AchiEVe: Model State & Local Policies to Accelerate Electric Vehicle Adoption

Presented by Sierra Club and Plug In America

POLICY TOOLKIT



Version 2.0 June 2018

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ACKNOWLEDGMENTS

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INTRODUCTION

The rise of plug-in electric vehicles (EVs) and the fall of gas engines is a matter of when—not if. This toolkit is designed to accelerate the switch to these clean vehicles in an effective, sustainable, and equitable way. EVs are fast, technologically advanced, quiet, and much lower in emissions than conventional vehicles, even when factoring in the emissions from the electricity used to charge them.

As we shift to more renewable sources of power, EVs become even cleaner over time. This is great news for public health and climate protection. Thanks to smart and supportive policies that have helped accelerate the widespread adoption of EVs in the United States, EVs have moved from a progressive fad to an industry-wide inevitability. In 2017, EV sales were up 26 percent in the U.S. compared to the previous year, making it the best year for EV sales so far. Still, to keep things in context, EVs at present are under 2 percent of new auto sales. EVs are no doubt on the rise, but could use a lot of acceleration. That's where this Toolkit comes in.

By comparing state and local EV initiatives to market penetration, we've learned some important lessons about successful policies and programs that boost EV sales. People often ask what the best policies are that incentivize people to make the switch to EVs, so we have catalogued model EV policies at the state, local, and utility levels in a range of categories.

We share below some of the most effective policies driving adoption of these clean vehicles today, with links to specific templates and real-world examples. A template for these policies under each section is linked to be downloaded and customized. We encourage public officials and EV advocates to tailor model policies to best fit the precise needs of your particular state or community and work with allies to put them into effect where you live.

As the EV market and EV policy evolves, this toolkit will be updated to reflect the best practices in EV policy.

ACRONYMS

AFV: Alternative Fueled Vehicle

CARB: California Air Resources Board

BEV: Battery Electric Vehicle

EV: Electric Vehicle

EVSE: Electric Vehicle Supply Equipment

HEV: Hybrid Electric Vehicle

HOV: High Occupancy Vehicle

NGO: Non Government Organization

MUD: Multi-Unit Dwelling

PEV: Plug-in Electric Vehicle

PHEV: Plug-in Hybrid Electric Vehicle

VW: Volkswagen

ZEB: Zero Emission Bus

ZEV: Zero Emission Vehicle



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Expanding Perks And Incentives

VEHICLE REBATES AND TAX CREDITS

The adoption of financial incentives for EVs have a significant effect on total EV sales, particularly among lower and middle income consumers.

Vehicle Purchase Rebate Template

SAMPLE STATES WITH A VEHICLE PURCHASE OR LEASE REBATES OR TAX CREDITS:

California: Clean Vehicle Rebate Project (CVRP) offers rebates for the purchase or lease of qualified new light-duty EVs and PHEVs on a first-come, first-served basis to individuals, business owners, and government entities of up to $2,500. For individuals with low and moderate incomes, rebates are increased by $2,000, for a total rebate amount of up to $4,500. (Reference: California Health and Safety Code 44274 and 44258)

The Public Fleet Pilot Project (Statewide): Rebate of up to $7,000 for the purchase of BEVs and $5,000 for PHEVs; available to state and local entities (Reference: California Health and Safety Code 44274 and 44258)

Connecticut: The Hydrogen and Electric Automobile Purchase Rebate Program (CHEAPR) offers rebates up to $5,000 for the purchase or lease of a fuel cell electric vehicle, $3,000 for battery electric vehicle, and a $300 dealer incentive.

Delaware: The Delaware Clean Vehicle Rebate Program provides up to $3,500 for the purchase, lease or conversion of a BEV and $1,500 for a PHEVs; available to businesses, individuals and government.

Massachusetts: MOR-EV: Rebates of up to $2,500 for the purchase or lease of an EV; available to residents.

New York: Drive Clean Rebate offers up to $2,000 for the purchase or lease or an EV with a battery capacity of at least 4 kilowatt-hours (kWh).

Oregon: Zero Emission Vehicle Rebate Program are available for purchases of new electric vehicles subject to certain criteria established by DEQ. Rebates will be $1,250 - $2,500 for certain EVs with battery capacities of 10 kWh or greater, and $750 - $1,500 for EVs with battery capacities less than 10 kWh. Additional rebates of $1,250 - $2,500 are offered for low- and moderate-income households buying or leasing new or used zero-emission vehicles and are offered for households that voluntarily retire or scrap vehicles that are at least twenty years old.

Colorado: Tax credits are available for purchase, lease, and conversion of light, medium, and heavy duty EVs and PHEVs. There is no limit to the number of qualifying vehicles for which a taxpayer can claim a credit. The credit is calculated as a percentage of the net cost incurred in the purchase, lease or conversion of the qualifying vehicle. For the purchase of a new vehicle, as well as the vehicle's battery capacity divided by 100.

Maryland: An individual can be eligible for a one-time excise tax credit, up to $3,000, when purchasing or leasing a qualifying electric vehicle through June 30, 2020. Business entities may also qualify for the tax credit on up to ten vehicles.



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SALES TAX EXEMPTIONS

Financial incentives for EVs help to move the market from the early-adopter stage to the mass-market phase. A sales-tax exemption for an EV works to stimulate consumer demand for EVs. For auto dealers, a sales-tax exemption is easy to explain and administer, with no additional steps to take on behalf of the consumer. For the consumer, a sales-tax exemption requires no eligibility requirement and doesn't require the consumer to provide additional cash or a higher loan upfront.

