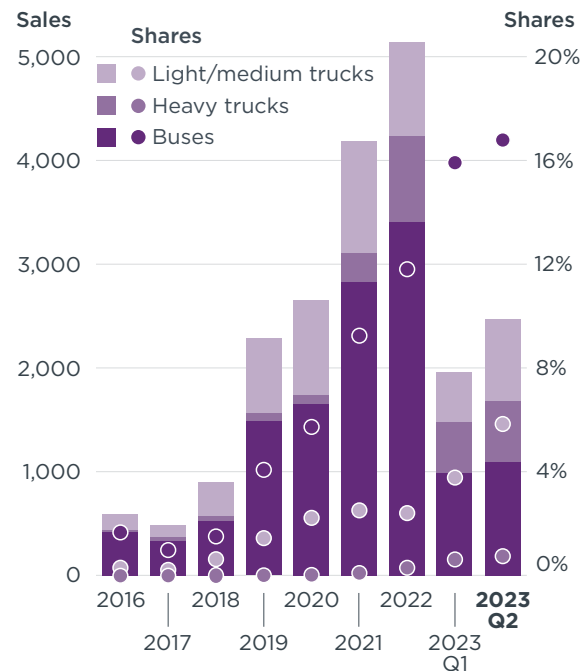


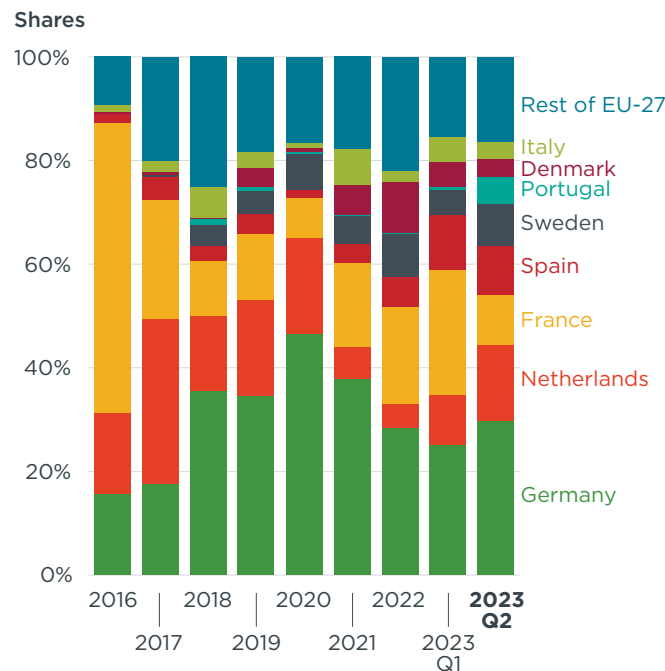
EUROPEAN HEAVY-DUTY VEHICLE MARKET DEVELOPMENT QUARTERLY (JANUARY-JUNE 2023)

EAMONN MULHOLLAND AND NICOLE EGERSTROM

Sales of zero-emission heavy-duty vehicle by segment



Sales shares of zero-emission heavy-duty vehicle by Member State



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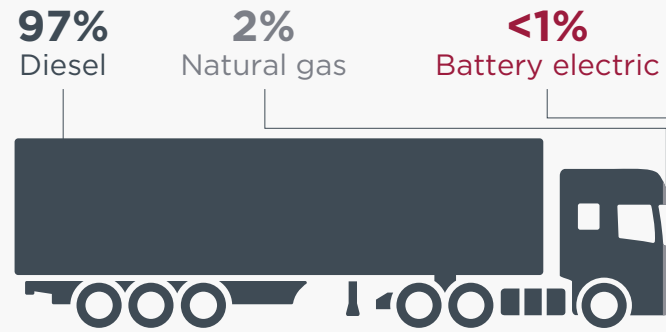
In the second quarter of 2023, just under 2,500 new zero-emission heavy-duty vehicles were sold in the EU-27—a 25% increase over the first quarter of 2023—including 1,100 buses and coaches, 790 light and medium trucks, and 580 heavy trucks. The sales share of heavy trucks has increased slightly in the second quarter of 2023 to 0.8% up from 0.6% compared to the first quarter of 2023. Shares of zero-emission light and medium trucks increased considerably again, from 4% to 6% over the same period while zero-emission buses and coaches rose from 16% to 17%.

30% of all zero-emission heavy-duty vehicles sales occurred in Germany, roughly equivalent to their 27% sales share of all heavy-duty vehicles, while 14% of the sales of zero-emission heavy-duty vehicles occurred in the Netherlands, compared to that country's 10% share of all heavy-duty vehicles.

