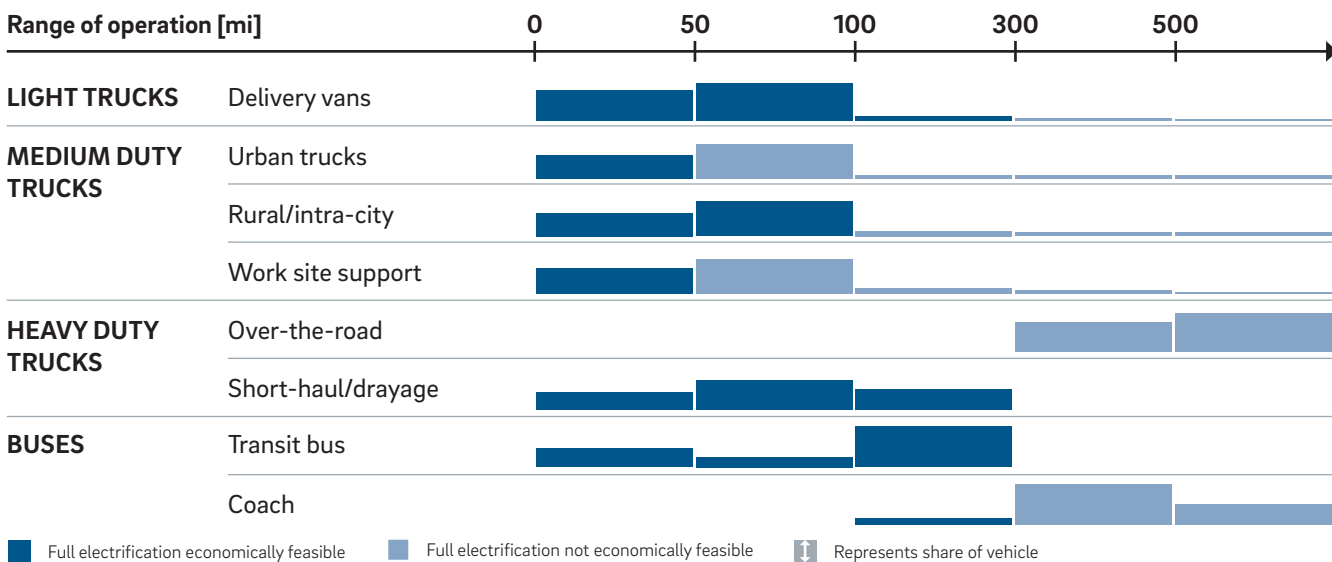


Roland Berger Facts & Figures

Automotive 11/2017

Commercial vehicle electrification in the US is driven mainly by Total Cost of Ownership (TCO) benefits. The cost of electric powertrains as well as the operating cost benefits strongly depend on use cases and operating ranges. Incentives are available in some US states to offset higher initial investments.

ECONOMIC OPERATING RANGE OF BATTERY ELECTRIC COMMERCIAL VEHICLES (2025)¹⁾



1) High incentive states (California, Illinois, New York)

Source: Roland Berger

Economic feasibility

With battery costs coming down and incentives in place in some states, full electrification will become economical in 2025 for use cases with operating ranges below 300 miles. The first applications to be electrified will be inner city delivery vans and trucks as well as heavy duty drayage trucks. The return-to-base driving pattern of these vehicles supports the charging cycle. Long-haul trucks are not expected to become electrified, even at lower battery costs due to payload penalty of the additional battery required. Trade-offs also have to be made for transit buses: although electric buses will have TCO benefits, the additional battery weight directly reduces passenger capacity for buses that already operate at their weight limits today.

2025

Full electrification will become economical for use cases with operating ranges below 300 miles

Expected volumes

Historically, the truck segment has been slow to adopt new technologies. Our low case is based on the historic adoption dynamics of the industry, while the high case assumes faster adoption.

US SALES OF ALL-ELECTRIC TRUCKS IN 2025 ['000]

| | Light trucks | Medium duty trucks | Heavy duty trucks | Buses |
|-----------|--------------|--------------------|-------------------|-------|
| High case | 44.0 | 18.0 | 17.0 | 1.0 |
| Low case | 29.0 | 12.0 | 11.0 | 0.7 |

Source: Roland Berger

