

Policy Brief:

Electrifying Transportation Solutions



When creating solutions, they must address the decades long injustices that have been faced by BIPOC and low-income communities. This brief will look into specific policy solutions that move us toward a just and equitable transportation system. These solutions fall under three key frameworks:

- Increasing the amount of electrified transportation vehicles and transportation options available - getting more electric vehicles on the road but also electrifying public vehicle fleets, public transit, and trucks used in goods movement
- Making electrified transportation affordable and accessible - including personal electric vehicles, public transportation, and heavy duty trucks
- Ensuring adequate and accessible infrastructure - particularly ensure charging stations located in places accessible to low income communities and communities of color

THE Climate +
Clean Energy
**EQUITY
FUND**

Increasing the quantity of electrified transportation vehicles and transportation options



Enact Zero Emission Vehicle mandates: require auto manufacturers to sell zero emission vehicles (ZEV). **Research has shown that the states with the highest ZEV sales are those that include a mandate for sales.**¹

California has both a regulation requiring automakers to sell ZEV's,² as well as an Executive Order that set a goal of 5 million ZEVs on the roads by 2030 and 250,000 electric vehicle charging stations by 2025.³

Enact requirements for all public fleets (buses, maintenance vehicles, etc) to be zero emission:

ZEV mandates can focus on public agency fleets, requiring all publicly owned vehicles to be ZEV. New York City has pledged to convert its fleet of buses to fully electric by 2040.⁴ Converting to electric vehicles can save municipalities money; the City of Seattle has committed to transitioning its over 3,000 car fleet to electric by 2030, and determined it would save \$2 million over 10 years if it purchased 300 Nissan Leafs instead of hybrids for its passenger vehicles, and save more than \$3 million compared to gas vehicles.⁵

Electrifying school buses is a critical consideration: many school buses are diesel, directly exposing vulnerable children to diesel emissions. California recently awarded nearly \$70 million to state schools to replace more than 200 diesel school buses with new, all-electric school buses,⁶ and other states such as Massachusetts, New York, and Minnesota are expanding their electric school bus fleets.⁷

Pricing to disincentivize internal combustion cars and incentivize EV's: under "feebate" programs, higher emitting vehicles may be taxed or incur fees, while lower, non-emitting, or more efficient vehicles may be incentivized and can earn rebates. The two options are often combined in one program. Feebate programs are promoted as a revenue-neutral way to fund needed EV subsidies. They are seen as a way to better align markets and GHG goals; unless gas prices rise dramatically, consumers have no incentive to purchase more fuel-efficient cars.

Feebate programs can fill this gap.⁸ Boulder, CO and California are exploring feebate systems, and both France and Sweden have enacted feebate systems.⁹

Adopt Zero-Emission Mandates for New Trucks and Cargo Handling Equipment: regulations should mandate the transition of heavy-duty trucks and other freight-related equipment to zero-emission technologies. The initial mandates can vary depending on the lead times and assessment of availability. For example, forklifts and ground support equipment can be largely electrified now and do not need significant lead-times to require broad transformation to zero-emissions technologies, but heavy-duty trucks might need more time. California recently passed an **Advance Clean Truck Regulation**, which requires manufacturers with certain classes of truck to sell zero-emission trucks at an increasing percentage of their annual California sales from 2024 to 2030. The rule also requires large employers, including retailers, manufacturers, brokers and others to report information about shipments and shuttle services. Fleet owners, with 100 or more trucks, are required to report about their existing fleet operations.¹⁰

Joining the Zero Emission Vehicle Memorandum of Understanding: Nine states (California, Connecticut, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont) have **signed a memorandum of understanding (MOU) committing to coordinated action to get at least 3.3 million ZEVs on the roads by 2025.** The MOU identifies joint cooperative actions the signatory states will undertake, and additional actions that individual jurisdictions are considering, to build a robust market for ZEVs.¹¹

Proactive marketing: consumers need increased education and information on EV's to understand the benefits and dispel myths about EV costs and ranges. **State and municipal policymakers can initiate these campaigns.** Some state or local agencies with existing programs have also utilized the help of outside partners, such as community groups who have trusted relationships in low-income areas. For example, the City of Seattle contracted with a planning group to conduct a pilot project to "Connect, educate, and gather feedback from underserved community members, immigrants and refugee residents on their current transportation situation and the benefits of electric vehicles (EVs) in their communities"¹² Drive Electric Ohio, a statewide coalition of EV advocates, offers a program where residents and local businesses can meet up to learn about and test drive EVs, which they have found to be the most effective way to overcome people's misconceptions about EV's.¹³

Making electrified transportation affordable and accessible



Financial support and incentives to expand access to electric vehicles for low-income people:

while EV's are generally expected to be cost-competitive by 2025,¹⁴ financial support is needed both for the wider market but in particular to ensure low-income communities can afford EV's. Financial incentives for EV's fall into several categories:

Point-of-sale rebate: Government offers rebate to reduce the vehicle purchase price at the point of sale. Dealers fill out rebate applications to obtain the incentive.

