



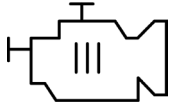
# **Regulatory Update**

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# Who do these regulations impact?

## Engine Manufacturers



### **CARB Omnibus:**

Sets emissions standards that new engines must meet, starting in 2024 for California and later years for opt-in states

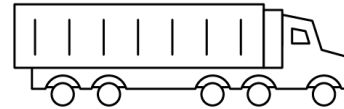
### **EPA Heavy Duty Low NOx:**

Sets emissions standards 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/Dealers



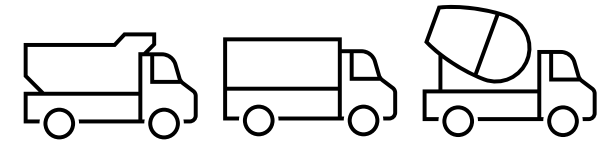
### **CARB Advanced Clean Trucks:**

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:**

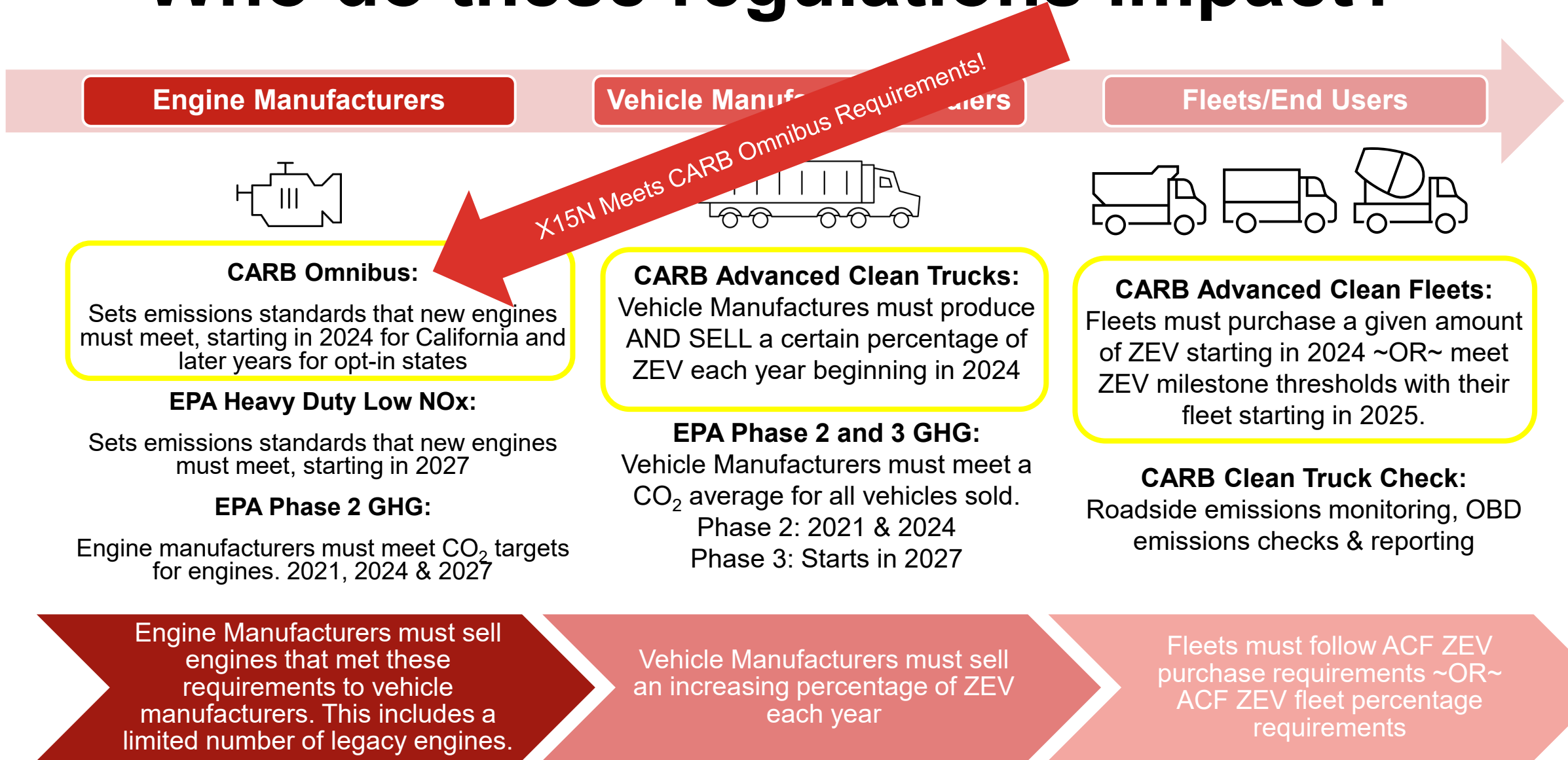
Roadside emissions monitoring, OBD emissions checks & reporting

