EAN SUMMER RESEARCH INTERNSHIP • AUGUST 2026

Opportunities & Challenges for Affordable, Equitable Access to EV Charging in Vermont

Audrey Leida

Research directed by Christine Donovan, Energy Action Network (EAN) Senior Fellow

About Me

I am a May 2026 UVM graduate with a double major in Political Science and Environmental Studies. I interned with VPIRG on the *Protect Our Pollinators* campaign, which banned neonicotinoid pesticides on Vermont corn crops. I also interned with Representative Mollie Burke at the Vermont Statehouse, which gave me insight on transportation and energy policy.

These experiences, combined with my coursework, led me to my current role as a Summer Research Intern at Energy Action Network, where I researched EV charging infrastructure in Vermont.

Purpose & Key Research Questions

This project assesses the current state of EV charging infrastructure in Vermont and identifies strategies to expand access that is convenient, affordable, reliable, and equitable.

1. What is the current EV charging infrastructure for home, workplace, and public charging in Vermont and how does it compare to what's needed for widespread EV adoption?

2. What policies, programs, and investments have enabled development of today's charging network, and how viable are these approaches given changing funding conditions?

3. What gaps remain in equitable and affordable charging access, and what strategies or policy tools could address them?

Methodology: Report and data review · legislation and funding analysis · municipal buildout plans · ~12 stakeholder interviews (agencies, utilities, legislators, operators, housing organizations) · comparison with other states

Climate Goals Put Transportation Front & Center

40%

of Vermont's statewide GHG emissions come from transportation (2022)

94%

of transportation sector energy came from fossil fuels in 2023

2020 Global Warming Solutions Act required GHG emissions to be reduced to:

26%
below 2005 levels by 2025

40%
below 1990 levels by 2030

80%
below 1990 levels by 2050

Vermont's 2021 Climate Action Plan (updated in 2025) makes transportation electrification a core priority for meeting these legally binding targets. The plan recommended equitable EV charging deployment and long-term EV incentive funding.

EV Adoption is Growing, But is Still a Small Share of the Fleet

20,967
registered EVs in Vermont as of April 2026

+12%
increase in registered EVs over the previous year

3.5%
of Vermont's vehicles are EVs

80%
of all EV charging currently happens at home

- Consumer concern about reliable charging access is one of the key barriers to EV growth in Vermont.
- Recent elimination of federal EV purchase incentives is expected to slow the pace of future EV adoption.
- Public, workplace, and multiunit residential charging are critical for residents who can't reliably charge at home and for those travelling long-distances.

Against this backdrop, this project examines the current state of Vermont's electric vehicle charging infrastructure; the policies, programs, and investments that have contributed to its development; and remaining challenges and opportunities for ensuring affordable and equitable EV charging infrastructure in Vermont.

Three Types of Electric Vehicles

1

All-Electric (EV)

12,919 registered in VT (April 2026)

250 to 300-mile range; always runs in all-electric mode; requires plugging in to re-charge the battery.

2

Plug-In Hybrid (PHEV)

8,049 registered in VT (April 2026)

20 to 40-mile range in all-electric mode then converts to gasoline; requires plugging in to re-charge the battery.

3

Hybrid (HEV)

32,200 registered in VT (2025)

Gasoline vehicle with additional electric motor and battery pack. Battery charges through regenerative braking; does not need to be plugged in.

