

Advanced Clean Trucks

Accelerating Zero-Emission Truck Markets

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This factsheet describes the proposed Advanced Clean Trucks (ACT) Regulation and how the California Air Resources Board plans to accelerate the first wave of zero-emission trucks.

What are California's air quality and climate targets?

California faces very challenging mandates to reduce air pollutants to protect public health and to meet state climate change targets including:

- Federal health-based ambient air quality standards (key dates in 2023 and 2031)
- 40% reduction in greenhouse gases (GHG) by 2030;
- 80% reduction in GHGs by 2050; and
- 50% reduction in petroleum use by 2030

Meeting all of these goals requires a bold transformation in all sectors including stationary, industrial, residential, and transportation with significant contributions from public agencies, private businesses and individuals.

Why do we need zero-emission technology in the transportation sector?

Mobile sources and the fossil fuels that power them are the largest contributors to the formation of ozone, greenhouse gas emissions, fine particulate matter (PM_{2.5}), and toxic diesel particulate matter. In California, they are responsible for approximately 80% of smog-forming nitrogen oxide (NO_x) emissions. They also represent about 50% of greenhouse gas emissions when including emissions from fuel production, and more than 95% of toxic diesel particulate matter emissions. Zero-emission vehicles have no tailpipe emissions. When compared to diesel vehicles, they are two to five times more energy efficient, reduce dependence on petroleum, and reduce GHG emissions substantially.

What is the Advanced Clean Truck Regulation?

The proposed Advanced Clean Truck Regulation is part of a holistic approach to accelerate a large-scale transition of zero-emission medium-and heavy-duty vehicles from Class 2B to Class 8. The proposal is subject to change until the Board makes a final decision, expected in 2019 or 2020. The proposed regulation has two components including a manufacturer sales requirement, and a reporting requirement:

- **Zero-emission truck sales:** Manufacturers who certify Class 2B-8 chassis or complete vehicles with combustion engines would be required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2030. By 2030, zero-emission truck/chassis sales would need to be 50% of class 4 – 8 straight trucks sales and 15% of all other truck sales.
- **Company and fleet reporting:** Large employers including retailers, manufacturers, brokers and others would be required to report information about shipments and shuttle services. Fleet owners, with 100 or more trucks, would be required to report about their existing fleet operations. This information would help identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs.

What types of trucks are currently suitable for electrification?

Today, electric drivetrains are well suited to operating in congested urban areas for stop-and-go driving where conventional engines are least efficient. Battery-electric and fuel-cell electric trucks, buses, and vans already are being used by fleets that operate locally and have predictable daily use where the trucks return to base to be charged or fueled.

Are any zero-emission trucks commercially available?

There are more than 70 different models of zero-emission vans, trucks and buses that already are commercially available from several manufacturers. Most trucks and vans operate less than 100 miles per day and several zero-emission configurations are available to serve that need. As technology advances, zero-emission trucks will become suitable for more applications. Most major truck manufacturers have announced plans to introduce market ready zero-emission trucks in the near future.

What does it cost to charge a battery electric truck?

The electricity cost to charge battery electric trucks varies based on how fast you charge, the utility rate, and the time of day. A calculator for estimating electricity cost is at <https://www.arb.ca.gov/msprog/actruck/tools/chargecalc.xlsm>. In many cases, a fleet owner who also owns charging stations and charges trucks overnight can have little to no net electricity costs after the low carbon fuel standard credits in California are included (<https://arb.ca.gov/fuels/lcfs/lcfs.htm>).

How can fleet owners afford to operate zero-emission trucks?

Zero-emission trucks have higher upfront costs but have lower operating costs than conventional trucks. Today, the total cost of ownership in California can be comparable to conventional trucks for certain duty cycles without grants or rebates. As battery prices fall and technology continues to improve, the total cost of ownership is expected to become more favorable. Incentives are currently available to offset some or all of the higher vehicle capital costs and some of the early infrastructure costs to help fleets begin transitioning to zero-emission vehicles now.

What incentives are available for purchasing zero-emission trucks?

Several funding programs are available to support the use of advanced technologies administered by state agencies, federal agencies, and local air districts. For example, the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project provides point-of-sale rebates to offset the upfront cost of advanced technologies. A list of all zero-emission vehicles that are currently eligible for funding is available at <https://www.californiahvip.org/eligible-technologies/>. For more information about funding opportunities visit <https://ww2.arb.ca.gov/our-work/topics/incentives>.

Where can I get more information?

Information about the Advanced Clean Trucks Regulation and upcoming meetings and events is available at <https://www.arb.ca.gov/msprog/actruck/actruck.htm>. If you have questions or wish to obtain this document in an alternative format or language, call (916) 323-2927. For TTY/TDD/Speech-to-Speech users, dial 711 for the California Relay Service.