Sales Tax Exemption Template

New Jersey: A sales-tax exemption is available for the purchase or lease of BEVs. See statute: N.J.S.A. 54:32B-8.55 Sales Tax Exemption - Zero Emission Vehicle

HOV LANE ACCESS

Programs that allow EVs to use highway lanes designated for high-occupancy vehicles (HOV lanes) are an important element in the suite of policies that promote vehicle electrification. For many drivers, HOV lane access can save drivers an hour or more a day from reduced commute times, thus serving as a powerful driver of EV purchases.

HOV Lane Access Template

Arizona: BEVs qualify for HOV lanes at any time, regardless of number of passengers, as long as the BEV has a special license plate. See statute: 28-2416. Alternative fuel vehicle special plates; stickers; use of high occupancy vehicle lanes; definition.

Florida: PEVs are eligible for the HOV lane with Florida's HOV decal. Use of the I-95 express lane requires another specific decal from South Florida Commuter Services (SFCS). Statute: 316.0741. High Occupancy-Vehicle Lanes.

Georgia: PEVs are eligible for the HOV lane with the correct license plate displayed. See statute: Georgia Code 32-9-4, 40-2-86.1, and 40-6-54

Hawaii: PEVs are eligible for the HOV lane with the correct license plate displayed. See statute: SB 2746 CD-1 A Bill for an Act Relating to Electric Vehicles.

New Jersey: PEVs are eligible for the HOV lanes on the NJ Turnpike. See statute: New Jersey Administrative Code 19:9-1.24

Tennessee: PEVs are eligible for the HOV lane, but must apply for the Smart Pass program and display the decal in the lower right side of the rear window. See statute: Public Chapter 1121 and Tennessee Code Annotated 55-8-188



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Electrifying Vehicle Fleets

Advocating for electrification of public fleets is an effective way to put the importance of prioritizing clean transportation into the public spotlight. EVs save taxpayers money and are good for public health, as shown by recent analysis by the City of Seattle and the state of Washington. Because electricity is roughly 1/4 the cost of gasoline per mile, and because EVs require much less service, the City of Seattle 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.

Some states have created policies that require a fixed percentage or growing share of state-government fleet vehicles be electric, hybrid, and/or "alternative fuel vehicles" (AFVs). The ideal vehicle-fleet mandate programs require all battery electric vehicles (BEVs) or at least plug-in vehicles.

GOVERNMENT FLEET MANDATES

Rhode Island: Executive Order 15-17 requires at least 75% of state motor vehicles to be Alternative Fuel Vehicles (AFVs), and the remaining 25% must be Hybrid Electric Vehicles (HEVs) to the greatest extent possible. By 2025, 25% of state motor vehicles must be Zero Emission Vehicles (ZEVs).

New York: The New York State Energy Research and Development Authority (NYSERDA) provides vouchers to public, private and nonprofit fleets for the purchase or lease of all-electric vehicles operating 70% of the time.

Massachusetts: Newly purchased state fleet vehicles must consist of HEVs or AFVs to the maximum extent feasible. HEVs and AFVs must be acquired at a rate of at least 5% annually for all new motor vehicle purchases so that not less than 50% of state vehicles will be HEVs or AFVs by 2018. (Reference Massachusetts General Laws Chapter 7, Section 9A; Executive Order 388, 1996)

TRANSIT BUS FLEET UPGRADES

Some transit agencies are commiting to switch from fossil-fuel transit bus fleets to fully electric buses. Electric buses tend to cost more to buy at first, but cost less over time because of reduced maintenance and fuel costs. Studies show electric buses are up to 8 times more efficient than CNG buses. Full environmental and economic benefits of electric buses are here.

State Fleet Mandate Template

Seattle, Washington: The King County Metro Transit committed to acquiring 120 all-electric transit buses by 2020 and has indicated plans to fully electrify its transit fleet. The first 8 electric buses will be in operation by the end of 2018 with 12 more in operation in 2019. In addition to adopting electric buses, Metro Transit also completed a report detailing the feasibility of transiting to a completely zero-emission carbon-neutral bus fleet by 2034. The report prioritizes equitable distribution of benefits and avoids negative impacts on disadvantaged communities in the Metro area.

Washington, D.C.: The District Department of Transportation (DDOT) has adopted 14 electric buses, and the Director of DDOT says a fully electric bus fleet is being considered. The Proterra E2 Catalyst Buses are manufactured in the U.S., and bring clean, quiet, zero-emission transportation to more than 4.8 million annual



PHOTO CREDIT: MARY LUNETTA

riders and 189 Circulator drivers across six district routes. Additionally, each bus is equipped with WiFi and a pedestrian safety alert system.

Los Angeles and southern California: Along with deploying 95 electric buses into its fleet, L.A. County Metro has committed to a fully 100% electric transit bus fleet by 2030, replacing 2,200 CNG powered-buses. The 2017 council motion can be found here. Transit agencies in Antelope Valley, LA City, and San Bernardino County, CA have also committed to all electric buses by at least 2030.