1. HEAVY TRUCKS

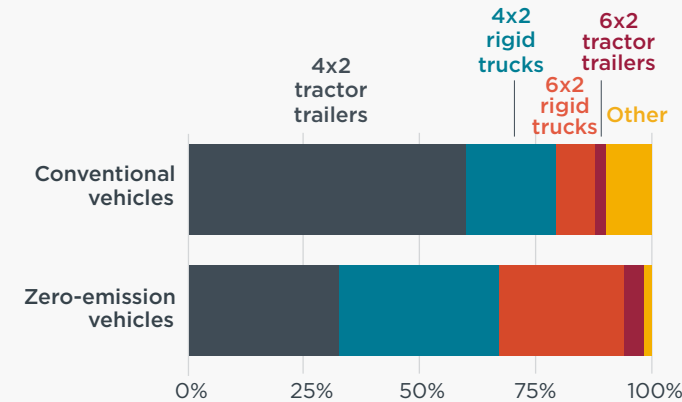
Heavy trucks represented 79% of the sales of all heavy-duty vehicles. Of the 74,000 heavy trucks sold in the second quarter of 2023, just 580 were zero-emission vehicles—almost double the entirety of zero-emission heavy truck sales in 2021. Most of these were rigid body trucks, while roughly 30% were tractor trailers (the most popular heavy-duty vehicle segment in Europe). Volvo Group, which consists of Volvo Trucks and Renault Trucks, produced nearly 70% of all zero-emission heavy trucks despite accounting for only about 25% of conventional vehicle sales in the same period. IVECO and DAF combined sold just 3% of Europe’s zero-emission heavy trucks yet sold 22% of conventional heavy trucks. Non-EU manufacturers do not have a significant share of the zero-emission heavy truck market, unlike their share of the more mature zero-emission bus market.

FIGURE 1.1
Sales of heavy trucks by powertrain



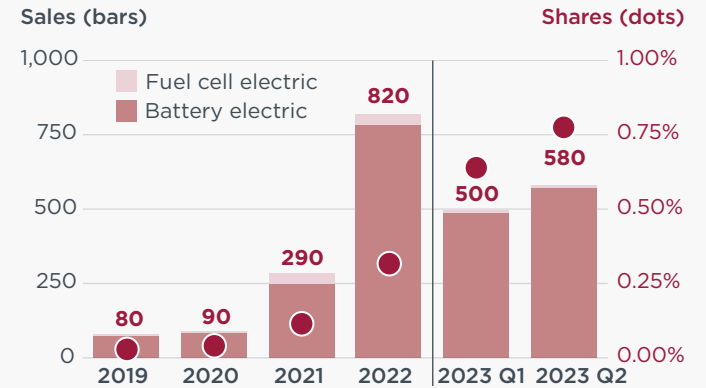
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FIGURE 1.3
Sales of zero-emission heavy trucks by configuration and powertrain



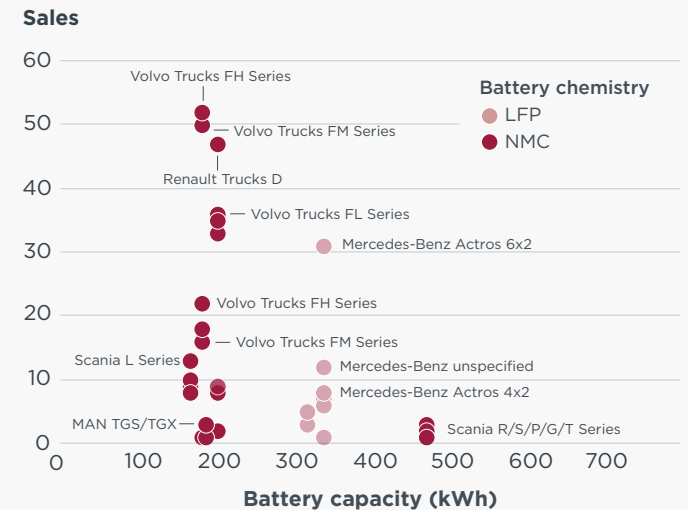
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FIGURE 1.2
Sales of zero-emission heavy trucks