Three Levels of EV Charging Equipment

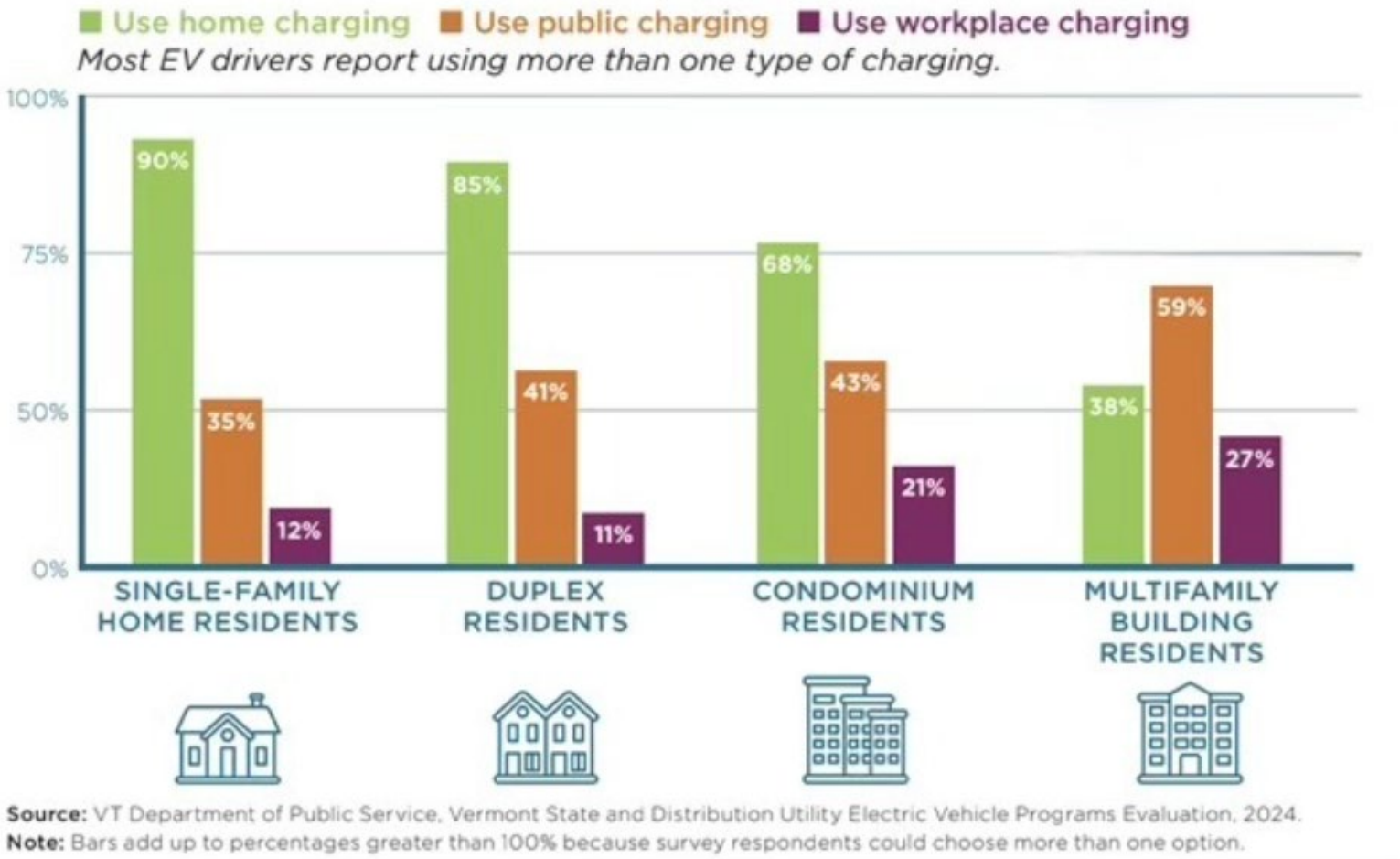
	Level 1	Level 2	Level 3 (DC Fast)
Power source	120V household outlet	208-240V upgraded outlet	Converts alternating current power into direct current
Charging speed	2 to 5-mile range/hour	20 to 30-mile range/hour	~80% charge in 20-40 minutes
Typical cost	No installation cost if outlet already exists	~$,1000 to be installed. (Could be higher depending on the home.)	Often $50,000+
Best use	Overnight home charging	Homes, workplaces, multiunit, hotels	Highway corridors, road trips

EVs use Level 1, 2, or DC fast charging. PHEVs generally use Level 1 or 2 only. HEVs never plug in.
The North American Charging Standard (NACS) is becoming the standard connector in North America.

Three Types of EV Charging

Charging Location	Description	Examples
Home Charging	Charging at a private residence, typically using Level 1 or Level 2 equipment	Single family homes, garages, apartment buildings
Workforce/Private Charging	Charging that is not available to the general public	Employee parking, government fleets, hotels for guests, select vehicle dealerships
Public Charging	Charging stations available for use by the general public	Municipal parking lots, shopping centers, highway corridors, downtowns

Where Vermonters Charge, by Dwelling Type



Source: VT Department of Public Service, Vermont State and Distribution Utility Electric Vehicle Programs Evaluation, 2024.
Note: Bars add up to percentages greater than 100% because survey respondents could choose more than one option.

