



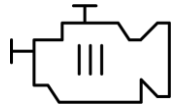
# Heavy Duty Vehicle Emissions Regulations

Mari Mantle

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# United States Regulatory Overview

## Engine Manufacturers



### CARB Omnibus:

Sets a 50mg NOx standard that new engines must meet, starting in 2024 for California and later years for opt-in states

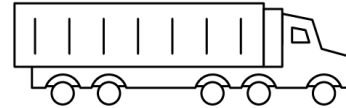
### EPA Heavy Duty Low NOx:

Sets a 35mg NOx standard that new engines must meet, starting in 2027

### EPA Phase 2 GHG:

Engine manufacturers must meet CO<sub>2</sub> targets for engines. 2021, 2024 & 2027

## Vehicle Manufacturers



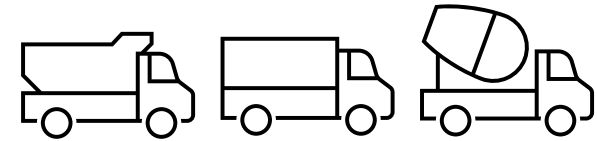
### CARB Advanced Clean Trucks:

Vehicle Manufacturers must produce AND SELL a certain percentage of ZEV each year beginning in 2024

### EPA Phase 2 and 3 GHG:

Vehicle Manufacturers must meet a CO<sub>2</sub> average for all vehicles sold.  
Phase 2: 2021 & 2024  
Phase 3: Starts in 2027

## Fleets/End Users



### CARB Advanced Clean Fleets:

Fleets must purchase a given amount of ZEV starting in 2024 ~OR~ meet ZEV milestone thresholds with their fleet starting in 2025.

### CARB Clean Truck Check:

Roadside emissions monitoring, OBD emissions checks & reporting

Engine Manufacturers must sell engines that met these requirements to vehicle manufacturers. This includes a limited number of legacy engines.

Vehicle Manufacturers must sell an increasing percentage of ZEV each year

Fleets must follow ACF ZEV purchase requirements ~OR~ ACF ZEV fleet percentage requirements

# United States Regulatory Changes

- Oregon delayed Omnibus implementation from 2024 to 2025 to 2026
- Massachusetts delayed Omnibus implementation from 2025 to 2026
- CARB committed to amend ACT to allow vehicles with 2026 model year engines certified to the 50mg NOx standard be neutral (no Zero Emission Vehicle (ZEV) purchase required)
- CARB is issuing a suite of changes via guidance documents to provide relief on Omnibus, ACT and ACF regulation interactions

# ACT **Future** 15-day Change Package

At the October 24<sup>th</sup> board meeting CARB committed to exclude Omnibus compliant heavy-heavy duty engines from generating deficits under ACT for the 2026 model year

- What is an Omnibus compliant engine?
  - *An engine certified to the Omnibus standard of 50mg NOx without using emissions credits (hardware compliant)*
- What is a heavy-heavy duty engine?
  - *Cummins 15L engine*
  - *Heavy HDE includes engines that are designed for multiple rebuilds and have cylinder liners. Vehicles in this group are normally tractors, trucks, straight trucks with dual rear axles, and buses used in inter-city, long-haul applications. These vehicles normally exceed 33,000 pounds GVWR.*
- What does excluded from generating deficits under ACT mean?
  - *An OEM does NOT have to sell a percentage of ZEV when they sell a vehicle with a 2026MY Omnibus-compliant heavy-heavy engine*