Loan programs: These make loans to individuals with low credit scores or no credit history. Loan loss reserve programs are typically funded through governments and require the beneficiary of the program (e.g. low-income consumer interested in purchasing an EV) to go through an application process.¹⁶

Post-purchase rebate: Consumer applies for rebate after purchasing the EV; government mails consumer a check to refund part of vehicle

Tax Exemption: Income tax credit applied against state or local income tax, or other one-time vehicle tax reductions, such as exemptions from sales or excise taxes.¹⁵

While post-purchase rebates and tax exemptions are policy options, they are inequitable and do not help individuals who can't afford the upfront costs of an EV or undocumented folks.

Point of sale rebates are the most effective for low-income communities. Multiple states have point of sale rebates; The Delaware Clean Vehicle Rebate program offers point of purchase rebates of \$3,500 for consumers who purchase through participating dealerships. Colorado's alternative fuel tax credit of up to \$5,000 for a battery electric vehicle can be claimed by financing institutions at the point of purchase. New Jersey exempts EVs from the state's sales tax, which provides thousands in savings upfront.

California's newly created Clean Cars 4 All program does not provide a point of sale rebate but offers up to \$9,500 as grants for "low-income members of communities disproportionately affected by air pollution" to purchase clean personal vehicles or for use on public transit.¹⁸

Increase public funding for zero-emission goods movement:

Grants and funding can be made to support electrification of both trucking and shipping. California created a billion-dollar Proposition 1B Goods Movement Emission Reduction Program aimed at reducing emissions and health risks from freight operations in priority trade corridors. Under this program, the state agency makes grants available to local agencies (e.g., seaports and air districts) for specific types of projects like truck programs, ships at berth, cargo-handling equipment, locomotives, and harbor craft. Local agencies then offer grants via a competitive process to diesel equipment owners to co-fund the upgrade of their equipment to cleaner technologies ahead of regulation. It should be noted, however, that financing for zero emission trucks and ports must be coupled with clear mandates to electrify.

Expand clean, shared mobility programs:

Carsharing, ridesharing, and public bikesharing can reduce road congestion and air pollution, reduce personal vehicle ownership and associated costs, reduce parking demand, repurpose valuable land dedicated to parking spaces, enhance mobility for those who do not own a car, and increase use of alternative modes of transportation like public transit, walking, or biking. State policy can support these programs in a wide variety of ways: it can include dedicated funding for clean shared transportation programs, including getting new programs off the ground or implementing local policies such as free parking for car and ride sharing vehicles. State policy can pass new requirements that cities must include shared transportation infrastructure in new, multi-unit housing and in planning for parking.¹⁹ Examples of innovative, clean ridesharing programs include the EV Community Mobility Project, a collaboration between Xcel Energy, St. Paul, Minneapolis and Hourcar that received a \$4 million federal grant. It will create 70 hubs that will house 150 electric cars and charging infrastructure, with many of the hubs in low-income neighborhoods and areas with high minority populations.²⁰

Ensuring adequate and accessible electrified transportation infrastructure



Direct investments in vehicle electrification infrastructure, starting with highly impacted communities: utilities can be required to make large-scale investments in EV infrastructure. In California, per the requirements of the Renewable Portfolio Standard, utilities were ordered to propose electrification projects and programs, resulting in \$738 million dollar investment in electric transportation infrastructure programs, with a focus on investments in low-income communities impacted by pollution. **A significant portion of the investments will focus on electrifying heavy and medium duty trucks, which are polluting environmental justice communities.** Pilot projects can also be effective to test new approaches to electrifying freight; In California, the state air board contributed \$41 million to a test program at the port of Los Angeles for a mile of "eHighway." Two years ago, the port set aside a mile of highway with an overhead charging system to refuel prototype electric trucks.²¹

Proactive utility charging rates and programs: Through rate design, approved by state Public Utility Commissions, electric utilities can influence charging behavior, and in turn, minimize costs to operate the distribution system while maximizing economic and environmental benefits of EVs. In states with high solar or wind generation, utilities may also be able to manage load in a way that coordinates peak renewable generation with increased demand from EV charging, using excess power to support this new load. Utilities can also offer a reward or cash incentive program that would provide monthly rewards in exchange for off-peak or controlled charging, analogous to existing demand response programs.²²

