

2022 Amendments to the TRU ATCM

The purpose of this regulatory advisory is to inform transport refrigeration unit (TRU) and TRU generator set (collectively referred to as TRUs) owners and operators; TRU manufacturers (OEM); applicable facility¹ owners and operators; vehicle owners; and drivers of new regulatory requirements as a result of amendments to the TRU Airborne Toxic Control Measure (ATCM)².

Background

The California Air Resources Board (CARB) adopted the TRU ATCM in 2004 (and amended it in 2010 and 2011) to reduce diesel PM emissions and resulting health risk from diesel-powered TRUs. Despite the progress made, additional TRU emission reductions are needed to further protect communities from near-source pollution impacts, help meet the current health-based ambient air quality standards across California, and support the State's climate goals. On February 24, 2022, CARB approved amendments to the TRU ATCM (2022 Amendments) to achieve additional emission and health risk reductions from diesel-powered TRUs and increase the use of zero-emission technology in the off-road sector. The 2022 Amendments will help meet the State's multiple risk reduction, air quality, and climate goals, as well as the directive of Executive Order [N-29-20](#), which set a goal for 100 percent zero-emission off-road vehicles and equipment in the State by 2035.

Below is a summary of the 2022 Amendments. Note that there are multiple compliance deadlines, the earliest starting December 31, 2022.

1. **Lower global warming potential refrigerant** – Beginning **December 31, 2022**, newly-manufactured truck TRUs, trailer TRUs, and domestic shipping container TRUs shall use refrigerant with a global warming potential less than or equal to 2,200, or no refrigerant at all.
2. **More stringent PM emission standard** – Beginning **December 31, 2022**, model year 2023 and newer trailer TRU, domestic shipping container TRU, railcar TRU, and TRU generator set engines shall meet a PM emission standard of 0.02 grams per brake horsepower-hour or lower (aligns with the United States Environmental Protection Agency Tier 4 final off-road PM emission standard for 25-50 horsepower engines).

¹ Applicable facilities include refrigerated warehouses or distribution centers with a building size of 20,000 square feet or greater, grocery stores with a building size of 15,000 square feet or greater, seaport facilities, and intermodal railyards with TRU activity.

² The 2022 Amendments to the TRU ATCM are available at: <https://ww2.arb.ca.gov/rulemaking/2021/tru2021>

3. **Requirements for vehicle owners and drivers**– Beginning **December 31, 2022**, vehicle owners of TRU-equipped trucks or tractor-trailers equipped with a TRU shall ensure the TRU is compliant. If requested, drivers shall allow CARB personnel to conduct a visual inspection of their TRU.
4. **Applicable facility requirements** – Beginning **December 31, 2023**, owners of refrigerated warehouses or distribution centers with a building size of 20,000 square feet or greater, grocery stores with a building size of 15,000 square feet or greater, seaport facilities, and intermodal railyards with TRU activity (applicable facilities) shall register the facility with CARB, pay fees every three years, and report all TRUs that operate at their facility to CARB quarterly, or alternatively ensure that only compliant TRUs operate at their facility (i.e., those with a valid CARB compliance label or showing as compliant on CARB’s website).
5. **Expanded TRU reporting** – Beginning **December 31, 2023**, TRU owners shall report all TRUs (including out-of-state based) that operate in California to CARB.
6. **TRU operating fees and compliance labels** – Beginning **December 31, 2023**, TRU owners shall pay TRU operating fees and affix CARB compliance labels to their TRU every three years, for each TRU operated in California.
7. **Zero-emission truck TRU requirement**³ – Beginning **December 31, 2023**, TRU owners shall turnover at least 15 percent of their truck TRU fleet (defined as truck TRUs operating in California) to zero-emission technology each year (for seven years). All truck TRUs operating in California shall be zero-emission by **December 31, 2029**.
8. **Zero-emission truck TRU assurances** – OEMs of zero-emission truck TRUs shall be required to provide a comprehensive warranty for zero-emission truck TRUs and have an authorized service-and-repair facility located in California to perform warranty repairs.
9. **Compliance extensions due to private financing, equipment manufacture delays, or installer delays** – Compliance extensions due to private financing, equipment manufacture delays, or installer delays may be granted for a maximum of six months (previously four months).
10. **Requirements for lessors and lessees** – TRU owners (lessors) may delegate compliance responsibility to the TRU operator (lessee) if the rental or lease agreement is for a period of one year or longer.

What Should Owners and Operators of TRUs Do to Comply with the Requirements That Go into Effect in 2022?

If purchasing a trailer TRU, domestic shipping container TRU, railcar TRU, or TRU generator set with a model year **2023 or newer** engine, ensure that the engine is certified to meet or outperform the PM emission standard of 0.02 grams per brake horsepower-hour or lower.

