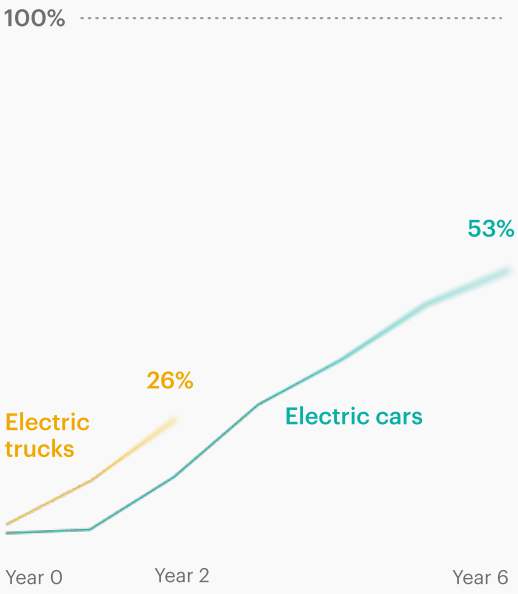
Will trucks electrify quicker than cars?

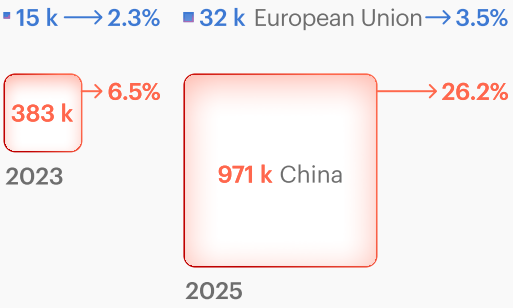
As electric cars become more mainstream, attention is turning to how quickly the world's second-largest oil-consuming transport mode – trucks – can electrify. Trucks are a critical component of modern supply chains and are major oil consumers, exceeding the energy demand of the aviation and shipping sectors combined. The extent and speed of truck electrification therefore has significant implications for global oil markets.

As recently as 2020, the electric truck sales share globally was below 0.5%, and many viewed truck electrification as particularly difficult, potentially requiring innovative technologies such as solid-state batteries. By 2025, however, electric truck sales had reached almost 9% globally – and over 25% in China – by relying on lithium-ion batteries, the same technology used in passenger cars. In December 2025, the electric heavy-duty truck sales share in China even hit around 50%. Although this was partly due to a sales rush in anticipation of expected policy changes, this recent surge in electric truck adoption could indicate a profound shift in the Chinese truck market – with implications for truck electrification elsewhere.

SALES SHARE OF ELECTRIC TRUCKS IN CHINA SINCE BECOMING COMPETITIVE ON TOTAL COST OF OWNERSHIP



STOCKS AND SALES SHARE OF ELECTRIC TRUCKS, EUROPEAN UNION AND CHINA



Electric trucks remain around two to three times more expensive to purchase than their diesel counterparts, posing financing challenges, particularly for smaller businesses. However, for commercial fleets, the total cost of ownership (TCO), or how much it costs to purchase, deploy and manage a truck over the full ownership period, is often more important than upfront price, as fleets are tightly optimised to minimise operating costs. In China, battery electric trucks already have a lower TCO than diesel models, even for heavy-duty applications with daily driving distances of 500 km, creating a strong economic incentive to switch to electric. This is not yet the case in the European Union, currently another of the world's largest electric truck markets, but TCO parity is expected there before 2030. Adequate charging infrastructure is equally essential, and China has moved early by deploying public truck chargers – with an estimated 70 000 charging points at the end of 2025 – as well as battery swap stations.

Electric trucks require multiple enabling conditions – technology readiness, competitive TCO, access to financing and reliable charging infrastructure – before deployment can scale. When these elements align, however, adoption can accelerate suddenly, potentially more rapidly than in consumer-driven markets such as electric cars.