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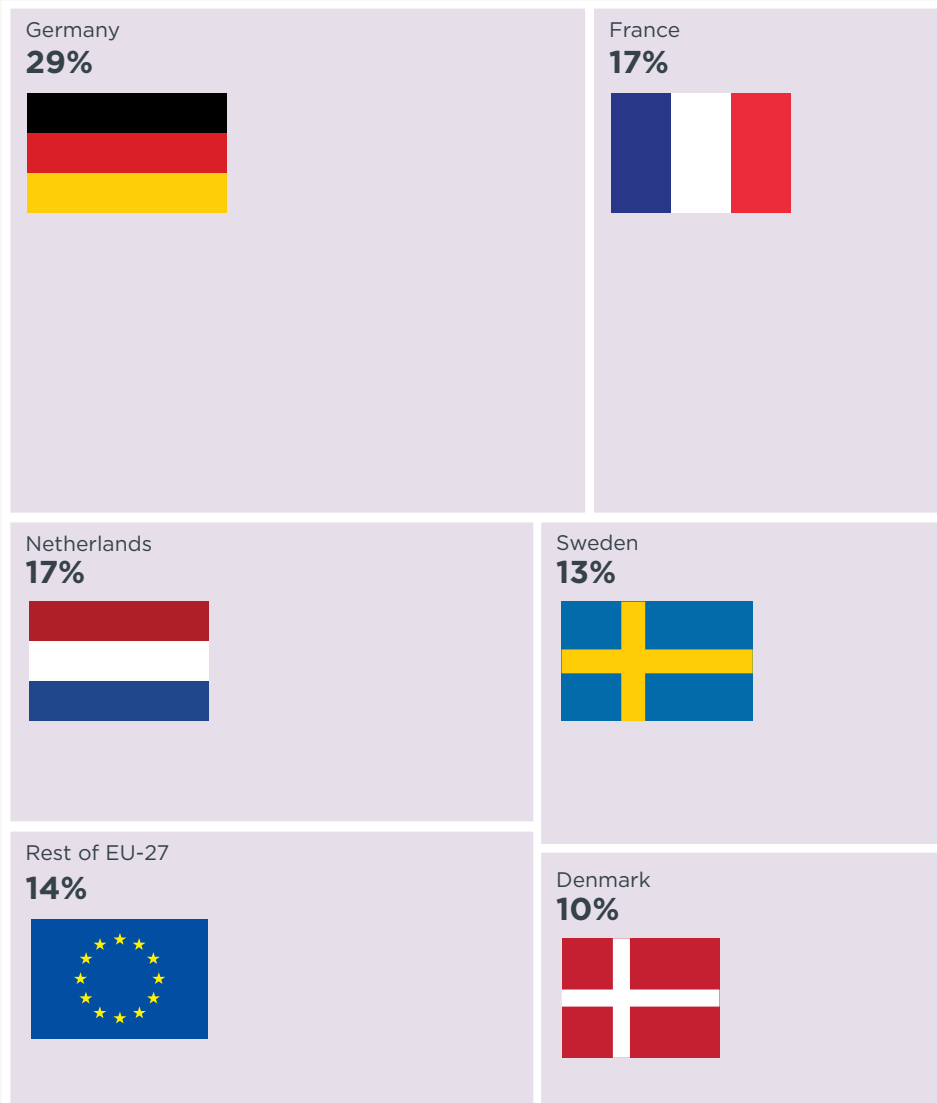
FIGURE 1.4
Sales of zero-emission heavy trucks by model and battery capacity



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FIGURE 1.5

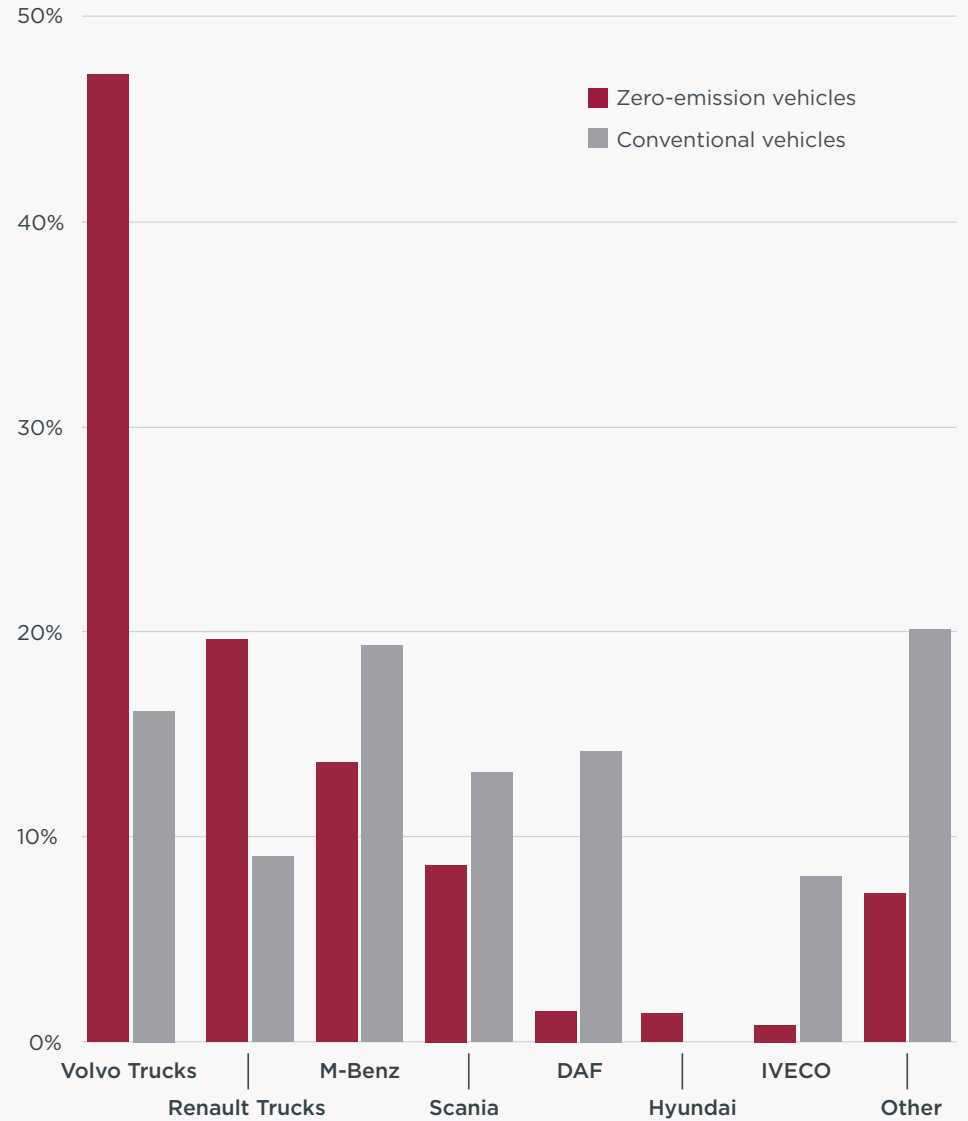
Sales of zero-emission heavy trucks by Member State



