

ZEV

ZERO EMISSION VEHICLE



WHAT IS A ZEV?

The term Zero Emission Vehicle – or ZEV – refers to vehicles that are capable of operating with no tailpipe pollution. There are different types of ZEVs including pure battery-electric vehicles (e.g. Nissan Leaf), plug-in hybrid electric vehicles (e.g. Chevy Volt) and hydrogen fuel cell electric vehicles (e.g. Toyota Mirai). Widespread adoption of ZEVs helps reduce air pollution while significantly lowering fuel costs for consumers and fleet owners.

A growing U.S. ZEV fleet means:

- Reduced demand for gasoline and oil
- A healthier environment
- More jobs and local economic benefits
- Fewer bad air quality days
- Enhanced economic and national security
- Reduced carbon pollution that causes global climate change

WHAT IS THE ZEV PROGRAM?

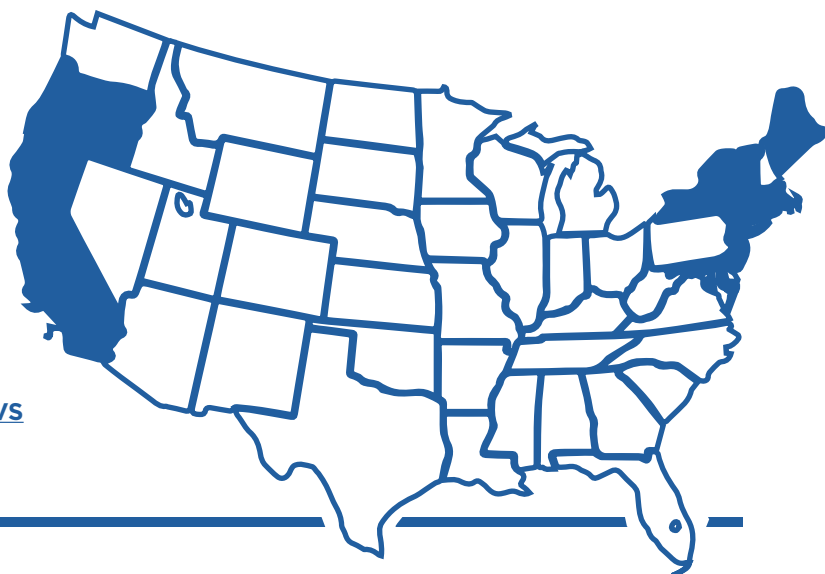
California, which has unique authority under [Section 209 of the Clean Air Act](#) to issue vehicle emission standards that are stricter than federal vehicle standards, created the first-in-the-nation ZEV Program. A special provision of the Clean Air Act, [Section 177](#), allows other states to choose to replicate California's standards instead of following the federal standards. Nine states, eight of which are in the Northeast, have taken this option. California's ZEV Program requires major manufacturers of passenger vehicles and light trucks to attain a certain benchmark of ZEV sales as a percent of their total volume. California's program is expected to result in 4.5 percent of new cars and trucks purchased in 2018 to be ZEVs, a figure that will gradually increase over time. By 2025, 15 percent of all new cars and trucks sold in the state will be required to be ZEVs.

ZEV programs are one of many ways states work to reduce transportation-related air pollution, including climate pollution.

ZEV PROGRAMS FROM COAST TO COAST

Ten states (California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont) representing nearly 30 percent of the U.S. automotive market have adopted California's ZEV Program.

THE GOVERNORS OF **EIGHT** OF THESE STATES HAVE ALSO SIGNED A MULTI-STATE ZEV ACTION PLAN AND HAVE PLEDGED TO PUT **3.3 MILLION ZEVS** ON THE ROAD BY 2025.



STATES LEAD THE WAY ON ZEVS

California continues to offer incentives for purchasing and owning EVs and the state is ramping up investments in charging stations, too. Other states are taking similar approaches to help grow the U.S. EV market. Oregon, along with other western states, is working to build a network of charging stations along major travel corridors. In the Northeast, where the close proximity of urban hubs makes it easier for EV drivers to get from point A to point B on a single charge, states also are investing in public charging stations to support more inter-urban travel.



CONNECTICUT

Connecticut offers an immediate rebate at the dealership of up to \$3,000 for purchases and leases 24 months or longer. For selling the EV, dealers receive an incentive payment worth 10 percent of the consumer rebate.



NEW JERSEY

New Jersey provides a sales and use tax exemption for ZEVs. A \$30,000 vehicle, for example, receives an exemption worth \$2,100.



MAINE

In Maine, the utility Central Maine Power gave grants to businesses and organizations to purchase or lease an EV and install charging station equipment, as well as grants to install three DC fast charger stations. An additional matching grant program was announced in 2015 to help non-profits purchase EVs or charging equipment.



NEW YORK

New York has supported the installation of about 500 charging outlets, bringing the statewide total to 1,100, with another 300 in the process of being installed. The state also offers an income tax credit to individuals and businesses for the lesser of \$5,000 or 50 percent of the cost of the charging unit.



OREGON

Oregon offers tax credits to individuals and businesses for 25-35 percent of eligible costs for qualified alternative fuel infrastructure projects.



MARYLAND

Maryland has invested more than \$1.5 million in chargers and as of January 2015, had 611 publicly available charging outlets at 250 locations, including 149 outlets at 73 state-owned or leased facilities. The state also offers a \$3,000 tax credit for purchased and leased vehicles.