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

# Who do these regulations impact?



# CARB: Omnibus, ACT, ACF Adoption

## Omnibus quick facts:

- California does not have an EPA waiver 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 waiver 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 waiver 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	●	●	●	California	●	●	●	California	●	●	●	California	●	●
				Oregon	○	●		Oregon	○	●		Oregon	●	○
				Massachusetts	○	●		Massachusetts	○	●		Massachusetts	●	○
				Washington		●		Washington	○	●		Washington	●	○
				New York		●		New York	○	●		New York	●	○
				New Jersey		●		Vermont	○	●		Vermont	●	○
								New Jersey		●		New Jersey	●	○
								Colorado				Colorado	●	○
								New Mexico				New Mexico	●	○
								Rhode Island				Rhode Island	●	○
								Maryland				Maryland	●	○
								Nevada				Nevada	○	○
								Virginia				Virginia	○	○
								North Carolina				North Carolina	○	○
								Hawaii				Hawaii	○	○
								D.C.				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

# Appendix

# Criteria Pollutants vs. Greenhouse Gases



## CRITERIA POLLUTANTS

*Contributes to smog and negative public health outcomes*

- Particulate matter **(PM)** and other emissions like nitrogen oxides **(NOx)**
- Criteria pollutants are close to zero with today's engine technologies

Example: CARB Omnibus and EPA's Low NOx regulations



## GREENHOUSE GASES **(GHG)**

*Trapped heat contributes to climate change*

- Carbon dioxide **(CO<sub>2</sub>)**, methane **(CH<sub>4</sub>)**, nitrous oxide **(N<sub>2</sub>O)**, and others
- Current regulations evaluate GHG reductions based on a tank to wheel basis
- Using a well to wheel approach (renewable fuels) can contribute to reduced GHG emissions

Example: EPA's Phase 2 and Phase 3 GHG regulations

# CARB's ACT: Zero Emission Vehicle Percentages

**ZEV Sales Percentage Schedule**

Model Year	Class 2b-3 Group	Class 4-8 Group	Class 7-8 Tractors Group
2024	5%	9%	5%
2025	7%	11%	7%
2026	10%	13%	10%
2027	15%	20%	15%
2028	20%	30%	20%
2029	25%	40%	25%
2030	30%	50%	30%
2031	35%	55%	35%
2032	40%	60%	40%
2033	45%	65%	40%
2034	50%	70%	40%
2035	55%	75%	40%
2036 (From ACF Regulation, not all states adopting)	100%	100%	100%

**Weight Class Modifiers**

	Vehicles in the Class 2b-3	Class 4-5 Vehicles in the Class 4-8 Group	Class 6-7 Vehicles in the Class 4-8 Group	Class 8 Vehicles in the Class 4-8 Group	Vehicles in the Class 7 and 8 Tractor Group
Weight Class Modifier	0.8	1	1.5	2	2.5

*“Produced and delivered for sale in California”*

ZEV=Battery Electric and Fuel Cell

# EPA's GHG Phase 3: *Estimated ZEV Percent Adoption Rates*

Regulatory Subcategory	MY 2027	MY 2028	MY 2029	MY 2030	MY 2031	MY 2032
LHD Vocational	17%	22%	27%	32%	46%	60%
MHD Vocational	13%	16%	19%	22%	31%	40%
HHD Vocational	0%	0%	13%	15%	23%	30%
MHD All Cab and HHD Day Cab Tractor	0%	8%	12%	16%	28%	40%
Sleeper Cab Tractors	0%	0%	0%	6%	12%	25%
Heavy Haul Tractors	0%	0%	1%	1%	3%	5%
Optional Custom Chassis: School Bus	13%	16%	19%	22%	31%	40%
Optional Custom Chassis: Other Bus	0%	0%	13%	15%	23%	30%
Optional Custom Chassis: Refuse Hauler	0%	5%	10%	15%	16%	16%