# Appendix

# Changes Agreed to by CARB

Agreed Change	Model Year Applicability	How CARB Will Implement	Significance
Omnibus Option 2 <b>MHD legacy cap</b> fixed at 5,000 engines instead of variable	2024 and 2025	Enforcement discretion	Instead of allocating legacy engines via a real-time percentage, they now have a fixed cap
Extend <b>Omnibus enforcement</b> discretion for legacy engine labeling and reporting (updates December 2023 letter)	2025 and 2026		Protects manufacturers against customers registering / using unmitigated legacy engines in CA
Extend <b>ACF enforcement</b> discretion for out-of-state fleets to add unmitigated legacy engines (updates July 2023 letter)	2026		Out-of-state ACF fleets can continue to add unmitigated legacy engines to their fleets in 2026
Allow mfrs to <b>certify</b> legacy engine families prior to Omnibus-compliant family	2025 and 2026	Manufacturers Advisory Correspondence (supplements MAC 2022-04)	Speeds up engine certification process for previously certified engines
Allow <b>CARB Clean Idle Label</b> for unmitigated out-of-state legacy engines	2026		Allows out-of-state fleets using legacy engines to receive CARB's clean idle label
<b>50 mg HHD engine</b> does not count against OEM's ZEV deficit in ACT	2026	Regulatory amendment (15-day changes to ACT rule)	Vehicle manufacturers no longer need to sell a ZEV to offset the sale of a 50mg HHD engine sold into an ACT state

# CARB: Omnibus, ACT, ACF Adoption

### Omnibus quick facts:

- California does not have an EPA wavier to enforce Omnibus
- Established new engine emissions standards (50mg NOx) starting in 2024 for California and opt-in states
- Establishes sales limits on legacy engines (which require mitigation)

### ACT quick facts:

- California has an EPA wavier to enforce ACT
- ACT is an OEM rule which requires a % of annual class 2b-8 sales to be ZEV
- OEMs must sell ZEV to sell ICE Vehicles
- Cummins has no limits on selling engines into ACT/ACF only adopting states

### ACF quick facts:

- California does not have an EPA wavier to enforce ACF, but can enforce on state and local government fleets
- ACF is a fleet rule which requires fleets to transition to ZEV
- A state must go through rulemaking or lawmaking to adopt and enforce CARB ACF
- Cummins hasn't seen any state take action to follow ACF

	2024			2025			2026			2027*		
	OMNIBUS	ACT	ACF	OMNIBUS	ACT	ACF	OMNIBUS	ACT	ACF	ACT	ACF	
California	●	●	●	●	●	●	●	●	●	●	●	
Oregon				→	●	●	○	●	●	●	○	
Massachusetts				→	●	●	○	●	●	●	○	
Washington					●	●	○	●	●	●	○	
New York					●	●	○	●	●	●	○	
New Jersey					●	●		●	●	●	○	
Vermont							○	●	●	●	○	
New Jersey								●	●	●	○	
Colorado										●	○	
New Mexico										●	○	
Rhode Island										●	○	
Maryland										●	○	
Nevada										○	○	
Virginia										○	○	
North Carolina										○	○	
Hawaii										○	○	
D.C.										○	○	

● - Adopted  
○ - Adopted, capability to enforce and implement is uncertain  
○ - Potential to adopt

A state may be required to provide 2-year lead time to adopt Omnibus, ACT, or ACF due to Clean Air Act requirements.

\*Aligned nationwide regulation in 2027 eliminates need to track Omnibus states

# Approved CARB ACT Amendments

*These original amendments are consistent with the agreement reached in the Clean Truck Partnership.*

*They were proposed in April 2024.*

- ACT credits and deficits are generated “when a new on-road vehicle is produced and delivered for sale in California, rather than when it is sold to an ultimate purchaser;”
- CARB is extending the deficit make-up period from one year to three years, and is clarifying that the three-model year period begins with the first model year following the model year in which the manufacturer had a net deficit
- Provide flexibility for manufacturers to certify medium-duty to the requirements of the Zero-Emission Powertrain Certification (ZEP Cert) or the applicable requirements of the light-duty ZEV requirements.
- Starting in 2036 100% ZEV sales requirement

*Additional amendments were proposed in September 2024.*

- Labeling requirements to determine compliance with ACT
  - Clarify the enforcement section to state if ZEVs are found not to have been registered or placed in CA, CARB will remove the credit, and if other vehicles were found to have been registered or placed in CA without being reported, CARB will add deficits
- Secondary vehicle manufacturers can buy, sell and trade ZEV credits
- For certification, ZEP Cert requirement for all Class 2b-8 vehicles starting in the 2028 MY, providing 4 years lead time
- Deficit under the makeup period has to remain below the 30% threshold by the end of the first and second model years (language previously only specified by the end of the first model year)
- Up to 50% of the deficit under the makeup period can be made up with NZEVs