The Access Gap

- Single-family, duplex, and condo residents mostly charge at home.
- Multiunit building residents rely more on public charging (59%) than on home charging (38%), unlike every other dwelling type.
- This disparity is a major equity issue identified during this project.

Home Charging: The Most Common and Affordable Option

Housing Type	Home Charging Access
Single-Family Home	**90%**
Duplex	**85%**
Condominium	**68%**
Multiunit Housing	**38%**

Home charging is ~2 to 3 times less expensive than public charging.

Of 988 surveyed EV owners, 86% reported home charging access.

57% of respondents used a Level 2 charger; 22% of respondents use Level 1.

Condominium residents (44%) were more likely than single family homeowners (21%) to rely on a Level 1 charger.

Utility Incentives for Home Charging

- Green Mountain Power: Free Level 2 charger, $650 towards installation, discounted charging rates
- Washington Electric Co-op: Free Level 2 charger, $10/month bill credit, up to $500 install
- Vermont Electric Co-op: Free charger (or $250 credit), $8/month bill credit
- Burlington Electric: Up to $900 off a Level 2 charger, reduced EV charging rates

The 30% federal tax credit (up to $1,000) for home charging equipment expired in June 2026 under the One Big Beautiful Bill Act

Multiunit Residential Charging: Vermont's Biggest Equity Gap

Apartment, multiunit, and condominium dwellers typically don't control their parking spaces, so they often can't install home charging as easily as single-family dwellers.

New Construction

- Energy codes (RBES/CBES) require EV-ready parking: typically ~2 chargers in a 20 to 30-unit building.
- September 2025 Governor Scott Executive Order lets developers use the weaker 2020 code (10% EV-ready) instead of the stronger 2024 code. This may slow down new EV charging supply.

Existing Multiunit homes

- 2022: Multiunit dwelling EV grant program for charging in affordable and market rate housing. It was appropriated $11M over 2 rounds of funding.
- 2023: Charge Vermont provided incentives for levels 1 and 2 charging for multiunit homes.
- Funded by federal America Rescue Plan Act, state appropriations, and a former state EV Infrastructure Fee. Now relying on one-time funds from the state.

Burlington Pole-Mounted Pilot

- 5 pole-mounted chargers let renters without off-street parking charge on neighborhood streets.
- ~60% of Burlington residents rent.
- Includes a reduced off-peak charging rate, mirroring BED's residential EV rate.

Workplace & Private Charging

Certain workplaces, hotels, car dealerships, multiunit buildings, and other establishments install private EV charging for use by employees, customers, etc. These stations are not available for the general public and are far less common than home and public charging. No comprehensive data is publicly available on workplace and private charging in Vermont at this time. Below is the limited information available from the US Department of Energy's Alternative Fuels Data Center (AFCD). It is likely to be incomplete.

	Level 1	Level 2	DC Fast	Total
Stations	1	22	1	**22**
Ports	2	96	1	**99**

2 stations offer both Level 1 and Level 2 charging, so station totals aren't a simple column sum.