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FIGURE 1.6

Shares of heavy trucks by powertrain and manufacturer

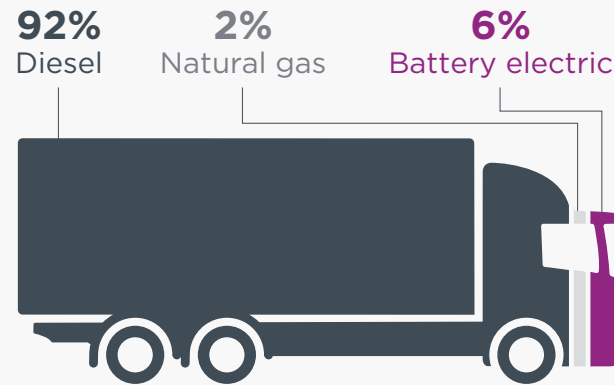


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2. LIGHT AND MEDIUM TRUCKS

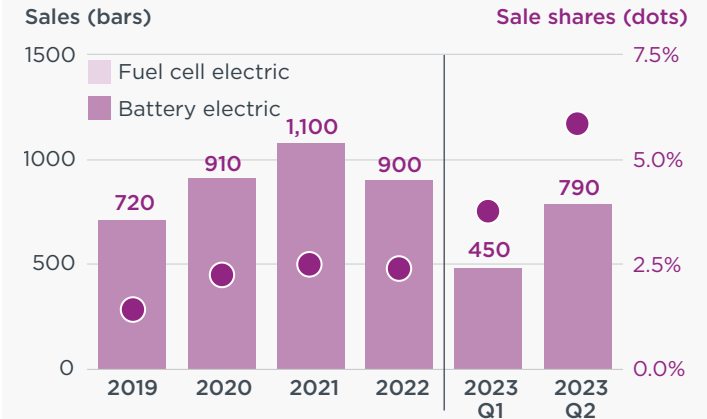
Light and medium trucks represented 14% of the sales of all heavy-duty vehicles. Of the 13,000 vehicles sold in the second quarter of 2023, 790 were zero-emission vehicles; this is a sales share increase from 4% in the first quarter of 2023 to 6% in the second quarter of 2023. More than 60% of zero-emission vehicle sales were vans (the remainder were trucks); vans only represented 24% of conventional vehicle sales. Ford is the largest supplier of zero-emission vehicles with a 70% sales share; sales are predominantly driven by their electric Ford Transit model.

FIGURE 2.1
Sales of light and medium trucks by powertrain



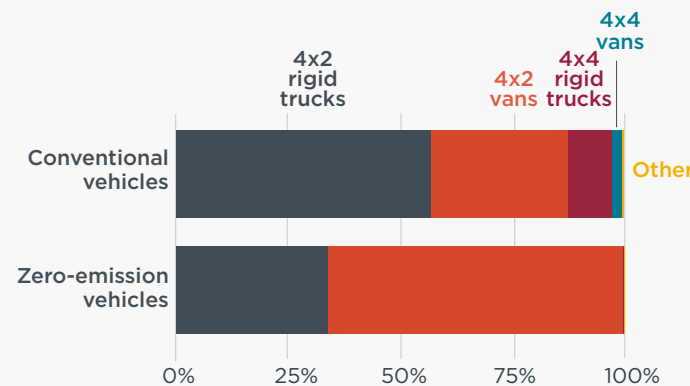
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FIGURE 2.2
Historic sales of zero-emission light and medium trucks



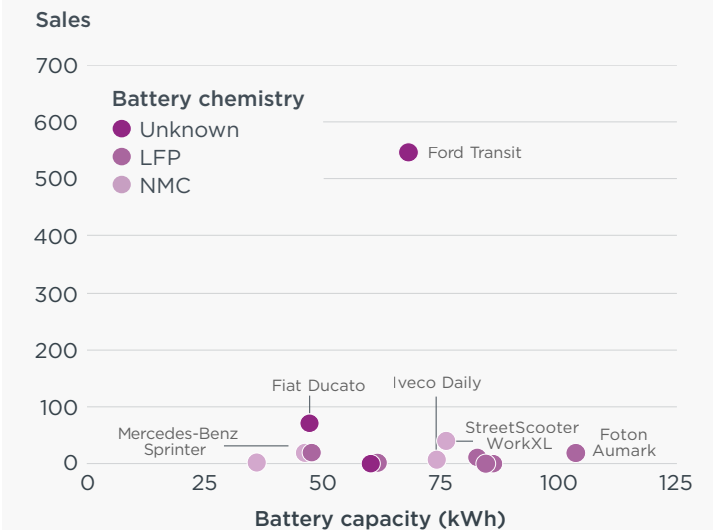
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FIGURE 2.3
Sales of zero-emission light and medium trucks by configuration and powertrain