³ Only applicable to TRU. Truck may be subject to other CARB regulations.

Owners and operators of model year **2023 and newer** truck TRUs, trailer TRUs, and domestic shipping container TRUs are also required to recharge their unit with the correct refrigerant type (refrigerant with a global warming potential less than or equal to 2,200, or no refrigerant at all) when doing routine maintenance and ensure that the OEM supplied refrigerant label is readable and adequately maintained.

Owners and operators of trailer TRUs, domestic shipping container TRUs, railcar TRUs, or TRU generator sets with a model year **2022 or older** engine, will continue to operate under the current TRU ATCM requirements, in which they shall meet the Ultra-Low Emission TRU performance standard (also known as ULETRU) by December 31 of the seventh year after the engine model year.

What Should TRU OEMs Do to Comply with the Requirements That Go into Effect In 2022?

Beginning **December 31, 2022**, TRU OEMs are prohibited from manufacturing for sale or use in California, a truck TRU, trailer TRU, or domestic shipping container TRU, unless the TRU uses refrigerant with a global warming potential less than or equal to 2,200, or no refrigerant at all and has a proper refrigerant label.

Beginning **May 31, 2023**, TRU OEMs are prohibited from manufacturing for sale or use in California, a trailer TRU, domestic shipping container TRU, railcar TRU, or TRU generator set, unless it is equipped with an engine that meets or outperforms the PM emission standard of 0.02 grams per brake horsepower-hour or lower.

Beginning **December 31, 2023**, TRU OEMs are prohibited from manufacturing for sale or use in California, a truck TRU, unless it is zero-emission. TRU OEMs are required to provide a warranty for each zero-emission truck TRU for a period of three years from the date of purchase or 5,000 hours of compressor run time, whichever occurs first; and have an authorized service-and-repair facility located in California to perform warranty repairs.

TRU OEMs shall also provide to CARB, monthly production reports for the previous calendar month for each TRU, TRU generator set, or zero-emission truck TRU produced for sale in California, North America, Canada, and Mexico. The information that needs to be included in the monthly reports can be found in section 2477.20(l) of the final regulation order: <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2021/tru2021/fro.pdf>.

What Should Owners and Operators of TRUs Do in Preparation for the Requirements That Go into Effect in 2023?

Beginning **December 31, 2023**, TRU owners are required to turnover at least 15 percent of their truck TRU fleet (defined as truck TRUs operating in California) to zero-emission technology each year (for seven years). Truck TRU owners should make compliance decisions **now** and order compliance technology, as well as install needed infrastructure **as soon as possible** so that compliance with this requirement is achieved by the required date (Note:

the number of zero-emission truck TRUs required by **December 31, 2023** is dependent on the owner's truck TRU fleet size). Orders should be placed early, taking into consideration the delivery and installation lead times. Note that all truck TRUs operating in California shall be zero-emission by **December 31, 2029**.

Beginning **December 31, 2023**, the 2022 Amendments expand the TRU reporting requirement to all TRUs operating in California, including those based out-of-state. TRU owners are also required to pay TRU operating fees and affix CARB compliance labels to their TRU every three years, for each TRU operated in California.

What Should Owners and Operators of Applicable Facilities Do in Preparation for the Requirements that Go into Effect in 2023?

The 2022 Amendments include new requirements for applicable facilities, defined as refrigerated warehouses or distribution centers with a building size of 20,000 square feet or greater, grocery stores with a building size of 15,000 square feet or greater, seaport facilities, and intermodal railyards with TRU activity (one or more TRUs). Beginning **December 31, 2023**, applicable facility owners or operators are required to register the facility with CARB, pay fees every three years, and ensure that only compliant TRUs operate at their facility. There are two ways applicable facilities may fulfill this requirement:

- Option 1: Report all TRUs that operate within the applicable facility property boundary to CARB (or)
- Option 2: Provide a declaration to CARB, under penalty of perjury, that non-compliant TRUs subject to the Proposed Amendments will not be permitted to operate within the property boundary.

Applicable facility owners or operators choosing option 2 may verify TRU compliance onsite (by checking for a valid TRU compliance label or looking-up a TRU's compliance status on CARB's website) and not allow non-compliant TRUs to operate on their property, require the use of compliant TRUs in their contracts, or only do business with companies that are on [CARB's 100 percent compliant list](#).

For More Information

To obtain a copy of the amended TRU ATCM or other related compliance assistance documents, visit the TRU website at <https://ww2.arb.ca.gov/our-work/programs/transport-refrigeration-unit>. Additional assistance may be provided by calling the toll-free TRU Help Line at 1-888-878-2826 (1-888-TRU-ATCM). If you need this document in an alternative format or another language, please email freight@arb.ca.gov. TTY/TDD/Speech users may dial 711 for a California Relay Service.