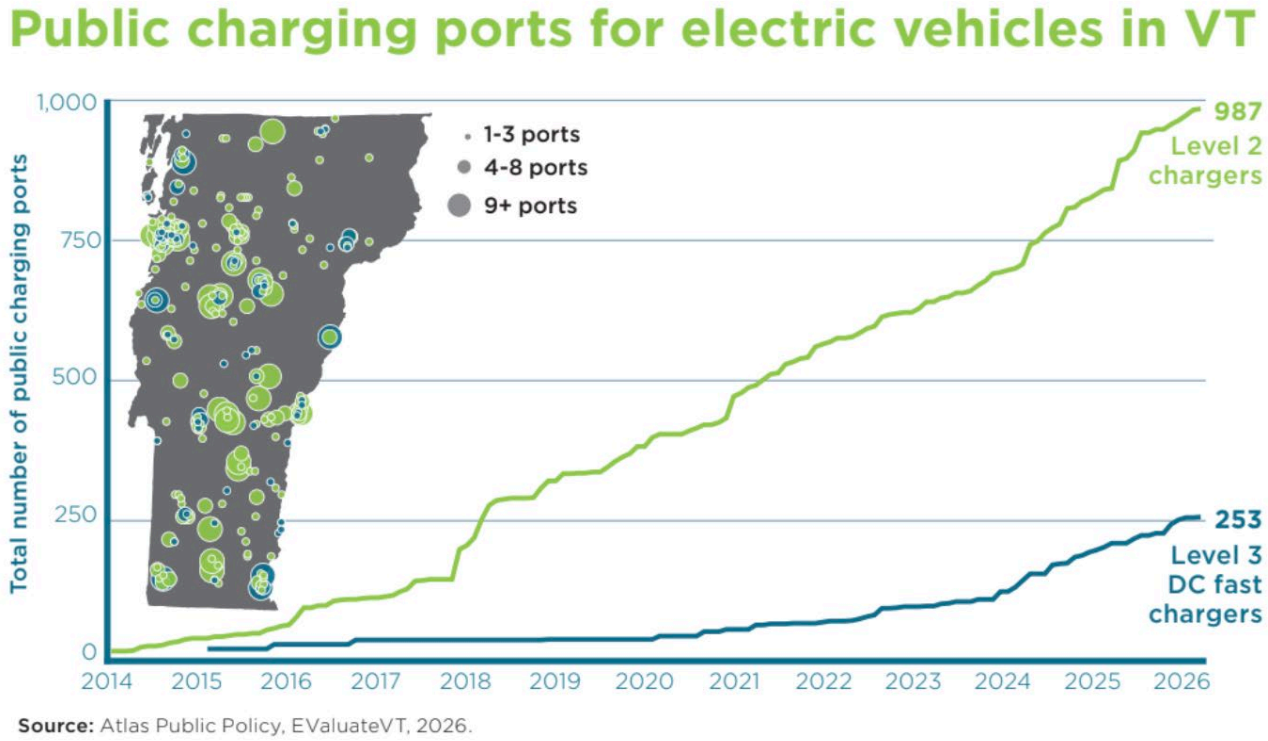
Overall, workplace and private charging remain less common than home and public charging but are growing as infrastructure develops statewide.

Public Charging: Vermont Leads the U.S. Per Capita

500+

public charging stations statewide which is the highest per capita of any U.S. state

	L1	L2	DC Fast	Total
Stations	6	446	106	**558**



Urban areas generally have far more public charging than rural areas, based on Alternative Fuels Data Center data collected July 2026.

Public Charging: Accessibility & Pricing

AFDC data (July 2026) is incomplete for many stations, but available data offers a snapshot of access conditions and pricing statewide.

Access Conditions

Customer/guest use only	**22 stations**
Credit card required	**13 stations**
Call-ahead required	**6 stations**
Tesla use only	**3 stations**
Temporarily unavailable	**9 stations**

Public Charging Prices

Free	**50 stations**
$0–$5 variable parking fee	**25 stations**
$0.20–$0.29 per kWh	**8 stations**
$0.30–$0.50 per kWh	**7 stations**
No Data	**468 stations**

Pricing data is not readily available for most public charging stations in Vermont. Based on the limited information available, the Vermont Agency of Agriculture Weights & Measures reports average public charging prices are:

$0.42 per kWh for DC fast charging and $0.27 per kWh for Level 1 and 2 charging.

Reliability, Maintenance, & Consumer Experience

Reliability

- 97% reliability and a 5-year operation and maintenance plan is the required uptime for state and NEVI-funded chargers

PlugShare snapshot (July 22, 2026) of 97 public DC fast chargers:

- 61 fully operational
- 21 hardware/software issue
- 9 partial failure (1 port down)
- 6 payment or access issues

Maintenance Observations

- Software (payments, network communication, session authorization) fails more than hardware.
- User error (damaged cables/connectors) is common.
- Most repairs take about one week; specialized parts can take longer.
- Winter-related failures have declined as chargers (temps range from -22°F to 131°F) and maintenance practices improve.

Consumer Experience

- Drivers cite frustration with needing multiple charging network apps to start a session.
- Especially hard in rural areas with limited cell service to load an app.
- Transition to NACS is expected to simplify the process, closer to a plug-and-charge experience.

