

WHAT TO KNOW ABOUT VEHICLE EMISSIONS REGULATORY COMPLIANCE

Whether you own commercial vehicles or manage an entire fleet, staying current with vehicle emissions regulations are essential for compliance and keeping your freight and business moving.

This article provides an overview of key requirements for commercial vehicles, important compliance dates, and why you should act soon to ensure your fleet's compliance.

Understanding the CARB Vehicle Emission Rules

The California Air Resources Board (CARB) is a state agency that oversees air quality standards, including transportation. CARB announced a series of new rules focused primarily on transitioning commercial fleets toward zero-emission Vehicles (ZEVs). If you own, operate, or manage commercial vehicles, it's important to learn about the regulations and understand your responsibilities under these rules.

These rules establish varying vehicle specifications and/or operating requirements that apply to different vehicle and fleet types, and center on four key changes from prior CARB vehicle emissions rules:

1. They apply to all vehicles operating in the state of California, regardless of domicile. Prior programs required out-of-state units to be compliant, but only domiciled units required reporting.
2. Compared to prior CARB rules, these requirements go beyond individual vehicle specifications. You still need to verify a vehicle's specifications are California approved, but now you also have to confirm the vehicle type meets additional requirements based on its intended use (i.e., drayage and TRU) and your broader fleet composition.
3. The regulations aim to phase out traditional internal combustion engine (ICE) vehicles and mandate transition toward ZEVs, such as battery-electric and hydrogen fuel-cell vehicles.
4. They will be enforced using a wide range of methods, including controls at licensing and registration points, through roadside cameras and checkpoints, during CARB inspections, and at end destinations (i.e., ports).

The CARB vehicle emission rules have many requirements that can affect your business in different ways. It is imperative you:

- Are aware of each rule and the areas of your business they may affect
- Understand and plan for your compliance requirements, including vehicle registration, testing, reporting, and replacement deadlines
- Develop a compliance strategy specific to your fleet by leaning on the expertise of an industry-leading third-party provider like Ryder



KEY VEHICLE EMISSIONS REGULATIONS

RULE	STATUS	SUMMARY OF REQUIREMENTS	CUSTOMER COMPLIANCE CONSIDERATIONS
<u>CARB Heavy-Duty Engine & Vehicle Omnibus</u>	Effective Dec 2021 EPA waiver granted Dec 17, 2024	<ul style="list-style-type: none"> Phases in progressively lower standards for vehicle emissions including NOx in MY2024 & MY2027 	<ul style="list-style-type: none"> OEM action Limited Engine/New Unit Slot availability. Consider used units amongst other select options
<u>CARB Advanced Clean Trucks (ACT)</u>	Effective Mar 2022 EPA waiver granted Apr 6, 2023	<ul style="list-style-type: none"> Manufacturer mandate to sell minimum ZEV starting with MY2024 	<ul style="list-style-type: none"> OEM action Work with internal teams, carriers & OEMs to monitor ACT adoption nationwide & submit Large Entity Reports for fleet, as required
<u>CARB Advanced Clean Fleets (ACF)</u>	Effective Oct. 2023 (CARB announced stay of enforcement Dec 2023, pending waiver) CARB withdrew the EPA waiver request Jan 2024	<ul style="list-style-type: none"> Fleet owner (\$50M+ annual revenue or 50+trucks) mandate to buy ZEV toward 100% ZEV fleet by 2042 All new drayage units must be ZEV starting 1/1/24 Fleet Operator to select either: (1) Model Year or (2) Milestone compliance pathway by January 1, 2024 	<ul style="list-style-type: none"> Conduct fleet analysis across full California operating fleet where customer is “fleet operator” to define minimum ZEV thresholds and select preferred compliance schedule Register CA operating fleet in TRU database
<u>CARB Transport Refrigeration Unit (TRU) Amendments</u>	Effective Oct 2022 Partial EPA waiver granted Jan 3, 2025 and CARB withdrew the remaining waiver request Jan 2024	<ul style="list-style-type: none"> Manufacturer mandate to sell only ZE TRU after 12/31/23 Trailer MY2023+ must have ultra-low emissions or be retired after 7 years 	<ul style="list-style-type: none"> Register all refrigerated equipment in ARBER database
<u>CARB Clean Truck Check (CTC)</u>	Adopted Dec 2021 Effective Jan 1, 2023	<ul style="list-style-type: none"> Required registration, emission testing & reporting 2-4x/year for vehicles operating in California CARB enforcement through controls at licensing and registration points, roadside cameras and checkpoints, surprise inspections, and at end destinations (i.e., ports) 	<ul style="list-style-type: none"> For customer operated & leased vehicles, register CA operating fleet in new CTC database (opened Oct 1, 2023) Identify a certified test center (i.e., Ryder shops) for emissions testing of all California operated vehicles Develop compliance reporting plan
<u>EPA NOx</u>	January 2027	<ul style="list-style-type: none"> Sets more stringent emissions standards in vehicles 8,501 	<ul style="list-style-type: none"> GVWR toward reduced nitrogen oxides (NOx)
<u>EPA GHG Phase 3</u>	Jan. 2027 Jan 2028 Day Cabs Jan 2030 sleepers	<ul style="list-style-type: none"> Mandates phased-in production, not purchase, of more fuel-efficient vehicles 8,501+ GVWR 	—