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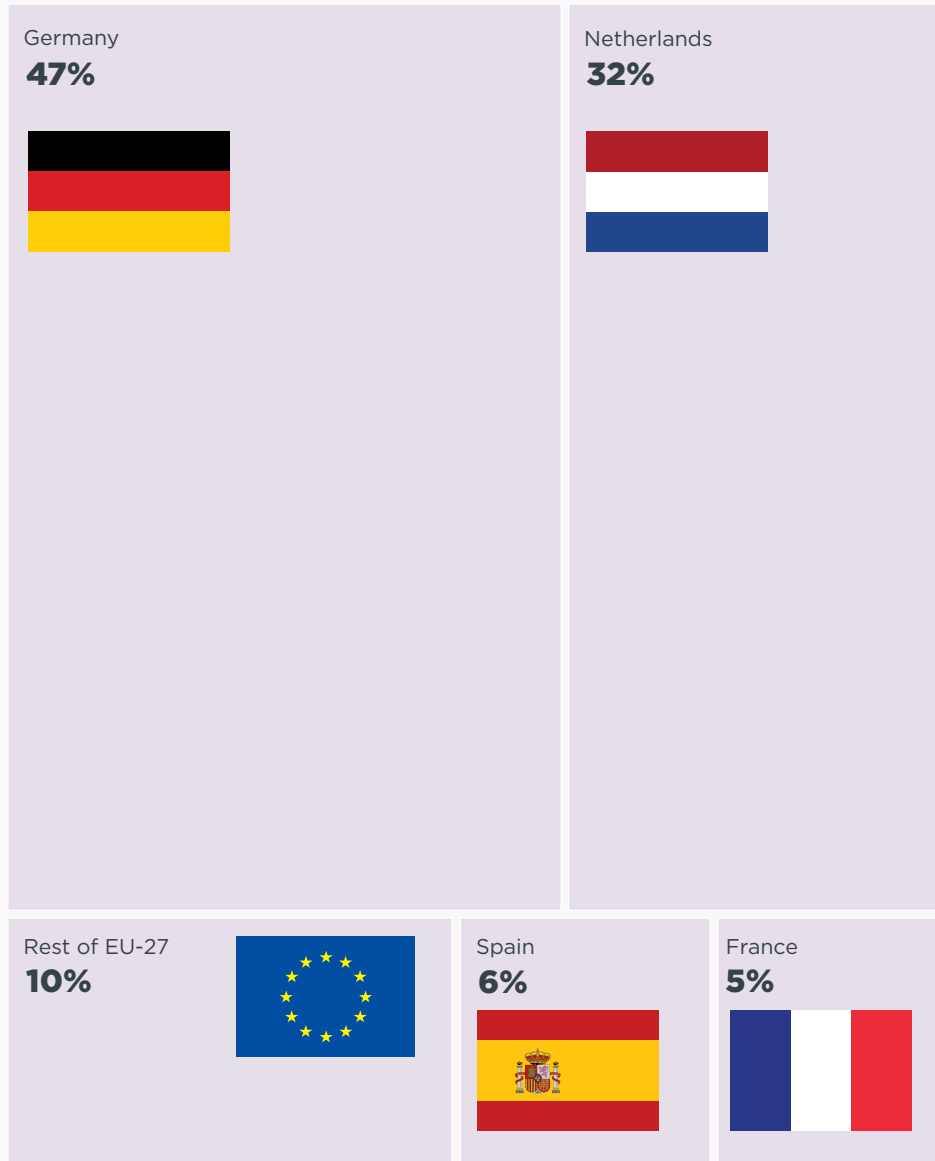
FIGURE 2.4
Sales of zero-emission light and medium trucks by model and battery capacity