USING VW SETTLEMENT FUNDS FOR ELECTRIC BUS ADOPTION

Between 2006 and 2015, Volkswagen (VW) cheated on emissions tests on 500,000 of its diesel cars in the U.S. that spewed up to 40 times the legal limit of pollution while driving. These vehicles contributed to high levels of smog known to cause respiratory problems such as asthma and other health problems. Under the VW settlement terms, the automaker must pay more than $15 billion in fines and clean air payments, including $2.7 billion in funds to all 50 states for investments in clean transportation programs to help mitigate the excess pollution from their cheating vehicles. The VW settlement provides a well-funded springboard for states to, among other things, replace fossil-fueled transit and school buses with clean, zero emission buses.

Here is a link to more information and advocacy resources from the Sierra Club to help people advocate for wise use of VW settlement funds. Below are some examples of model mitigation plans that incorporate investments in zero emission bus fleets.

Atlanta, Georgia: plans to use part of the state's VW funds to purchase electric transit buses for the State Road and Tollway Authority's (SRTA) Xpress system, as well as electric terminal-to-terminal transit buses serving Hartsfield-Jackson Atlanta International Airport (HJA).

Rhode Island: has announced an impressive 75 percent of the state's $14.3 million to be spent on replacing twenty diesel-powered transit buses with electric zero emission buses, and will be considering environmental justice principles when deciding the routes of these new buses.

Ohio: will allocate $3 million toward an electric school bus pilot project to demonstrate the viability of battery-electric school bus fleet technology that produces no direct emissions under all possible operational conditions.



PHOTO CREDIT: MARY LUNETTA



Expanding Charging Access

Owners of gas-guzzling vehicles have many options when it comes to gas stations at which to fuel, but for people who drive electric cars, fueling happens differently—whether it's at home, at work, or on the go. That's why, as the growth of electric mobility continues to gain momentum, the need for large-scale charging networks is becoming even more pressing. As there are many stakeholders and policy pathways on the journey to expand EV charging and remove institutional barriers, there are many unique needs and challenges facing our communities when it comes to charging our EVs. Below are several options to address them.

Building Codes for EVs Template

EVSE Installation at MUDs Template

Right of Way Charging Template

EV-READY WIRING CODES AND ORDINANCES

Some cities are announcing commitments, adopting building codes and passing ordinances requiring new homes, buildings and parking structures be "EV ready" — having the conduit and wiring in place to accommodate EV charging. It is much harder and more expensive to retrofit existing buildings. A report conducted by the California Air Resources Board in 2015 describes ways to avoid retrofitting costs; these after-the-fact costs can range from $3,750 to $6,975. Instead, installing EV-friendly wiring at the time of construction can be 64-75% less expensive than post-construction installations, according to some studies.

Atlanta, Georgia: The City Council passed ordinance 17-0-1654, which will require all new residential homes and public parking facilities to accommodate EVs. The

ordinance requires 20 percent of the spaces in all new commercial and multi-family parking structures be EV-ready and requires all new development of residential homes be equipped with the infrastructure needed to install EV charging stations, such as conduit, wiring and electrical capacity.

Washington: The Washington Administrative Code Title 51 - WAC 51-50-0427 requires 5% of parking spaces in new buildings to be equipped with EV charging infrastructure in compliance with sections 427.3, 427.4 and 427.5. If the calculated parking results in a fraction, the applicant must round-up to the next whole number. This statue excludes occupancies with fewer than 20 parking spots. The electrical room must be designed to accommodate 20% of all parking spaces with 208/240 V 40-amp.

California: Building codes for EVs can be found in the California Green Building Standards Code: 5.106.5.3 and A5.106.5.3 Electric vehicle (EV) charging. The required number of parking spots and EV chargers varies according to the number of available spots within the parking lot. There are also stricter voluntary standards under "Tier 1" and "Tier 2" for installing EVSE parking. This standard applies to new buildings in California designated as "green" buildings.

Palo Alto, California: Building codes for EVs can be found here. The ordinance requires all new single-family residences and commercial buildings (including multi-family dwellings, mixed-use facilities, and hotels) be EV-ready. The non-residential EV additions to the ordinance require a three-tier combination of EVSE, EVSE-ready outlets and circuitry for new multi-family and commercial construction. In terms of retrofitting costs, one study found that electrifying existing single-family homes can cost anywhere from $2,500 to $5,000, while associated costs (such as those for conduit and wiring) can add an additional $1,000 to $2,000.

San Francisco, California: Beginning January 2018, the Electric Vehicle Readiness Ordinance will require all new residential and commercial buildings to configure 10% of parking spaces to be "turnkey ready" for an EV charger installation, and an additional 10% to be "EV flexible" for potential charger installations and other upgrades. The remaining 80% of parking spaces will be "EV capable," ensuring conduit is run in the hardest-to-reach areas of a parking garage to avoid future cost barriers.



MULTI-UNIT DWELLINGS (MUDS)

EV Drivers who live in multi-unit dwellings (MUDs) like apartment buildings should not necessarily give up hope of driving and charging EVs at or near home. Policies removing restrictions for EVSE installation at MUDs are on the rise, which is crucial to further EV adoption by this demographic.