ZEV=Battery Electric and Fuel Cell

(H<sub>2</sub>-ICE Vehicles are counted the same as ZEV under Phase 3 because zero tailpipe CO<sub>2</sub>)

# Advanced Clean Fleets (ACF) Model Year Schedule

Fleets must follow the ZEV Purchase Requirements when adding vehicles to their California fleet if they do not opt-in to the ZEV Milestone Requirements

ZEV Purchase Requirements (Model Year Schedule)	2024	2025	2026	2027+
Federal and High Priority Fleets	100%	100%	100%	100%
State and Local Government Fleets	50%	50%	50%	100%
State and Local Government Fleets <i>Low Population Counties</i>	None	None	None	100%
Drayage	100%	100%	100%	100%

- **Federal, High Priority and Drayage Fleets** must remove ICE vehicles by January 1<sup>st</sup> of the calendar year following the end of their useful life\* starting in 2025
- **Legacy Drayage Trucks** must visit a California seaport or railyard at least once a year to remain in The CARB Online System
- **All Drayage Trucks** entering seaports and intermodal rail yards must be ZEV starting in 2035

*\*Useful life is the later of 13 years or 800,000 miles, but no more than 18 years*

# Advanced Clean Fleets (ACF) Opt-In Milestone Schedule

High Priority, Federal, and State and Local Government Fleets can opt-in to use the ZEV Milestone Requirements as an alternative to the ZEV Purchase Requirements

**Fleets can continue to add ICE vehicles to their fleet as long as their fleet meets the ZEV milestone requirements**

<b>Optional ZEV Milestone Requirements: Percentage of CA fleet that must be ZEV</b>	<b>10%</b>	<b>25%</b>	<b>50%</b>	<b>75%</b>	<b>100%</b>
<b>Milestone Group 1:</b> Light Duty Package Delivery Vehicles, Box trucks, Vans, 2-Axle Buses, Yard tractors	2025	2028	2031	2033	2035+
<b>Milestone Group 2:</b> Work trucks, Day cab tractors, 3-Axle buses	2027	2030	2033	2036	2039+
<b>Milestone Group 3:</b> Sleeper cab tractors, Specialty vehicles, Waste Fleet Vehicles	2030	2033	2036	2039	2042+

*\*Fleets following the Optional ZEV Milestone Schedule waive their useful life guarantee*

# ACF: High Priority and Federal Government Fleet - Definition

- **High Priority Fleet:**
  - Any entity or combination of entities with \$50 million or more in total gross annual revenue in the prior year
  - Is a fleet owner that owns, operates, or directs 50 or more vehicles, excluding light duty package delivery vehicles
  - Is a fleet owner or controlling party whose fleet in combination with other fleets operated under common ownership and control totals 50 or more vehicles, excluding light duty package delivery vehicles
- **Any Federal Government Agency**
- **Applies to Vehicles that operate in California with:**
  - On-road vehicles with a GVWR above 8,500 lbs.
  - On-road light-duty vehicles used for package, parcel, or mail delivery with a GVWR equal to or less than 8,500 lbs.
  - Yard tractors
- **Hiring Entities**
  - These requirements apply to any motor carrier, broker, federal government agency, person or entity that hires and operates or hires and directs fleets subject to any of the Advanced Clean Fleets Regulations

# ACF: California Fleet Definition

- “California fleet” means the subset of vehicles, including those under common ownership or control, in the total fleet operated by a fleet owner or controlling party in California during a calendar year.
- If a vehicle is operated in California at any time during a calendar year, it will be considered part of the California fleet for the entire calendar year.
- Rental and leased vehicles are counted as specified in section High Priority and Federal Fleets requirements
  
- “Removed from the California fleet” means a vehicle that is no longer operated in California by the fleet owner on or after the date the vehicle meets one of the following conditions:
  - Destroyed or scrapped;
  - Sold out of the fleet or transferred out-of-state; or
  - For controlling parties, common ownership or control of the vehicle ends.