Meeting 2030 EV Goals Will Require Major Buildout

126,000

plug-in EVs envisioned in Vermont by 2030 (Pathways Analysis Report 2.0)

82,363

total charging ports needed statewide to support that adoption

75,325

of those ports are needed for single-family residential charging alone

Charging Type	Est. Ports Needed
Single-Family Residential	75,325
Shared Private (Multiunit + Workplace)	3,368
Public Level 2	3,105
Public DC Fast Charging	565
Total	**82,363**

Based on these estimates, it will cost an additional $33.5 million to reach this goal.

Vermont's Public Fast-Charging Plan

Goal: Public fast charging within 3 miles of every interstate exit and every 25 miles along designated highway corridors.

29
priority locations identified by VTrans; 24+ stations expect funding in FY2022–2026

1 / 5 / 5
sites operational / under contract / additional awarded in first solicitation

I-89 / I-91
prioritized first; busiest traffic corridors (federal program intent)

- The Vermont Agency of Transportation (VTrans) has developed a very clear, aggressive, and effective public fast charging plan for Vermont and is in the early stages of implementing the plan, using federal funds from the National Electric Vehicle Initiative (NEVI). The location of the public fast chargers depends on what is proposed in competitive bids and identification of the most suitable host locations.
- Only after interstate corridor buildout is complete does NEVI funding support installing public fast charging in more rural locations. With that in mind, the ACCD directed some of its own funds to remote communities that NEVI funding was not likely to serve soon.

Municipal EV Readiness Plans: South Burlington & Winooski

South Burlington

12,000	EVs projected by 2035 (~55% of registered vehicles)
590 / 70	Public Level 2 / DC fast ports needed by 2035
88 / 19	Level 2 / DC fast ports in place today

Winooski

1,720	EVs projected by 2035 (~75% of registered vehicles)
130 / 13	Public Level 2 / DC fast ports needed by 2035
1 / 0	Level 2 / DC fast ports in place today

Both plans, developed by VEIC using National Renewable Energy Laboratory EVI-Pro Lite modeling, prioritize sites using housing density, employment centers, traffic, three-phase electrical service, and environmental justice indicators. Both plans are good examples of EV readiness best practices. However, neither plan has dedicated implementation funding yet. The plans are "aspirational" until external funding or public/private partnerships emerge.

Key Policies Driving EV Infrastructure in Vermont

Policy	Status	Impact
Vermont Transportation Bill Act 168, 2026	Enacted	• Establishes a mileage-based user fee for EVs • Requires publicly funded EV charging stations to provide standardized real-time data on operating status • Prohibits unreasonably restricting EV charger installation for condominiums (referred to as the “Right to Charge”)
Vermont Executive Order (06-25), September 2025	Issued	• Reverted new construction to weaker 2020 energy code • May reduce EV-ready parking in new buildings
Advanced Clean Cars II & Trucks Rules Adopted as Vermont Rules, 2023	Enforcement Paused	• Vermont Agency of Natural Resources adopted California’s rules to achieve 100% zero-emissions vehicles sales by 2035. • In 2025, Governor Scott ordered a pause to the rules in Vermont.
Vermont Transportation Bill Act 55, 2021	Enacted & Implemented	• Established EV-specific electric rates • Set statewide DC fast-charging planning goals along highways

One-Time, Short-Term EV Charging Funding

Funding Source	Amount	Use of Funds	Year
Vermont Department of Environmental Conservation	$200,000	• Used to launch Vermont Department of Housing and Community Development (DHCD) Electric Vehicle Supply Equipment grant program • Funded 15 downtown and village center projects and created a base for Vermont's public charging network	2014
Volkswagen Clean Air Act Settlement	$2,800,000	• DHCD administered these funds to expand public charging infrastructure across the state.	2017
Legislative Appropriation	$750,00	• Used to fund 6 DC fast charging sites	2020
Legislative Appropriation; EV Infrastructure Fee	$1,000,000	• Used to launch VTrans Charge Vermont Multiunit Grant Program • Resulted in 84 Level 2 charging ports at 37 sites • Serves 6,200 multiunit households	2021
Federal Highway Administration (NEVI)	$21,200,000	• Used for public fast charging within 3 miles of every interstate exit and every 25 miles along major state highways	2022-2026

Ongoing Funding for EV Charging in Vermont

EV Infrastructure Fee (2025)

Vermont currently charges an EV Infrastructure Fee for plug-in hybrid and battery electric vehicles to help offset declining gasoline tax revenues. Funds from the fee are directed to the Agency of Commerce and Community Development for building out EV charging infrastructure in Vermont.

