



CALSTART

# Zero-Emission Trucks: The Facts

May 2023

**Zero-emission trucks (ZETs) are urgently needed** to address the harms associated with the significant air pollution and greenhouse gases (GHGs) emitted from fossil fueled trucks, which threaten human health and hinder the nation's ability to meet our carbon-reduction targets to address the climate crisis that threatens our country.

ZETs – whether battery-electric or fuel cell electric – run more efficiently than their ICE counterparts and emit no tailpipe emissions.



## ZETs have grown in popularity and availability in recent years

- [Over 5,480 ZETs on the road today](#)
- [Over 140 zero-emission models available from more than 40 truck manufacturers](#)
- Capable of meeting the [duty cycle requirements](#) of the [majority of freight routes](#)
- [Ninety percent of the country's largest fleets committed to fully transition to ZETs](#)
- [More than 70 companies](#) call for an acceleration in the growth of ZETs
- [Historic support](#) available to help fleets transition, including financial incentives like vouchers, grants, and tax credits, utility programs and EV-friendly rates for charging, and technical assistance.



## The benefits of ZETs far outweigh the costs

- Battery-electric trucks [lower life cycle carbon emissions 44 to 79 percent](#)
- [Lower total cost of ownership \(TCO\)](#), including for heavy-duty tractors by 2030
- [\\$485 billion in health and environmental benefits](#) if all MHD vehicles transition by 2040
- Creates well-paying jobs in [growing sectors](#) of the economy
- Higher utilization of the electrical grid will [save ratepayers money](#)
- Action is needed to safeguard our supply chain from [climate risks like stronger and more frequent disasters](#)
- The cost of inaction is far greater than the cost to transition to zero-emission trucks

## Electric utilities are well-positioned to meet the new demand from ZETs

Utilities and public utilities commissions (PUCs) have robust planning processes that enable them to sufficiently match demand and supply of electricity. Significant new loads have been added to the grid in recent decades, whether in the residential (e.g., air conditioning) or industrial (e.g., data centers) sectors.

Furthermore, [new demand from ZETs will increase gradually](#), as fleets scale deployments and coordinate with their utilities.

## Batteries are increasingly sustainable

ZET battery technology continues to improve, yielding [more powerful](#), longer-lived batteries that require [less precious metals](#).

- 1 There is also massive investment in domestic manufacturing, with U.S. battery manufacturing capacity expected to [increase nearly twenty-fold](#) between 2021 and 2030.
- 2 The industry is also pushing to extract high-value materials [more sustainably](#) and [domestically](#).
- 3 Furthermore, recycling is expected to reduce virgin material demand by [28 percent by 2050](#).



Photo Credit: Run on Less – Electric by NACFE

## The time for action is now

In the past, the trucking industry has risen to the challenge of [reducing NOx emissions](#) to protect public health.

CALSTART is confident it will now do the same to reduce carbon emissions in line with U.S. commitments. As in the past, a clear nationwide market signal combined with financial support is critical. Historic investments through the Bipartisan Infrastructure Law and the Inflation Reduction Act are in place and ready to meet a strong EPA Greenhouse Gas Phase 3 rule.

## Charging infrastructure build-out is already underway



### Depot Charging

Fleets must plan ahead in order to secure necessary site-level grid upgrades to support charging infrastructure. The majority of electric truck charging will take place at [private depots](#), often overnight when electricity demand is low, so the need for new electricity generation will be tempered. The new generation that is needed is expected to be zero-emission as well, since [clean energy is now cheaper than fossil fuel power plants](#).



### Public Charging

In addition to depot charging, many [companies](#) – including major [manufacturers](#) and [truck stop operators](#) – have announced plans to build out public charging. Public charging is already available in [California](#) and [Oregon](#), and [historic federal funding](#) is available to support states in building out ZET charging along key corridors. [Charging-as-a-service](#) facilities and [hydrogen refueling stations](#) are also coming online, and temporary mobile charging solutions are increasingly available to help fleets in the interim.

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CALSTART works with its member companies and agencies to build a high-tech clean-transportation industry that creates jobs, cuts air pollution and oil imports and curbs climate change. We work with the public and private sectors to knock down barriers to innovation, progress and drive the transportation industry to a clean and prosperous future.