RHODE ISLAND

Rhode Island has a network of approximately 60 public charging stations across the state. Additionally, \$725,000 of Regional Greenhouse Gas Initiative auction proceeds will be used to deploy more stations, with \$600,000 allocated specifically to municipalities and state agencies.



MASSACHUSETTS

The [Massachusetts Electric Vehicle Incentive Program \(MassEVIP\)](#) provides funding for municipalities, state fleets, and public universities and colleges to acquire EVs and charging equipment. In addition, the MOR-EV program provides rebates of up to \$2,500 to consumers for vehicle purchases and leases of at least 36 months.



VERMONT

Vermont's ZEV Action Plan calls for 25 percent of all light-duty state fleet vehicles (purchased and leased) to be ZEVs by 2025. Watch a [video](#) of Olympic snowboarder Ross Powers driving an EV on Vermont's rugged roads.

THREATS TO THE ZEV PROGRAM

Key policy decisions are pending on ZEVs and related national vehicle standards in the next eighteen months. California, along with the U.S. Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) will conduct a [Midterm Review](#) of national vehicle greenhouse gas (GHG) standards; and the California Air Resources Board (CARB) will conduct a separate review of its ZEV Program.

National Standards

National GHG and fuel economy standards were adopted in August 2012 covering the time period 2017-2025. The adopted rules called for a [Midterm Review](#) to evaluate progress and new information regarding the 2022-2025 phase of the rules. The review is underway, with public comment phases starting in summer 2016.

California Standards and the Travel Loophole

The California ZEV Program was last updated in January 2012. The current rule contains a loophole, the travel provision, that erodes ZEV markets beyond California. Automakers can apply credits earned for selling ZEVs in California to cover their compliance obligations in CT, MA, ME, MD, NJ, NY, RI, OR and VT. The travel loophole is supposed to end after 2017, but automakers will likely seek to extend it.

CONSUMER BENEFITS OF ZEVs

SAVING MONEY

- ZEV owners can save \$750 to \$1,200 a year on maintenance and fuel costs when compared with operating an average new compact gasoline vehicle.¹
- The cost to charge an EV is the equivalent of \$1.00 - \$1.50 per gallon of gas.
- ZEV buyers can receive up to \$7,500 in federal tax credits or significantly reduced monthly lease terms.



GREAT PERFORMANCE

- ZEVs accelerate silently and smoothly with instant response and quicker pickup than many equivalent gas-powered cars.
- ZEVs operate quietly; there's no engine noise.



INCREASED CONVENIENCE

- With ZEVs, you take no more—or fewer—trips to the gas pump.
- You can plug in at night and wake up to a full charge each morning.
- Indulge in luxuries such as smartphone vehicle management apps, preheating and cooling systems, and heated seats.



IMPROVED AIR QUALITY

- Vehicles that meet current emission standards cause \$14.5 billion in public health and societal costs annually, including 570 premature deaths. A pure ZEV fleet that consumes no petroleum would avoid almost \$13 billion in health, climate and other damages and avoid 275 tons per day of criteria air pollutants.²



¹ Union of Concerned Scientists: http://www.ucsusa.org/sites/default/files/legacy/assets/documents/clean_vehicles/electric-car-global-warming-emissions-exec-summary.pdf

² American Lung Association in California: <http://www.lung.org/local-content/california/documents/state-of-the-air/2015/ala-state-of-the-air-2015-california.pdf>

DRIVING ZEV ADOPTION

To get more of these next-generation, clean air vehicles on the road, ZEV states are:

- Encouraging private and public fleets to acquire ZEVs
- Investing in ZEV infrastructure
- Removing barriers to charging station installation
- Promoting workplace charging
- Providing consumer incentives
- Removing barriers to the retail sale of electricity as a vehicle fuel
- Promoting access and compatibility for charging networks
- Offering tax credits on the purchase of ZEVs
- Waiving or discounting registration fees
- Allowing carpool lane access
- Designating prime parking spots in public lots
- Building public fueling stations

INCREASED ENERGY INDEPENDENCE

- The U.S. transportation sector is 95 percent dependent on petroleum—leaving the nation keenly vulnerable to supply disruptions and oil market volatility.³



JOBS AND ECONOMIC BENEFITS

- ZEVs are a catalyst for growth. In California alone, the ZEV market will create 100,000 additional jobs across all economic sectors by 2030.⁴
 - Most of these jobs are in service sectors such as healthcare and entertainment and the dollars spent on these sectors tend to get spent on other local state goods and services creating additional jobs.
- On average, a dollar saved at the gas pump and spent on other household goods and services creates 16 times more jobs than a dollar spent on refined petroleum product.⁴



ADDRESSING CLIMATE CHANGE

- The U.S. transportation sector creates nearly 30 percent of the nation's greenhouse gas emissions, and in many states that number is higher. When we reduce emissions from vehicles, we take harmful carbon and other smog-forming and toxic pollutants out of the air.



³ Office of Governor Edmund G. Brown Jr.: [http://opr.ca.gov/docs/Governors_Office_ZEV_Action_Plan_\(02-13\).pdf](http://opr.ca.gov/docs/Governors_Office_ZEV_Action_Plan_(02-13).pdf)

⁴ California Electric Transportation Coalition: <http://www.caetc.com/wp-content/uploads/2012/11/Economic-Jobs-Assessment-Fact-Sheet.pdf>

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