Heavy-Duty Omnibus Regulation

Starting in 2024, the CARB regulation will cut engine NOx emissions to about 75% below current standards, and 90% below current standards in 2027. And, while the EPA is also mandating lower NOx engines for the rest of the country beginning in 2024, CARB's requirements are more stringent. This will impact the types and availability of engines for most asset classes.

For companies looking to buy or lease new vehicles in California, these CARB standards go into effect for all engine OEMs, with production starting January 1, 2024. Details about engines available to meet CARB standards, in some cases, are still being developed by engine OEMs.

Several important aspects to know about engine options and regulation requirements are:

- The Heavy-Duty Omnibus Regulation applies to all new non-gasoline (diesel, natural gas) internal combustion equipment purchases (ICE) in California above 14,000 GVWR, regardless of company size or revenue.
- OEMs have announced minimal production of diesel engines that meet the new 2024 CARB standards, resulting in dramatically fewer slots. Potential alternative options for these engines will be octane (gas), ZEVs, and redeployment of existing equipment.
- Engine production and availability are limited and uncertain across multiple engine OEMs.
- 2023 production slots with 2023 engine technology and / or Used Vehicles sold in or into the State, with 2023 or older engines, are not affected as this regulation applies to 2024 and newer engine model years (MY).

Advanced Clean Trucks (ACT)

The Advanced Clean Trucks (ACT) regulations mandate minimum ZEV sales in California for original equipment manufacturers (OEMs), starting in MY2024 and resulting in 100% ZEV sales in 2035. Business entities that meet select criteria must submit a one-time large entity report (LER) detailing information about their operations (i.e., number of vehicles in their fleets including vehicle type, make, model, and engine type). In California, LERs were due April 2021. Other U.S. states have the ACT rule and also require state-specific LERs.

Advanced Clean Fleets (ACF)

CARB proposed the Advanced Clean Fleets (ACF) regulation to transition diesel to ZEV by 2045. In December 2023, CARB announced the delay of enforcement while the EPA considers the waiver.

The ACF rule transition to ZEV for "high priority" fleets, which are defined as fleets with 50 or more vehicles operating in California, or companies that generate more than \$50 million in annual revenue and at least one vehicle operating in California. Fleets that meet either of these criteria can transition to ZEV under two compliance schedules. The first (default) option is called the Model Year schedule and requires all new vehicles after January 1, 2024, to be ZEV. This is a good option for fleets that do not see wide variability and are trying to maximize the useful life of their existing ICE units. The second option is called the Milestone Schedule and allows fleets that opt-in to phase-in ZEV in from 2025 through 2042 as a percentage of their overall fleet.