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FIGURE 2.5

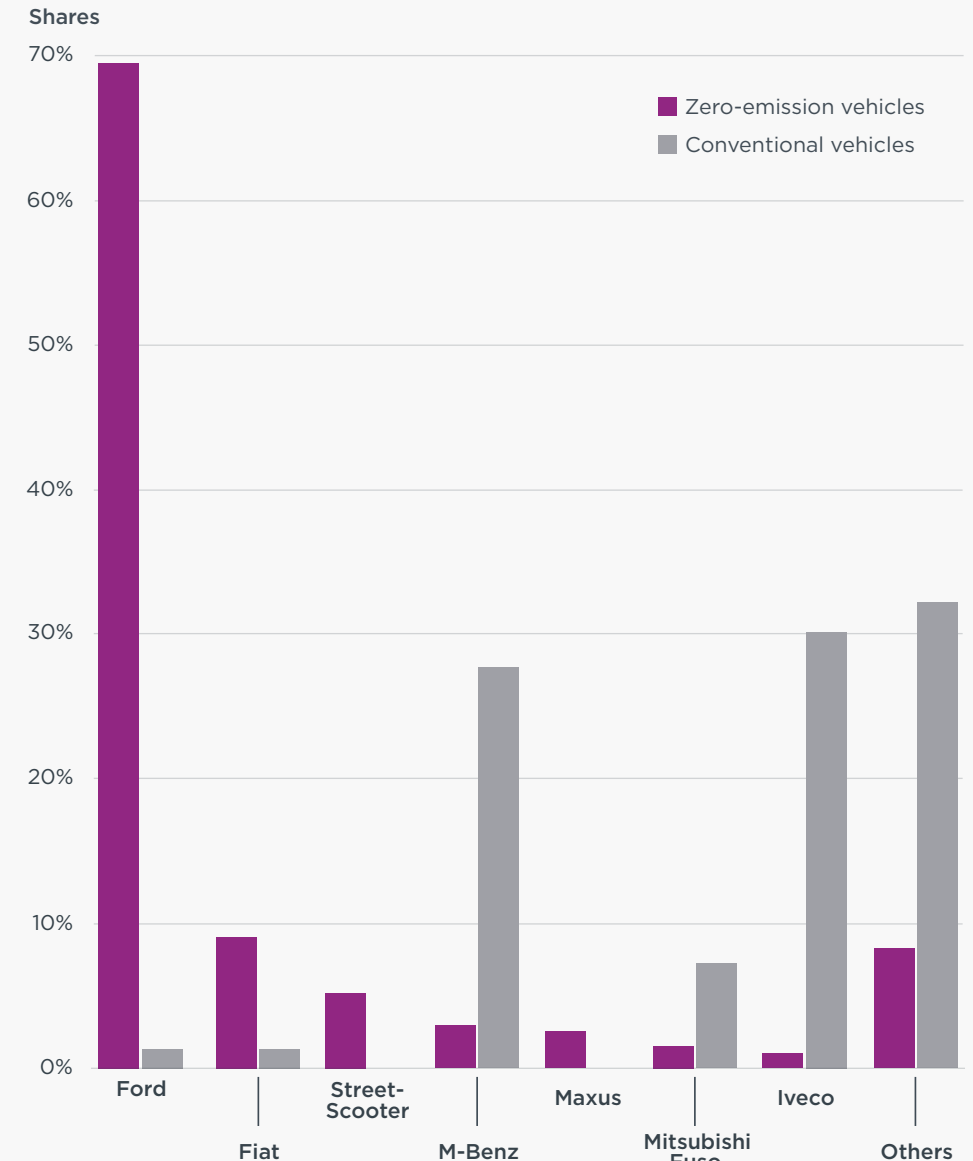
Sales of zero-emission light and medium trucks by Member State



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FIGURE 2.6

Shares of light and medium trucks by powertrain and manufacturer

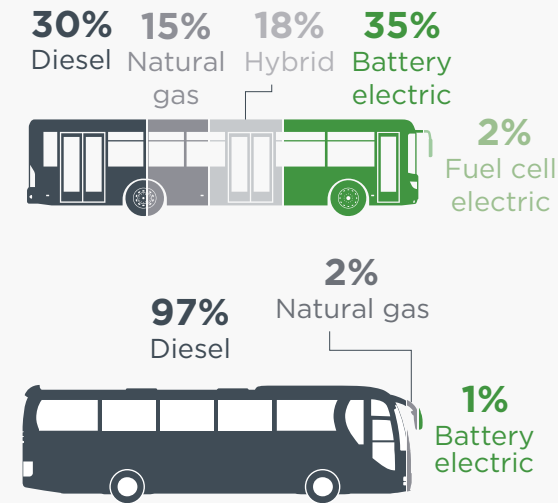


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3. BUSES AND COACHES

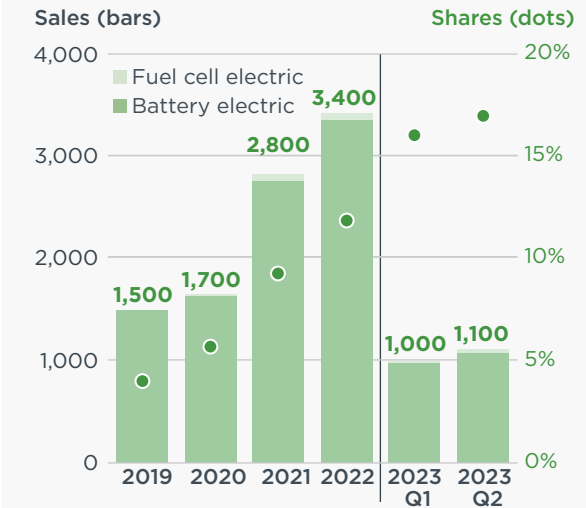
Buses and coaches represented 7% of the sales of all heavy-duty vehicles. Of the 6,500 vehicles sold in the second quarter of 2023, 1,100 were zero-emission vehicles (a 17% share). Battery electric city buses became the most popular powertrain in the second quarter of 2023, achieving a sales share of 35%, compared to the 30% share of diesel-fuelled city buses. Only zero-emission city buses were sold in six countries (Denmark, Finland, Ireland, the Netherlands, Portugal, and Slovenia) in the second quarter of 2023, and sales were more than 50% in a further four (Belgium, Lithuania, Romania, and Sweden). Solaris delivered the largest number of zero-emission buses of any manufacturer, representing 14% of all zero-emission bus sales, followed by MAN with a 12% share. Zhongtong, one of the top five zero-emission bus manufacturers in China, increased its market presence in Europe ranking third in the number of zero-emission buses put on the road in the second quarter of 2023. The zero-emission vehicle manufacturer sold just 16 buses in the EU in 2022 but sold nearly 100 zero-emission buses in the second quarter of 2023, representing a 9% share. More than 40% of the zero-emission buses sold in the EU-27 were produced by manufacturers headquartered outside of the bloc.