California: A MUD, such as a community apartment, condominium or cooperative development, may not prohibit or restrict the installation or use of EVSE in a homeowner's designated parking space. If installation in the homeowner's designated parking space is not possible, the homeowner may, with authorization, add EVSE in a common area for their use. Specifically, the homeowner must obtain appropriate approvals from the MUD owner or association,comply with applicable architectural standards, engage a licensed installation contractor, provide a certificate of insurance, and pay for the electricity usage associated with the EVSE. If the EVSE is installed in a common area for use by all members of the association, the common-interest development must develop terms for use of the EVSE. (Reference California Civil Code 4745 and 6713)

STREETLIGHT AND POWER POLE CHARGING ACCESS

One option for curbside EV charging involves using the existing electrical infrastructure provided through street lights and power poles. Any LED streetlight utilizes less electricity than what the streetlight was originally equipped for, and thus have the capacity to host EV charging stations. These streetlights can host Level 1 or possibly Level 2 EV charging stations, depending on

power supplied to the streetlight and the capacity on the streetlight electric circuit.

Seattle, Washington: The City of Seattle, the Woodland Park Zoo, and ReachNow installed 20 Light & Charge systems at the Woodland Park Zoo. The Light & Charge system transforms existing street lights and parking lot lights into host sites for EV charging stations as part of the smart city network.

Lancaster, California: The City of Lancaster launched the BLVD Streetlight EV Charging demonstration in 2017. The project integrates EV charging stations into 5 street lights along the popular downtown boulevard.

Los Angeles, California: The city has installed EV chargers on 82 street lights across the city, and is installing chargers on utility poles, as well.

RIGHT-OF-WAY CHARGING ON PUBLIC SIDEWALKS

New Orleans, Louisiana: The City Council unanimously voted to allow EV owners to apply for permits to install chargers for personal, non-commercial use next to the curb between their home and the street—a necessity in a city where many homes do not have driveways. Some of the requirements include how much space must remain on the sidewalk for pedestrians to pass and how close the devices can be to fire hydrants. A permit is $300 with a yearly renewal fee of $100. The City Ordinance is here.

Seattle, Washington: The Electric Vehicle Charging in the Public Right of Way (EVCROW) Program outlines right-of-way charging policies that have been adopted city-wide to prioritize allowing EV access to curbside charging spaces in urban centers and villages for short term and shared-use.



PROTECTING EV-DESIGNATED PARKING SPOTS

Getting "ICE'd" means arriving at an EV charging station only to find a car with an internal combustion engine (ICE) parked in it, thus preventing EV drivers from charging their vehicles. Someone's plan to charge up while shopping for groceries could be thwarted, and it may become hard to complete the rest of the journey. Some jurisdictions are realizing that preserving areas for EV drivers to charge their cars is an important concern and have begun implementing parking regulations for public charging stations to prevent EV drivers from getting ICE'd.

Arizona: Pursuant to section 28-2416, a person who is found responsible for parking a gas-powered motor vehicle within any parking space specifically designated for parking and fueling electric vehicles can be cited and subject to a civil penalty of at least $350.

Maryland: The passage of SB 340 enshrined protection over designated EV parking. Cars not actively charging their cars while parked in an EV spot could receive penalties.

Washington: RCW 46.08.185 states it is a parking infraction with a penalty of $124 for any person to park a vehicle in an EV charging station on public or private property if the vehicle is not connected to the charge equipment.

EV-UTILITY INVESTMENTS

Utilities have an important role to play in accelerating deployment of EV charging infrastructure, which leads to increased EV adoption and expanded access to the benefits of vehicle electrification to presently underserved market segments. In 2017, there were dozens of state and utility-level actions related to EVs proposed, pending or decided, according to a national policy review from the North Carolina Clean Energy Technology Center (CETC). The legislative and policy actions covered are wide ranging and include studies of EV impacts, charging station buildout, and EV-specific rate designs. Efforts to ease barriers to charging station infrastructure buildout by utilities are numerous and varied; the ones below offer benefits to EV owners, utility companies, and the public at-large.

CHARGING INFRASTRUCTURE PRINCIPLES FOR UTILITIES AND PUBLIC OFFICIALS

Electric utilities—and their regulators—must not only take an active role in planning for an electric future, but may assume a supportive role, given the electricity grid, economic and societal benefits that can accrue to the body of utility customers as a result of widespread transportation electrification. In particular, electric utilities are well-positioned to addressing infrastructure and market education challenges.

Addressing key barriers to EV adoption and realizing the benefits of EVs will require careful guidance from utility regulators and support from state public officials. The key roles for utility regulators are to:

- support the "EV conversation" among key stakeholders;
- integrate transportation electrification into resource planning processes;
- identify, and, where appropriate, resolve key issues that will define utility and market roles;
- review and approve reasonable, no-regrets utility EV charging investment programs that are in the "public interest."

In the EV context, the public interest should refer to programs that will: integrate new electricity load to the benefit of all utility customers; deploy infrastructure in locations where it will be used and useful; equitably serve all customers; and define utility and market roles to support the growth of an innovative and competitive market for EV service providers.

Defining the principles that should guide EV-Utility investment from the start can put all stakeholders on the same page and guide utilities in designing programs and regulators' review of those proposed investments. One good example is the Transportation Electrification Accord.

The Transportation Electrification Accord was primarily crafted by NGOs and has now been signed by 50+ vehicle manufacturers, electric utilities, EV infrastructure and technology companies, consumer advocates and public interest groups representing interests ranging from labor to environmental. The Accord spells out high level principles that explain how to electrify the transportation sector in a way that maximizes economic, social, and environmental benefits. The Accord is made up of 11 principles that address what transportation electrification should encompass and where stations are needed; they highlight the need and some of the means to intelligently integrate new electricity load with the grid; they emphasize the need to serve all electricity customers, they center consumer protection and open access in the deployment of new infrastructure; and they address the role for electric utilities—underlining that they are critical stakeholders and should have a place in moving transportation electrification forward.