- The fee is currently paid at the time of vehicle registration.
- Battery electric vehicles pay $89 per year.
- Plug-in hybrid electric vehicles pay $44.50 per year.

Table 2: **Estimated MBUF Fiscal Impacts ($ Million)**

	FY 2027	FY 2028	FY 2029
MBUF Revenue	$0 - 0.6	$1.1 - 1.3	$1.8 - 2.9
EV Infrastructure Fee Revenue Loss	$(0.6)	$(1.3)	$(1.5)
Net Revenue	**$(0.6) - 0**	**$(0.2) - 0**	**$0.3 - 1.2**

Milage Based-Fee (2027)

A new Mileage-Based User Fee was included in the most recent Vermont Transportation Bill. Once implemented, revenue from the new fee will help offset declining gasoline tax revenues. Funds obtained directly from EV owners will be deposited into the state's Transportation Fund and **will no longer be funding EV charging infrastructure in Vermont.**

- At 1.4 cents per mile, this would equate to an average Mileage-Based User Fee of $154 per year.
- It is projected the new fee will generate up to $600,000 in Fiscal Year 2027; $1.1 to $1.3M in 2028; and $1.8 to $2.9M in 2029, depending on EV miles driven.
- Initially, total revenue from the Mileage-Based User Fee may be less than total revenue would have been from the EV Infrastructure Fee. However, that is projected to no longer be the case starting in Fiscal Year 2029.

Key Programs & the Funding History Behind Them

NEVI Program	Federal (IIJA)	DC fast charging corridor buildout. 97% uptime and 5-yr O&M plan are required.
Charge Vermont — Multiunit Grant	State	Home charging access for renters & condo residents
Charge Vermont — Public/Workplace Grant	State	90-100% cost coverage; fully subscribed in Chittenden Co.
Charge Vermont — Public Attractions Grant	State	90-100% cost coverage; fully subscribed in Chittenden Co.
Carbon Reduction Program/Strategy	Federal (IIJA)	~$32M allocated to Vermont, ~$26.6M committed to date

Because of the switch to the Mileage Based User-Fee, there will be no source of funding for any of ACCD's Electric Vehicle Supply Equipment programs. Charge Vermont will spend down the funds it has, and with no new funding, these programs will sunset, likely within a few years.

What Other States Are Doing

California

CALeVIP funds public & multiunit charging in disadvantaged communities. CA also investing in medium/heavy-duty vehicle electrification for environmental justice purposes.

New York & Massachusetts

NY requires on-site price display at public chargers at the point of sale. MA has proposed similar legislation.

CA, CO, CT, IL, OR

Extend "Right to Charge" protections to apartment renters. Vermont's law currently covers only condo owners.

Colorado

A statewide retail delivery fee of $0.31 per order for any delivery by motor vehicle goes into the transportation fund supporting EV infrastructure.

Texas

Utility-managed charging programs offer discounted off-peak rates, easing costs for drivers and strain on the grid.

Multiple states

Piloting bidirectional (vehicle-to-grid) charging technology, letting EVs supply power back to homes or the grid.

Priorities for Affordable, Equitable EV Charging in Vermont

1. Expand incentives for EV charging equipment and for new and used EVs to help stimulate the EV market
2. Prioritize and expand public EV charging in rural and underserved areas
3. Expand Vermont's right-to-charge policy to all multiunit housing, not only condominiums
4. Support renter-focused innovation, like pole-mounted chargers
5. Ensure effective implementation of real-time EV charger status requirements
6. Require clear pricing signage at charging stations
7. Leverage managed charging & time-of-use rates for affordability and grid benefits
8. Prioritize electrification of heavy-duty vehicle fleets with short duty cycles to improve air quality
9. Create a state-based long-term funding source for EV charging infrastructure
10. Embed equity into every EV program design and funding decision

Thank You!

Audrey Leida
leidaaudrey12@gmail.com