Financial credits for charging infrastructure: States and local governments can provide direct financial incentives for infrastructure investment. Governments can offer a tax credit or rebate for the equipment and labor costs associated with the installation of both public and private EV charging stations. For example, the District of Columbia offers a 50% credit against income taxes for installation of electric vehicle infrastructure,²³ and Charge Ahead Colorado will fund 80% of the cost of a charging station up to a certain amount.²⁴ Policymakers may also wish to consider how financial credits can be designed such that non-owners (e.g., residents of multi-unit dwellings) can take advantage of credits.²⁵ **Charging infrastructure can be prioritized for installation at workplaces, and particularly in multi-family homes and in low-income communities to ensure equitable access.**

Building code upgrades to include charging infrastructure: EV-ready building codes require new residential and commercial construction projects to include either a set number of installed EV charging stations and/or the electrical infrastructure (panel capacity, conduit, and pre-wiring) to encourage the easy and affordable installation of future charging stations. **The cost to install an EV charging station is significantly less expensive when infrastructure is provided at the time of construction as opposed to a retrofit.**²⁶ California's CALGreen building code includes an EV readiness measure requiring 6% of parking spaces in commercial buildings and 3% in multi-unit dwellings (likely increasing to 10% effective 2020) be electrified, saving up to \$8,000 per parking space in multi-unit dwellings.²⁷ Atlanta requires all new residential homes and public parking facilities to accommodate EVs and 20% of the spaces in all new commercial and multi-family parking structures to be plug-in ready. In Boston, 5% of parking citywide must be equipped with EV chargers, and 10% be EV-ready in new construction projects and all projects in South Boston and downtown parking freeze zones, according to the City of Boston's EV policy.²⁸



Improve and streamline permitting for EV

charging stations: Ensuring that people can easily obtain permits for EV charging installations is critical. The City of Chicago has a streamlined permitting process to install EV charging infrastructure.²⁹ The California Governor’s Office of Business and Economic Development is releasing a guidebook in 2019 to help local jurisdictions improve permitting.³⁰

Requirements and Zoning for New

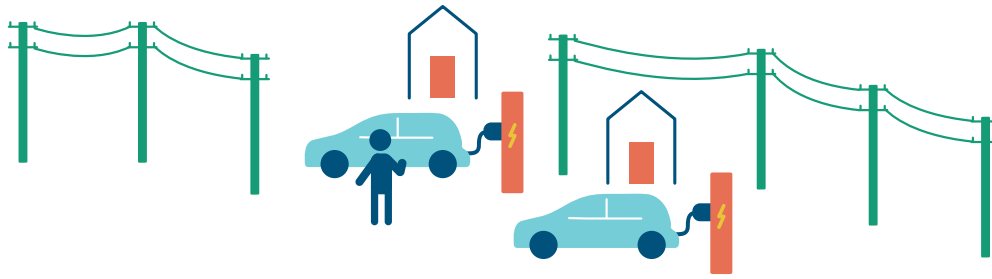
Developments: States and local governments can also require that new residential and/or commercial development include EV infrastructure. For example, Mountlake Terrace, Washington, a suburb of Seattle, requires that all new development larger than 10,000 square feet that includes parking equip a certain number of parking spots with EV charging stations. For qualifying multi-household residential units, at least 10% of parking spaces must have charging stations. Zoning or building code programs like this can help to target infrastructure for specific communities, such as low- or moderate income or disadvantaged communities. All new construction of multi-family and commercial buildings with parking structures can be required to include sufficient electrical infrastructure to support EV charging.

Policymakers at the state and county level can also ensure that zoning laws allow for or require local governments to make investments in EV infrastructure or to incorporate EV requirements into their local regulations.



Los Angeles creates good jobs while electrifying public bus fleet

Los Angeles has the third largest transit system in the country. **The Metropolitan Transit Agency has committed to transition the fleet to all electric by 2030.**³¹ Concurrently, local organizing efforts were able to ensure that one of the largest electric bus producers in the nation, BYD, has a community benefits agreement that creates pathways into the manufacturing industry for underrepresented and underserved populations in Los Angeles County. BYD committed to a **goal of recruiting and hiring 40% of its workers at the regional manufacturing plant from populations facing significant barriers to employment, such as veterans and returning citizens.**³³



Grid Integration and Electric Vehicles

Careful planning within electric transportation has the potential to strengthen the overall electric grid and support increased inclusion of renewable energy. If integrated into the electric grid well, EVs can provide grid reliability services, such as local power services, energy storage, and a foundation for resiliency measures such as microgrids. For example, if planned using “managed charging” capabilities, EV’s in combination with smart charging infrastructure, can provide value through electric load management and reduce EV charging costs, and scientists are even exploring vehicle to grid communication systems that can reduce peak-power demands on the overall grid. EVs can also act as grid-connected batteries, helping to integrate intermittent renewable resources. State policies can support enhanced grid integration by initiating efforts across regulatory agencies to study and map opportunities for vehicle grid integration. For example, in California, the California