RIBBON CUTTING CEREMONY FOR THE NEW SOLAR POWERED EV CHARGING STATIONS AT OXFORD HILLS HIGH SCHOOL. PHOTO CREDIT: NATURAL RESOURCES COUNCIL OF MAINE

In several states, regulators have approved programs for electric utilities to support the adoption of EVs, including investments in EV charging infrastructure. These include utilities installing thousands of charging stations and investing money in EV outreach and education. Well-conceived programs ensure that utility investments increase access to clean transportation options in low-income neighborhoods and underserved communities; increase deployment of EV chargers in multi-unit dwellings, workplaces, fast charge locations, and other settings that are currently poorly served by the competitive market; and that programs or rate structures are implemented to managed the new EV load to minimize strain on the grid and facilitate integration of renewable energy. Here are links to examples of programs or proposals worth considering:

Ohio: AEP Ohio ($10M light-duty vehicle charging infrastructure program approved in 2018) (pages 26-32)

Florida: Duke Energy Florida ($8M light-duty vehicle charging infrastructure program approved 2017) (pages 40-44)

Maryland: Baltimore Gas & Electric, Potomac Electric

Power Co., Delmarva Power, and Potomac Edison Co. ($104M EV charging infrastructure proposal from late December 2017, including carve-out for low-income communities)

California: San Diego Gas & Electric ($45M investment in light-duty vehicle charging infrastructure approved in 2016). San Diego Gas & Electric, Southern California Edison and Pacific Gas & Electric ($43M of pilot programs to electrify light-, medium- and heavy-duty vehicles approved in 2018). State public officials also have important roles. New legislation can provide certainty regarding state utility commission authority and the utility role in the transportation electrification context by resolving basic legal and policy issues and/or encouraging state utility regulators to invite and approve EV programs by utilities.

Massachusetts: H4781 was passed in 2017 and authorizes electric utilities to propose EV-related investments and establishes the test that the state's utility commission, the Department of Public Utilities, must use to review any proposed investments.

New Hampshire: SB 575 does not define the electric utility role, but it does resolve another basic issue that is important to the development of the EV charging market: it clarifies that non-utility owners or operators of charging stations are not public utilities subject to regulation by the state's utility commission solely by virtue of operating a charging station.

California: SB 350 was signed by Governor Brown in 2015 and finds that "widespread transportation electrification requires electrical corporations to increase access to the use of electricity as a transportation fuel." It directs the California Public Utilities Commission to order electric utilities within its jurisdiction to propose projects and programs to support electrification of California's transportation sector in order to meet the state's air quality targets, reduce oil use, and limit greenhouse gas emissions.



NATIONAL DRIVE ELECTRIC WEEK IN WATTS, CA. 2016. PHOTO CREDIT: SIERRA CLUB

USING VW SETTLEMENT FUNDS TO GROW EV CHARGING NETWORKS

As mentioned in the Electrifying Vehicle Fleets section, the Volkswagen settlement provides tens of millions of dollars in funds available for states to build new—and expand existing—charging networks. Every state has the option to invest a maximum of 15 percent of the state's total settlement funds for building out EV charging networks.

To be effective in increasing EV adoption, EV charging stations should be installed in areas that experts have identified as being key to accelerating widespread EV adoption, such as apartments and condominiums, workplaces, and highway corridors. Some states have outlined plans to install charging stations in underserved communities and areas that suffer highest impact from air pollution—most often low-income areas and communities of color—understanding that equity and access are important principles to bring clean transportation to all, regardless of race or class.

Colorado: the state's final plan carves out 15% of funds ($10.4 million) toward EV charging along interstate corridors and also ensures environmental justice communities will have equal access in the installation plan. Charging station placement will also be based on major "points of interest" like grocery stores, malls and landmarks.

California: though the plan is still in the draft phase, the state has committed 35% of the funds allocated for charging stations to be invested in disadvantaged communities.

Washington, D.C.: prioritizes investments that benefit areas of the city that bear a disproportionate share of the air pollution burden. These regions were determined by looking at asthma rates in the District and disadvantaged neighborhoods as defined by income levels.

Evaluating Vehicle Registration Fees

Unfortunately, annual registration fees for EV drivers are on the rise. Before 2017, fewer than 10 states had EV fees. Now, at least 17 states have EV registration fees, with the highest fee of $200 annually. Special fees, which act as disincentives by adding to the total cost of EV ownership, were the most common EV-related policy proposal in 2017, according to a report by CETC.

RESISTING ANTI-EV REGISTRATION FEES

Those lawmakers who support EV registration fees claim such measures are necessary to make up for the lost revenue from the gasoline tax, since EVs use less or no gas compared to their counterparts. These annual fees are used by states as a means to exploit drivers, billing people an amount often higher per year than drivers of conventional vehicles are paying in gas tax.