The ACF requirements for drayage apply to vehicles that haul cargo containers picked up from or dropped off at a marine port or rail yard. All drayage units (ZEV and ICE) operating in California must be registered in CARB's drayage portal. Any new units registered for drayage use must be ZEV. Existing ICE units registered for drayage by December 31 can get legacy status at no additional cost if they meet specific requirements. To maintain legacy status, these units are required to visit a port or railyard at least once per year, among other limitations.

Transport Refrigeration Unit (TRU) Requirements

CARB vehicle emission laws also have changes to the Transport Refrigeration Unit Airborne Toxic Control Measure (TRU ATCM) compliance schedule, including conversion to zero emission truck TRUs.

CARB's amendments to the TRU ATCM regulation were created to further reduce emissions from diesel-powered TRUs and transition TRU trucks to zero emission. In response, OEMs are implementing a new refrigerant for newly manufactured TRUs. MY 2023 and newer TRUs meet a more stringent emission standard.

Fleet owners, including fleets operators with leased vehicles, must meet the following requirements by December 31, 2023:

- Expanded TRU reporting, operating fees, and compliance labels. Each operating fleet must register all TRUs, including trailer TRUs, with CARB. Beginning December 31, 2023, CARB will assess and collect fees from owner/operators of TRUs every three years, and owner/operators must install new compliance labels to their TRU, which CARB will provide.
- Register and keep all refrigerated equipment operating in California up-to-date in the CARB ARBER database.

Clean Truck Check (formerly, Heavy-Duty Inspection and Maintenance) Program

Why Start Compliance Now?

1. The journey to compliance with emission standards takes time. Starting early allows for effective planning, sourcing of vehicles, and infrastructure development.
2. Many governmental and nongovernmental organizations offer incentives, grants, and subsidies to support the adoption of zero-emission vehicles. Starting early may help your company better capitalize on these financial benefits.
3. Non-compliance with CARB regulations could lead to hefty fines and penalties (up to \$10,000 per vehicle per day per rule). Starting early minimizes the risk of noncompliance and its associated costs.



Navigating CARB Regulations with a Trusted Third-Party Provider

As the deadlines for these vehicle emission rules approach, commercial vehicle owners and transportation managers are facing the challenge of transitioning their fleets to comply with these regulations. Working with a trusted third-party provider like Ryder is a strategic move toward seamless compliance while reaping the benefits of expertise, resources, and industry experience.

As an established leader in the commercial transportation industry, Ryder possesses in-depth knowledge of these emerging regulations, and the challenges and opportunities they present. Trusting Ryder allows you to leverage a wealth of expertise on compliance considerations, ZEV available in the marketplace, and the latest regulatory developments. We are here to help you make informed decisions, avoid potential pitfalls, and evolve your fleet to meet your company's needs.

Transitioning to ZEVs involves more than just procuring new trucks. It requires a comprehensive approach that aligns with a company's operational needs. Ryder specializes in providing customized fleet solutions based on individual company requirements. This includes fleet leasing and dedicated transportation solutions, as well as truck rental with vehicles that comply with CARB rules. From vehicle selection and financing options to maintenance and charging infrastructure, Ryder tailors a comprehensive plan that addresses CARB regulations while minimizing disruptions to business operations. Ryder closely monitors regulatory changes and our approach to compliance can help you stay ahead of updates and ensure that your fleet meets the latest requirements.

While compliance primarily falls under the responsibilities of fleet owners and operators, collaborating with a trusted third-party provider like Ryder can simplify the process, allowing you to focus on your core operations while benefiting from industry-leading expertise, tailored solutions, and a proven commitment to sustainability. As companies strive to meet CARB's requirements, partnering with Ryder could be the key to a successful and seamless transition.

