



Bureau of Air Quality



Amendments to the Pennsylvania Clean Vehicles Program Zero Emission Vehicle Program

**Air Quality Technical Advisory Committee
October 14, 2021**

Tom Wolf, Governor

Patrick McDonnell, Secretary

Rulemaking Outcomes

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

Low Emission Vehicles: LEV

- The LEV standard is applicable to criteria pollutants for the entire fleet of vehicles in a state or region.
- 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.

Zero Emission Vehicles: ZEV

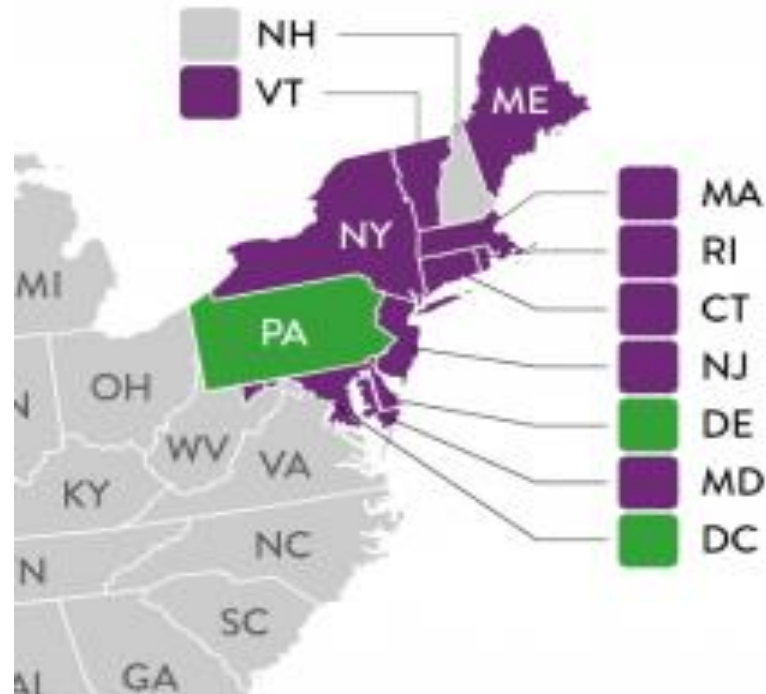
- The ZEV standard applies to criteria pollutants for the entire fleet of vehicles in a state or region. Operation of ZEVs reduces both - greenhouse gases (GHGs) and criteria pollutants. Manufacturers can produce and offer for sale more vehicles than required under the program to generate credits. Pennsylvania 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.

Rulemaking Summary

- Proposed Amendments to Pennsylvania Clean Vehicles Program:
 - Amend Chapter 126, Subchapter D to adopt the requirements for the California Air Resources Board (CARB) ZEV program beginning model year (MY) 2026.
 - 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.
 - Update definitions in Chapter 121, section 121.1.

LEV and ZEV States

- States that have adopted both LEV and ZEV standards
- States that have adopted LEV
- States currently working to adopt both standards
- States that follow federal standards



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)

Background on CARB Standards

- 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.
- Allows states to adopt and enforce standards for new motor vehicle/engine emissions control if such standards are identical to California.

Background on PCV Program

- 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

Proposed Amendments

- Incorporate by reference only the current version of CARB ZEV program requirements beginning in MY 2026.
 - Automakers must generate or obtain ZEV credits equal to or greater to their required credit obligation for Pennsylvania.
 - The credit obligation for each manufacturer is a percentage of the average of the total Pennsylvania sales of PC/LDTs in the previous 2nd, 3rd and 4th model year. The annual CARB credit obligation percentage is 22% for MY 2025 and beyond.
 - Only medium and large volume manufacturers are subject to the credit obligation.
 - Full or partial ZEV credits are generated by any vehicle manufacturer who delivered for sale/lease in PA a credit-eligible ZEV vehicle.
 - Automakers can buy/sell ZEV credits between each other.