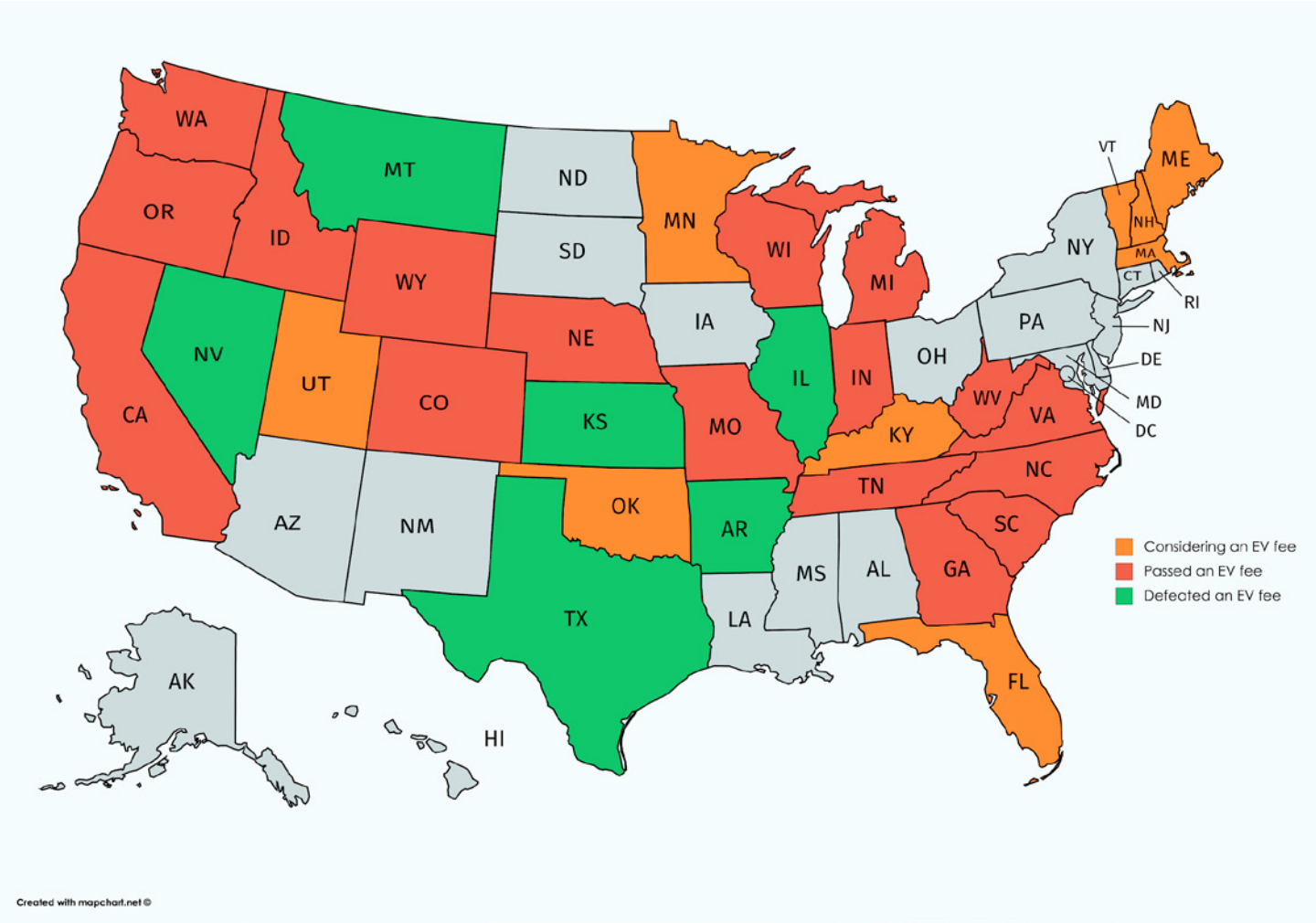
See more information on the Plug In America EV Road Usage Fee page and Sierra Club's EV fee fact sheet and blog article.

Reduced Registration Fee Template

WHY EV DRIVER ANNUAL REGISTRATION FEES SHOULDN'T EXIST

States often do not impose similar fees on trucks, despite their far greater weight and impact on roads. EVs are typically lighter than both trucks and conventional vehicles.

The average driver pays $71 in gas taxes each year, but the average EV fee is significantly higher. Such disproportionate fees threaten to deter potential EV buyers at a time when EV technology is just starting to gain a foothold.



(LAST UPDATED MARCH 2018)

States often subsidize natural gas and liquefied petroleum vehicles and waive annual fees for owners, despite these vehicles not contributing to gas-tax revenue.

EVs do not contribute to tailpipe air pollution, the lack of which means improved air quality and public health.

Most EV fees force owners to pay more than their fair share of the transportation fund -more in annual EV registration fees than conventional drivers are paying in gas tax. In some states, EV owners already pay electricity taxes to utilities and many payer higher than average sales tax on their vehicle purchases.

As is often the case, transportation-fund deficits average in the tens to hundreds of millions of dollars. Increased registration on EVs, which average less than 1% of a state's total registered vehicles, would do little in the near-term to address these enormous deficits.

STATES WITH WAIVED OR REDUCED VEHICLE REGISTRATION FEES FOR EV DRIVERS

Connecticut: Offers reduced registration fees: $80 for a passenger car; $38 for an electric-vehicle passenger car. (Reference Chapter 246 Sections 14-31 and 14-49 of General Statutes of Connecticut)

District of Columbia: A new motor vehicle with a U.S. EPA-estimated average city fuel economy of at least 40 miles per gallon is eligible for a reduced registration fee of $36 for first-time registration only. Other passenger vehicles face a fee of $72-$155 based on weight.

Illinois: Registration fees for passenger vehicles vary from $101-$114. However, HB 4717 lowered the yearly maximum for an EV registration fee to $18.