Independent System Operator Corporation (CAISO), in coordination with the Governor’s Office, the California Energy Commission, the California Public Utilities Commission and the California Air Resources Board, created a “VGI Roadmap” to identify creative approaches that could lead to EV charging behavior that is beneficial (or at least not adverse) to grid reliability, as well as promote aggregation of EV resources in order to allow those resources to be bid into the CAISO wholesale market to provide grid services. The California Air Resources Board has also supported pilot projects to explore vehicle-grid integration opportunities. A vehicle-to-grid demonstration project at Los Angeles Air Force Base uses a fleet of 34 light-and medium- duty plug-in electric and hybrid vehicles and their bi-directional charging stations to not only charge their vehicles but also provide grid services back to the system, earning the revenue for the Base.¹¹

1. https://www.seattle.gov/Documents/Departments/Environment/ClimateChange/Drive_Clean_Seattle_2017_Report.pdf, pg 15
2. https://www.arb.ca.gov/msprog/zevprog/factsheets/zev_regulation_factsheet_082418.pdf
3. <http://www.cpuc.ca.gov/zev/>
4. <https://ny.curbed.com/2019/5/6/18533462/mta-retires-diesel-buses-rapid-transit-series-all-electric-fleet>
5. <https://www.sierraclub.org/sites/www.sierraclub.org/files/blog/EV%20Policy%20Toolkit.pdf>, pg 3
6. <https://electrek.co/2019/07/17/california-electric-school-buses/>
7. <https://uspig.org/reports/usp/paying-electric-buses>
8. <https://escholarship.org/uc/item/3vs740q2>
9. <https://theicct.org/blog/staff/swedens-fee-bate-system-20181008>
10. <https://ww2.arb.ca.gov/resources/fact-sheets/advanced-clean-trucks-act-fact-sheet>
11. <https://www.zevstates.us/>
12. <https://forthmobility.org/storage/app/media/Documents/seattleevoutreachecossfinalreport-1.pdf>
13. <https://www.citylab.com/transportation/2018/10/where-americas-charge-towards-electric-vehicles-stands-today/572857/>
14. <https://e360.yale.edu/digest/electric-cars-could-be-as-affordable-as-conventional-vehicles-in-just-three-years>
15. https://www.mjbradley.com/sites/default/files/mjba_transportation_toolkit.pdf
16. <http://greenlining.org/publications-resources/electric-vehicles-for-all/#tab3-section2>
17. <https://blog.ucsusa.org/daniel-gatti/electric-vehicle-rebates-point-of-purchase>
18. <https://sanfrancisco.cbslocal.com/2019/05/07/clean-vehicles-for-all-program-aims-to-help-low-income-bay-area-residents-replace-older-vehicles/>
19. https://neweconomy.net/sites/default/files/resources/183-e649186fed7d67a19a8585dbcf999b9_policies_for_shareable_cities_selc_9_9_13.pdf
20. <https://www.govtech.com/fs/transportation/Hennepin-County-Minn-Commits-to-Boosting-Electric-Fleet.html>
21. <https://calmatters.org/projects/clean-freight-traffic-is-elusive-as-california-rolls-toward-zero-emissions/>
22. https://www.mjbradley.com/sites/default/files/mjba_transportation_toolkit.pdf
23. <https://code.dccouncil.us/dc/council/code/sections/47-1806.12.html>
24. <https://cleanairfleets.org/programs/charge-ahead-colorado>
25. https://www.mjbradley.com/sites/default/files/mjba_transportation_toolkit.pdf
26. <https://www.goecity.org/ev-charging-access-infrastructure>
27. <https://www.forbes.com/sites/energyinnovation/2019/01/02/4-u-s-electric-vehicle-trends-to-watch-in-2019/#30e737425a3c>
28. <https://www.citylab.com/transportation/2018/10/where-americas-charge-towards-electric-vehicles-stands-today/572857/>
29. https://www.chicago.gov/city/en/progs/env/drive_electric_chicago.html
30. <https://www.forbes.com/sites/energyinnovation/2019/01/02/4-u-s-electric-vehicle-trends-to-watch-in-2019/#30e737425a3c>
31. https://www.mjbradley.com/sites/default/files/mjba_transportation_toolkit.pdf
32. <https://100percentelectricbuses.wordpress.com/coalition/>
33. <https://jobstomoveamerica.org/labor-community-groups-sign-landmark-agreement-electric-bus-manufacturer-byd-los-angeles/>