



Zero-Emission Trucks 101

Ready to cut costs and modernize your fleet? Zero-emission trucks typically offer lower operating costs, easier service, and a smooth, powerful ride. With no tailpipe pollution, they also help keep the air cleaner for drivers and neighboring communities. Across California, fleets of all sizes are making the switch, saving money and improving local air quality along the way.

Zero-Emission Technology 101

There are two types of zero-emission trucks: battery electric and fuel cell electric.

A battery electric truck is powered by electricity and must be plugged into charging equipment to recharge. While upfront vehicle costs for battery electric vehicles (BEVs) may be higher than conventional vehicles, the total cost of ownership is typically lower. Electricity for charging generally costs less than conventional fuels, and electric motors have fewer moving parts, which eliminates the need for oil changes, spark plugs, or fuel filters. Regenerative braking also extends brake pads life by using the electric motor to slow the vehicle, resulting in lower maintenance costs and long-term savings.

Fuel cell electric trucks use compressed hydrogen to generate electricity that powers the electric motor. Hydrogen refueling is faster than charging electric vehicles and, like diesel trucks, can refuel in about 20-40 minutes at public hydrogen stations built for larger vehicles.



Steps to Add Zero-Emission Trucks to Your Fleet

Switching to zero-emission trucks doesn't have to be complicated. If you run a small fleet, you can often start by simply plugging in overnight at your facility. Larger operations require a bit more planning – but there's plenty of free support to guide you every step of the way.

1. Learn about zero-emission vehicles



Start by exploring ZEV TruckStop for free trainings and resources about zero-emission vehicles, fueling, infrastructure, and incentives. Then, use Cal Fleet Advisor for free technical assistance as you explore your ZEV options.



2. Identify your fleet's needs & identify your team



Ask yourself: How far do I drive daily? Are trips local or long-distance? When and where is vehicle downtime? These answers help determine the right vehicles and fueling/charging strategies. Involve your fleet manager, utility, vehicle and charger manufacturers, consultants, and permitting agencies early in the process to make planning easier.

3. Explore your options for charging or fueling



Fleets can install onsite chargers or use public charging stations. You can also choose subscription services like Truck-as-a-Service or Charging-as-a-Service, where a provider takes care of charging solutions for a regular fee. To identify public charging stations, check infrastructure maps.



4. Choose a vehicle



Over 150 Class 2b-8 ZEV models are commercially available. Use vehicle catalogs to find the best fit for your fleet.



5. Plan for and build out infrastructure, if needed



Charging infrastructure takes time to develop, so start early to ensure your chargers are ready when your vehicles are. Engage your utility early to understand timelines, costs, and available incentives. Infrastructure needs vary by fleet size, technology, and power demand, while costs depend on utility upgrades, equipment, installation, and optional energy storage or solar.

6. Plan for financing and apply for incentives



Plan for upfront costs. Leverage available incentive programs, like the Clean Truck and Bus Voucher Incentive Project (HVIP) and consider Low Carbon Fuel Standard (LCFS) credits to lower your total cost of ownership.



7. Train drivers and maintenance staff



New technology requires new procedures. Involve operators early and provide training to ensure a smooth process.

8. Online Resources



For more information visit the ZEV 101 page.