Iowa: Yearly registration fees for electric automobiles (battery powered) made before 2014 vary from $15-$25. Multipurpose vehicles (ex. Chevrolet Blazer, Ford Bronco, Dodge Ramcharger) made in 1992 and older face yearly fees of $55 - $60. For all qualifying passenger EVs, fees are based on an equal weight fee. (Reference Iowa Code 321.116, 321.124, 321.159)

Vermont: The registration fee for electric-powered vehicles is $74 for one year, or $136 for two - nearly half of what gas/diesel vehicles pay: $132 for one year; or $242 for two. In 2016, Vermont's Agency of Transportation released a study of whether it would be fiscally effective to charge EV owners a higher registration fee. Leaders have recommended refraining from an EV fee until EVs constitute at least 15% of the state's vehicles.

EXPANDING EQUITY AND ACCESS

Though EV deployment has increased in recent years, people from disadvantaged communities are more likely to encounter the strongest barriers to EV adoption. EVs are much more affordable than gas-powered cars when factoring in lowered maintenance and fuel costs, but today, the up-front price tag can still be larger than gas-powered cars. For low-income families, the $7,500 federal tax credit doesn't fully remove the economic barrier many people face when buying or leasing their next car.



PHOTO CREDIT: MARY LUNETTA

Additionally, most low-income folks will not be able to access the $7,500 credit given that they won't have the tax liability. They can access it if they lease, but it's not always guaranteed that the financing company will pass on the savings to the consumer.

Disadvantaged communities also face challenges to charging access, as they less frequently are homeowners and are often people who live in multi-unit buildings (MUDs) without dedicated charging spaces.

Disadvantaged communities typically experience more severe health impacts from vehicle tailpipe emissions because they're often located near major roadways and transportation hubs. These emissions increase the risks of asthma, cancer, and other pollution-related illnesses. In order for a mass transition to clean cars, they will have to be adopted by and made affordable for communities of color and low-income as they are



PHOTO CREDIT: MARY LUNETTA

disproportionately impacted by vehicle pollution. States, cities, and utilities should adopt programs that increase electric transportation for all communities because everyone deserves to breathe clean air and access clean transportation choices, regardless of income or location.

REBATES FOR LOW-INCOME DRIVERS

California: Charge Ahead California Initiative aims to bring one million electric cars, trucks, and buses to California by 2023. SB 1275 directs the California Air Resources Board (CARB) to create equity programs that increase access to and use of EVs among low and moderate income individuals. For example, prioritization of rebate payments are given to low-income consumers; and, through the Clean Cars 4 All Program, low-income eligible applicants may receive additional compensation of $2,500 towards replacing a high-emission motor vehicle. Eligibility details can be found here. Through CARB, the Community Housing Development Corporation (CHDC) has a Transportation Program that serves low-income residents in six Bay Area counties by providing a vehicle financing option for the purchase of a used HEV, PHEV, EV, or FCEV. The pilot program will go statewide in June 2018.

Oregon: In addition to the $750 - $2,500 rebate for the purchase or lease of a PHEV or EV, drivers with low-moderate income who live in areas with elevated concentrations of air pollution are eligible for an additional rebate up to $2,500 to replace a car that is at least 20 years old.

ELECTRIC CAR-SHARING PROGRAMS

Los Angeles, California: BlueLA is a 100% EV car-sharing program, geared toward low-income residents. Members are not required to return the vehicle to the same place they picked it up. This gives working families the option to pick up an EV from a location near their home and drop it off at a location near a public transportation hub if needed, making the program more flexible and convenient. It's an excellent example that demonstrates how a community-invested carsharing program can increase the mobility of underserved communities in a successful and sustainable way.

CHARGING ACCESS IN UNDERSERVED COMMUNITIES

San Diego, California: The San Diego Gas & Electric (SDG&E) Power Your Drive Program is deploying 350 EV site installations and 3,500 charging stations at workplaces, multi-unit dwellings, and in disadvantaged communities. SDG&E pays for the EV stations and installation; the site host pays a one-time participation payment: $630/port for workplace, $235/port for MUDs, and $0 for disadvantaged community installations.



PHOTO CREDIT: GINA COPLON-NEWFIELD

Consumer Education And Protection

EV PROCLAMATIONS & DRIVER BILL OF RIGHTS

EV Proclamations: One of the easiest ways to show support for EVs is through a proclamation or resolution that emphasizes the benefits of EVs. These proclamations or resolutions can be adopted at the local, city, or state level. These actions are a strong force to continue building momentum to transition to EVs, and show which public officials will take a stand and sign on to the proclamation or resolution. Here is a link to an example.

EV Driver Bill of Rights: The switch to driving an electric vehicle is a lifestyle switch. The vehicle includes different technology than a gas vehicle, the charging of the battery is different than filling up with gas, and owning the vehicle also presents different opportunities than a gas vehicle. For these reasons, consumers need to be assured that they have certain rights when it comes to driving an EV. This can be summed up in a resolution called an EV Driver Bill of Rights. A resolution does not hold the force of law, but represents the optimal guidelines for specific EV policies and on specific EV issues. However, the resolution can instruct state or local agencies to adopt policies that do have the force of law and would comply with the intent specified in the EV Driver Bill of Rights.