FIGURE 3.1
Sales of city buses by powertrain



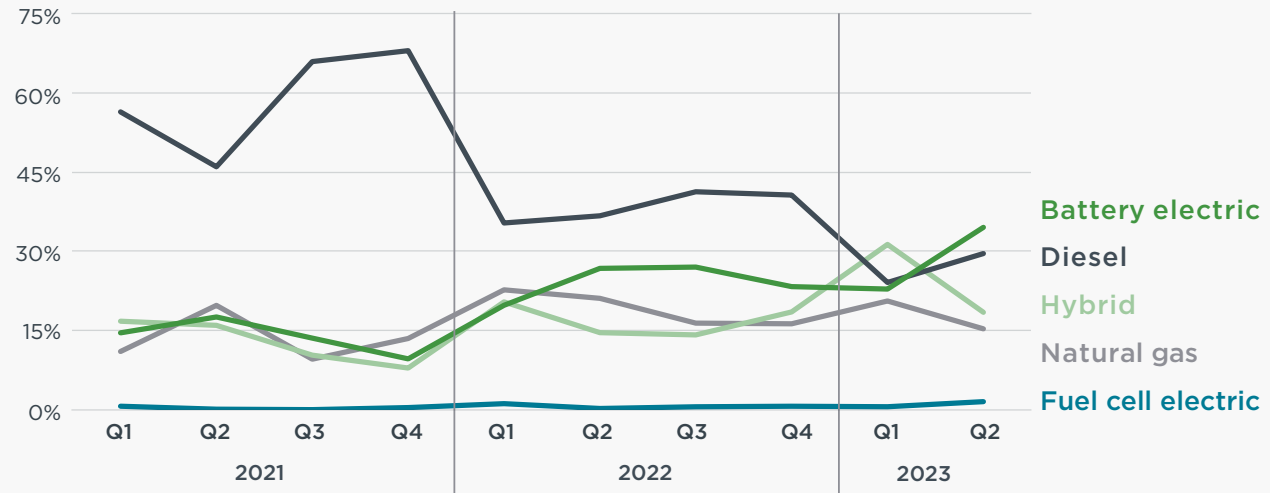
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FIGURE 3.2
Historic sales of all zero-emission buses



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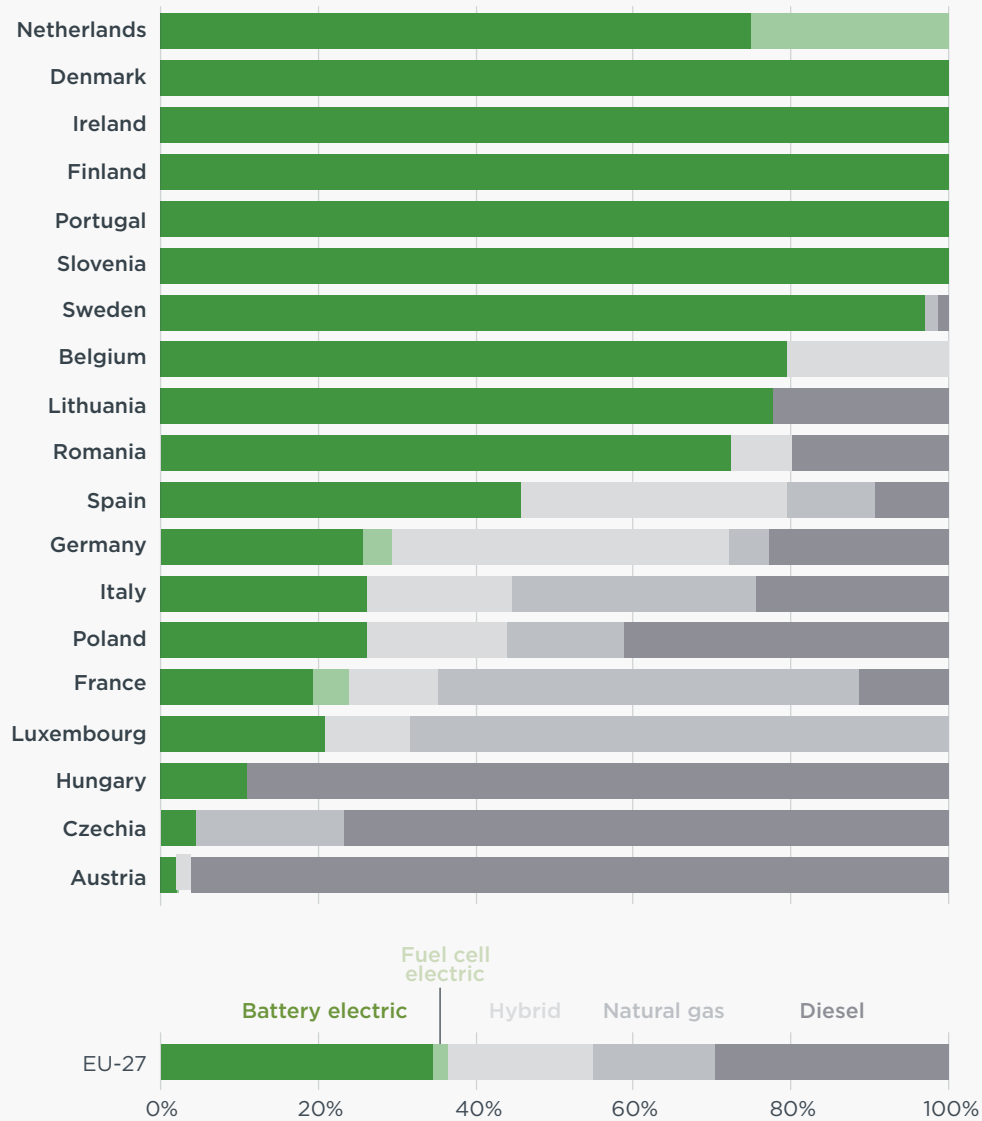
FIGURE 3.3
Sales of city buses by Member State and powertrain



