation of funds to residents of environmental justice communities;
- Beginning on June 20, 2024, reporting annually on the effectiveness of the CHEAPR program; and,
- Conducting outreach programs and marketing campaigns for the promotion of the program.

Note: On May 7th, 2024, Connecticut House Bill 5523 passed the House and Senate. The Bill Modifies the CHEAPR rebate amount for residents of environmental justice communities from up to 100% more than the standard rebate to at least 200% more than the standard rebate; requires certain proceeds from the Regional Greenhouse Gas Initiative to be used for the CHEAPR program (rather than the CHEAPR account) and other programs that support DEEP's engagement with environmental justice communities. (Reference [Connecticut General Statutes 22a-202](#))