A sample EV Driver Bill of Rights could include components focused on the consumer purchase experience, the consumer charging experience and the consumer ownership experience

RIDE AND DRIVE EVENTS

Ride and Drive Events: Nothing gets people more excited by and brought into the idea that an EV could work for them than ride and drive events. These opportunities give people the chance to kick the tires and check out EVs for themselves, so they can see just how easy a transition it is. The annual National Drive Electric Week events, presented nationally by the Sierra Club, Plug In America, and the

Electric Auto Association and locally by many other partners, allow people to organize their own pro-EV events that could include parades, an EV showcase at existing festivals, or just events where people are able swap EV stories with neighbors at a driveway party. The best events include opportunities for test drives as well as for public officials to attend and announce new EV policies.



NATIONAL DRIVE ELECTRIC WEEK IN BIG SKY, MONTANA
PHOTO CREDIT: MARGO MAGNANT, 2017

OPEN ACCESS AND INTEROPERABILITY

It is critical for states to resolve basic issues related to access, payment, and pricing at EV charging stations in order to support current or would-be EV drivers. This is particularly important in a world with an ever-increasing number of EV service providers offering varied models for access and pricing. To provide EV drivers with a positive charging experience, lawmakers should set basic ground rules for charging station access, payment options, and pricing transparency.

Open access is the ability to get a charge at any public charger, including Level 1, Level 2, and DC Fast Charging. This means that the public charging station is not locked behind a gate or wall—essentially open for access by the public. Open access also means that there is one or more methods of payment available to enable the charge to begin, for example via a credit card swipe or via a mobile app.

EV drivers should never be stranded at a public charging location where they cannot actually charge. Pricing transparency is the clarity of price of a charge when the EV driver connects to the charger, including any roaming fees or demand charges. The price should be reported in mapping API so that drivers can select a charging station even before they reach a charging station. Front-end interoperability is a key principle for the entire charging infrastructure ecosystem. Currently, many companies have their own card or key, which means drivers must either join multiple "clubs" or risk being unable to charge; this should be remedied.

Providing mapping data is another key criteria aligned with consumer protection. All electric vehicle service providers (EVSPs) should provide mapping data for charging locations, including costs for charging (both in and out of network).

California: SB 454 created the Electric Vehicle Charging Stations Open Access Act, which includes the above noted consumer protection principles. California is currently adopting standards to meet the specifications under the legislation.

Massachusetts: Chapter 448 of the Laws of 2016 included some provisions on open access and prohibitions on subscription fees of public charging stations.

New Hampshire: SB 575 prohibits an owner or operator of a charging station from requiring a membership or subscription fee for use of a charging station, requires that charging stations support multiple payment options and mandates reporting of charging station location and other data to the Department of Energy's Alternative Fuels Data Center.



UNIFORM SIGNAGE REQUIREMENTS

There is a critical need for charging station signage, from highway visibility down to the last several hundred feet around a station. While charging station locations may be noted on smartphone mapping tools, car navigation, or web-based maps, the stations can still be challenging to locate as the physical hardware is not that large.

Directional signage installed on streets near charging stations would aid navigation, and also help to generally reduce EV driver "range anxiety." A sample template to use is linked here.

Federal: The federal government provides guidance for EV signage, but it is often up to state transportation agencies to decide whether to use the signs and how to do that per the policy guidelines. For those highways that have been designated as Alternative Fuels Corridors, there is specific guidance on the design and appropriate use of signs. For freeways and expressways that are part of a state general service sign program, the FHWA provides interim approval of an EV charging station general service sign. For standardized parking signs close to the EV charging station, the FHWA also provides guidance for these parking signs.

West Coast Green Highway: A standardized symbol marking a public charging station along major highways has been adopted in Washington, Oregon, and California. Local street signs indicating where a charging station is, parking signs, and pavement markings are also specified.

Washington: RCW 46.08.185 details the charging station signage required, as well as the monetary penalty for parking a gas car in the charging spot. Charging station signage must also meet the requirements in RCW 47.36.030.

California: The California Health & Safety Code, Division 26, Part 5, Chapter 8.7, Section 44268.2 requires charging stations to be labeled in accordance with Part 309 of Title 16 of the Code of Federal Regulations. The PEV Collaborative has also proposed recommendations for charging station signs and accessibility.

Conclusion

Electric vehicle adoption is a win/win for people, governments and the environment. Many groups and diverse stakeholders with a broad range of concerns and interests stand to benefit from state and local policies that advance electric transportation and charging infrastructure.

Environmental justice and public health advocates approve of the large reductions in emissions and improved air quality, particularly for disadvantaged communities located along freeways and major transportation hubs. State and local governments benefit from savings in fuel and maintenance costs for public transportation. Taxpayers benefit from savings in fuel costs, too, but especially the priceless reductions in public health risks. Unionized workers, such as electrical and utility workers, benefit from increases in work needed to install and maintain charging infrastructure. Bus drivers benefit from the elimination of exposure to harmful emissions while on the job. And transit riders and school children benefit from cleaner air to breathe on rides to work and school.

This Toolkit makes it clear that we need an all-hands-on-deck effort from government, utilities and transit agencies, and it lays out a full range of actions and policies that are proven to accelerate EV adoption, both effectively and equitably, in any state and local community that wants cleaner vehicles and cleaner air.



THREE NATIONAL DRIVE ELECTRIC WEEK ATTENDEES AT TECH SQUARE IN ATLANTA SHOW WHY THEY DRIVE ELECTRIC. PHOTO CREDIT: SOUTHERN COMPANY/GEORGIA POWER

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