Amendments to the Pennsylvania Clean Vehicles Program

Zero Emission Vehicle Program

Environmental Justice Advisory Board

November 16, 2021
Rulemaking Outcomes

• Reduce emissions of air pollution in Pennsylvania from the Pennsylvania light-duty vehicle fleet
• Help ensure Pennsylvania automobile dealers and consumers, including in EJ areas, can get Zero Emission Vehicles (ZEVs)
• Help keep Pennsylvania competitive in regional electric vehicle (EV) sales market
Low Emission Vehicles: LEV

• The LEV standard is applicable to criteria air pollutants and precursors (NOx, VOC, PM$_{2.5}$, CO) for the entire fleet of vehicles in a state.

• Manufacturers can produce vehicles that perform better than the LEV fleet standard to generate credits.

• Pennsylvania currently has a LEV program. LEV requirements in Pennsylvania are set forth in the regulations implementing our Pennsylvania Clean Vehicles Program.

• Pennsylvania’s LEV requirements are updated to clarify reporting requirements for the existing standard.
The ZEV standard applies to criteria pollutants for the entire fleet of vehicles in a state or region. Operation of ZEVs reduces both greenhouse gases (GHGs) and criteria pollutants. Manufacturers can produce and offer for sale more vehicles than required under the program to generate credits. Pennsylvania does not currently have a ZEV program.

This rulemaking would incorporate the current California ZEV requirements into the Pennsylvania Clean Vehicles Program.

If and when California modifies its ZEV Program, a new rulemaking by Pennsylvania would be necessary to incorporate those changes.
• Proposed Amendments to Pennsylvania Clean Vehicles Program:
  o Adopt the requirements for the California Air Resources Board (CARB) ZEV program beginning model year (MY) 2026.
  o Require automakers to demonstrate compliance with the currently adopted CARB GHG fleet average emissions standard based on sales in Pennsylvania and not California as currently allowed.
  o More specifics about the rulemaking can be found on DEP’s Air Quality Technical Advisory Committee Webpage: https://www.dep.pa.gov/Business/Air/BAQ/AdvisoryGroups/Air-Quality-Technical-Advisory-Committee/Pages/default.aspx
The Virginia Legislature voted in February 2021 for VA to also implement the CARB LEV/ZEV Program.

Source: www.pca.state.mn.us/air/about-clean-cars-minnesota (accessed 3/9/21)
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California is allowed to set its own automobile emission standards.

Such California standards must be granted a waiver by the EPA.

EPA is in the process of re-instating California’s Waiver for GHG and ZEV Programs.

Allows states to adopt and enforce standards for new motor vehicle/engine emissions control if such standards are identical to California.
The Pennsylvania Clean Vehicles Program was last revised December 2006 to implement the CARB LEV program in PA.

- Applied starting MY 2008 to new passenger cars and light-duty trucks “sold, leased, offered for sale or lease, imported, delivered, purchased, rented, acquired, received, titled or registered in this Commonwealth.”

- The CARB ZEV percentage program was not adopted by PA.

* 36 Pa.B. 7424, December 9, 2006
• Incorporate by reference only the **current** version of CARB ZEV program requirements beginning in MY 2026.
  
  o Automakers must generate or obtain ZEV credits equal to or greater to their required credit obligation for Pennsylvania.
  
  o The annual CARB credit obligation percentage is 22% for MY 2025 and beyond.
  
  o Full or partial ZEV credits are generated by any vehicle manufacturer who delivered for sale/lease in PA a credit-eligible ZEV vehicle.
  
  o Automakers can buy/sell ZEV credits between each other.
  
  o Proposing a three-year early action ZEV credit period for automakers to generate ZEV credits for model years 2023, 2024 and 2025.
Proposed Amendments

• EVs eligible for ZEV credit generation include:
  o Full Battery EVs (BEV) – up to 4 ZEV credits maximum per vehicle depending on electric range.
  o Plug-in Hybrid Electric Vehicles (PHEV) -maximum 1.1 ZEV credit.
  o Hydrogen Internal Combustion Engine (HICE) vehicles – maximum 1.25 ZEV credit.
  o Range Extended Battery Electric Vehicles (BEVx) – same formula as full EV with minimum 75-mile electric range.
  o Neighborhood Electric Vehicles (NEV) – maximum 0.15 ZEV credit
Summary of Environmental Benefits