PC/LDTs – Passenger Cars / Light-Duty Trucks

Proposed Amendments

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

Proposed Amendments

- Amend § 126.412. Light-duty vehicle emissions requirements:
 - Revise fleet average requirement language to reflect NMOG+NOx requirement.
 - Delete outdated MY 2008 through 2010 NMOG early credit generation.
 - Add GHG fleet average requirement for PA sales and GHG credit equivalency.
 - Add environmental performance label requirement to be consistent with CARB.

NMOG – Non-methane Organic Gas
NOx — Oxides of Nitrogen

Proposed Amendments

- Add new § 126.412a. ZEV requirements:
 - ZEV credit percentage requirement for MY 2026
 - Establish three model year PA ZEV **Early Action Credit** (EAC) mechanism (MY 2023 through MY 2025) for transition
 - Sets ZEV credit generation, banking and trading provisions, and establishes requirements for addressing ZEV credit deficits

Proposed Amendments

- Amend §§ 126.421, 126.422. Applicable New Motor Vehicle Testing:
 - Aligns incorporation by reference to Title 13 CCR Division 3, Chapter 1 inclusively
- Amend § 126.432. Light-duty vehicle fleet average reporting requirements:
 - Removes obsolete NMOG compliance language for MY 2008, 2009 & 2010
 - Specifies NMOG + NO_x and GHG fleet average compliance reporting requirements and submission deadlines

Proposed Amendments

- Add new § 126.433. ZEV reporting requirements:
 - Establishes ZEV credit percentage compliance reporting requirements deadline
 - Defines five-year record retention requirement for automakers
 - Lists requirements for automakers to earn EACs and requires DEP to add those credits to the automakers CARB ZEV credit tracking system for MY 2026 compliance

Summary of Environmental Benefits

- Estimated environmental benefits trends:
 - Overall decrease of criteria pollutants (NO_x, VOC PM_{2.5}, SO₂) and air toxics (e.g. benzene)
 - Contributes towards attainment and maintenance of compliance with National Ambient Air Quality Standards (NAAQS)
 - Decrease GHGs
 - Cleaner air means improved health, welfare and environment in the Commonwealth

NO_x — Oxides of Nitrogen

VOC — Volatile Organic Compounds

PM_{2.5} — Particulate Matter <2.5µm

SO₂ — Sulfur Dioxide

ZEV Trends and Economic Benefits

- ZEV Trends:
 - Plug-in EV and full-EV demand is increasing nationwide and in PA
 - EV battery and manufacturing costs decreasing globally
 - Major automakers are making commitment to manufacture affordable EVs
 - 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:
 - Expand ability of Pennsylvania auto dealers to acquire and sell ZEVs.
 - Provide additional consumer choice in their vehicle purchases.
 - Help keep Pennsylvania competitive in regional EV sales market with neighboring states already with existing Section 177 ZEV programs

Social/Economic Effects of Rule

- Proportional environmental / health benefit in urban and Environmental Justice areas.
- Effect on >1000 PA new car dealer establishments:
 - Vast majority are small businesses
 - Increased sales vs. decreased service
 - Uncertainty in automaker/dealership model in future
 - Used-vehicle dealers and repair-only shops may see secondary effects (also generally small businesses)
- Positive effect on PA businesses that would benefit from new supply chains for increased national EV manufacturing.
- Helps meet consumer demand and interests.
- Reduced operating/maintenance costs for owners.

➤ Social/Economic Effects of Rule (cont.)

- Use existing and planned charging infrastructure.
- PA would become the 3rd largest ZEV state.
- Automakers will have the ability to earn EACs to help comply with MY 2026 ZEV credit requirement.
- Work with CARB/automakers to estimate MY 2026 and beyond effects. Proposed CARB ACCII rules for post MY 2025.

Proposed Rulemaking Schedule

- Proposed Rule to EQB – 4th quarter 2021
- 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



Bureau of Air Quality

Questions?

Chris Trostle

Environmental Group Manager

Mobile Sources Section

717-772-3926

dtrostle@pa.gov