• Estimated environmental benefits trends:
  o Overall decrease of criteria pollutants (NOx, VOC, PM$_{2.5}$, CO, SO$_2$) and air toxics (e.g. benzene)
  o Contributes towards attainment and maintenance of compliance with National Ambient Air Quality Standards (NAAQS)
  o Decrease greenhouse gases (GHGs)
  o Cleaner air means improved health, welfare and environment in this Commonwealth

NOx — Oxides of Nitrogen
VOC — Volatile Organic Compounds
PM$_{2.5}$ — Particulate Matter <2.5µm
CO — Carbon Monoxide
SO$_2$ — Sulfur Dioxide
ZEV Trends and Economic Benefits

• ZEV Trends:
  o Plug-in EV and full-EV demand is increasing nationwide and in PA.
  o EV battery and manufacturing costs are decreasing globally.
  o Major automakers are making commitments to manufacture affordable EVs.
    o Charging infrastructure is being built out to accommodate demand.

• Automobile manufacturers direct ZEV’s to dealers in states with ZEV programs.

• Adopting ZEV standards in Pennsylvania will:
  o Expand ability of Pennsylvania auto dealers to acquire and sell ZEVs.
  o Provide additional consumer choice in their vehicle purchases.
  o Help keep Pennsylvania competitive in regional EV sales market with neighboring states already with existing Section 177 ZEV programs.
• Would make PA the 3rd largest ZEV state
• Reduced operating/maintenance costs for all owners
• Improved vehicle and battery warranties for hybrid vehicles
• Accelerate introduction of EVs into used vehicle market
• Enhance sales to help reduce EV manufacturing costs sooner
• Accelerate net PA job growth in electric transportation supply chain industries
• Proportional environmental/health benefit in urban and Environmental Justice areas
  • Urban areas in PA have higher rates of automobile pollution.
Considerations for EJ Areas

• EV adoption price differential is larger barrier
  o Studies suggest cost parity between conventional and battery EVs in 2025 to 2029 timeframe.
  o Low-income households must delay EV purchase to save for higher upfront cost.

• Used EV market very important for availability and affordability
  o Used EV cost parity for low-income households in 2025 to 2030 timeframe.
  o Higher depreciation for first owners will lead to larger benefits to low-income second owners due to technology improvements and rapidly dropping new vehicle prices.

Electric Vehicle Affordability

- Higher up-front cost, but...

- Lower fuel and maintenance costs can negate a higher car payment

Fuel Savings of $125 per month!
Assumes PA average gas cost per gallon and cost per kWh and national average miles driven, MPG, and miles per kWh

Source: ChargEVC.org – Electric Vehicles Savings Calculator
Considerations for EJ Areas (cont.)

• Charging and charging infrastructure
  o Owning home vs rental
  o Multi-unit buildings vs single-family
  o Urban vs rural

• EV costs savings have higher impact as percent of income

• Proposed rulemaking itself will have reduced impacts because it is limited to the existing ZEV program.

• Department will evaluate future proposed CARB ZEV rule
  o CARB ZEV EJ credit mechanism
**Alternative Fuel Vehicle Rebate** for Individuals:

- $750 for new or used electric vehicle
- $500 for new or used plug-in hybrid or electric motorcycle
- Additional $1,000 for applicants with low income
Proposed Rulemaking Schedule

• Proposed Rule to EQB – 1st Quarter 2022
• Public Comment Period – 60 days
• 3 public hearings/information meetings - TBD
• Final Rule to EQB – 4th quarter 2022
• State Implementation Plan Submittal – 4th quarter 2022
Questions?

Brian Trowbridge
Air Quality Program Specialist
Mobile Sources Section
717-787-9492
britrowbri@pa.gov

Colton Brown
Energy Program Specialist
Energy Programs Office
717-705-4156
coltbrown@pa.gov