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FIGURE 3.4

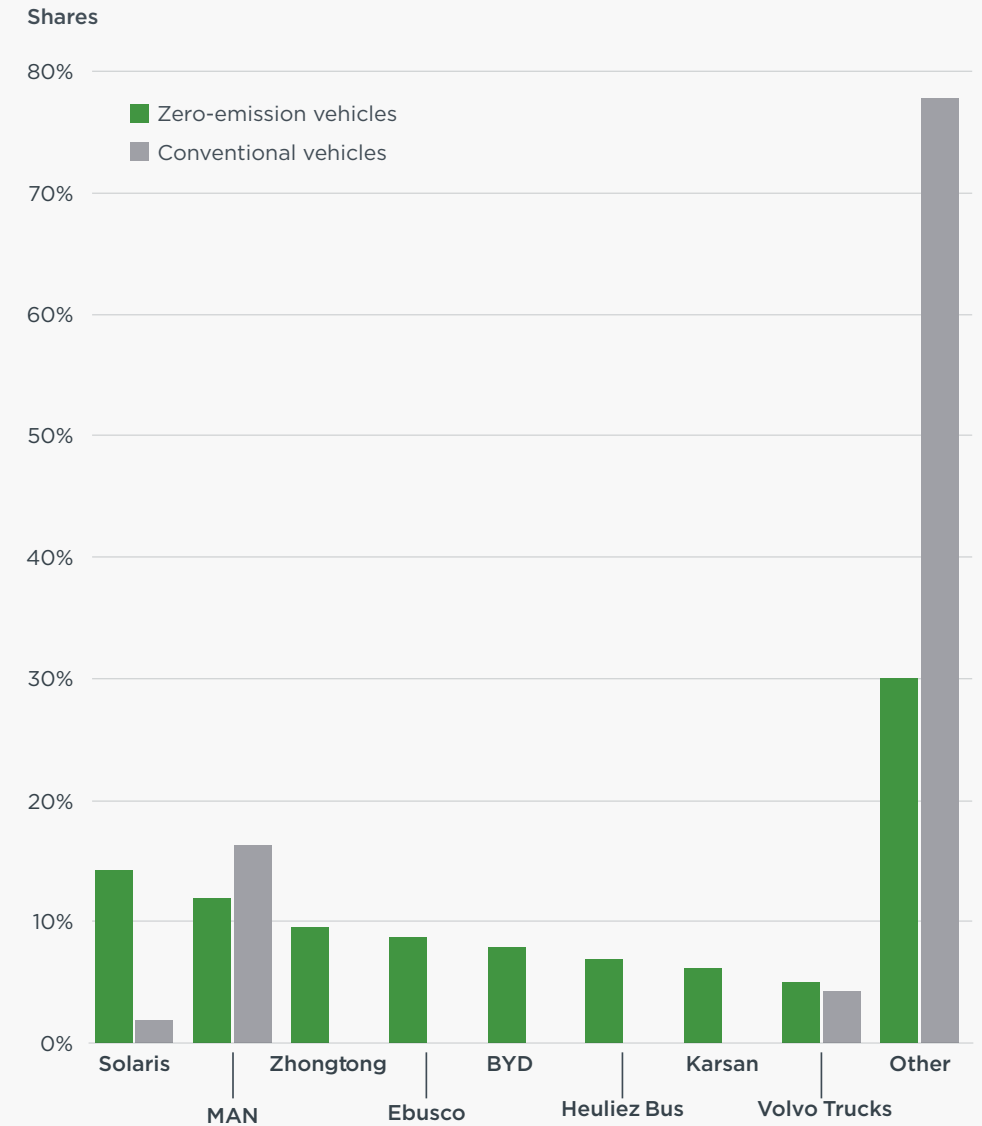
Sales of zero-emission city buses by powertrain and Member State



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FIGURE 3.5

Shares of all buses by powertrain and manufacturer



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4. SPOTLIGHT: CHARGING

The deployment of charging infrastructure must keep pace with the growth in battery-electric truck sales. Through public announcements and stakeholder discussions, we identified 160 truck-specific public charging points currently deployed in the EU-27 + Norway, Switzerland, and the UK.

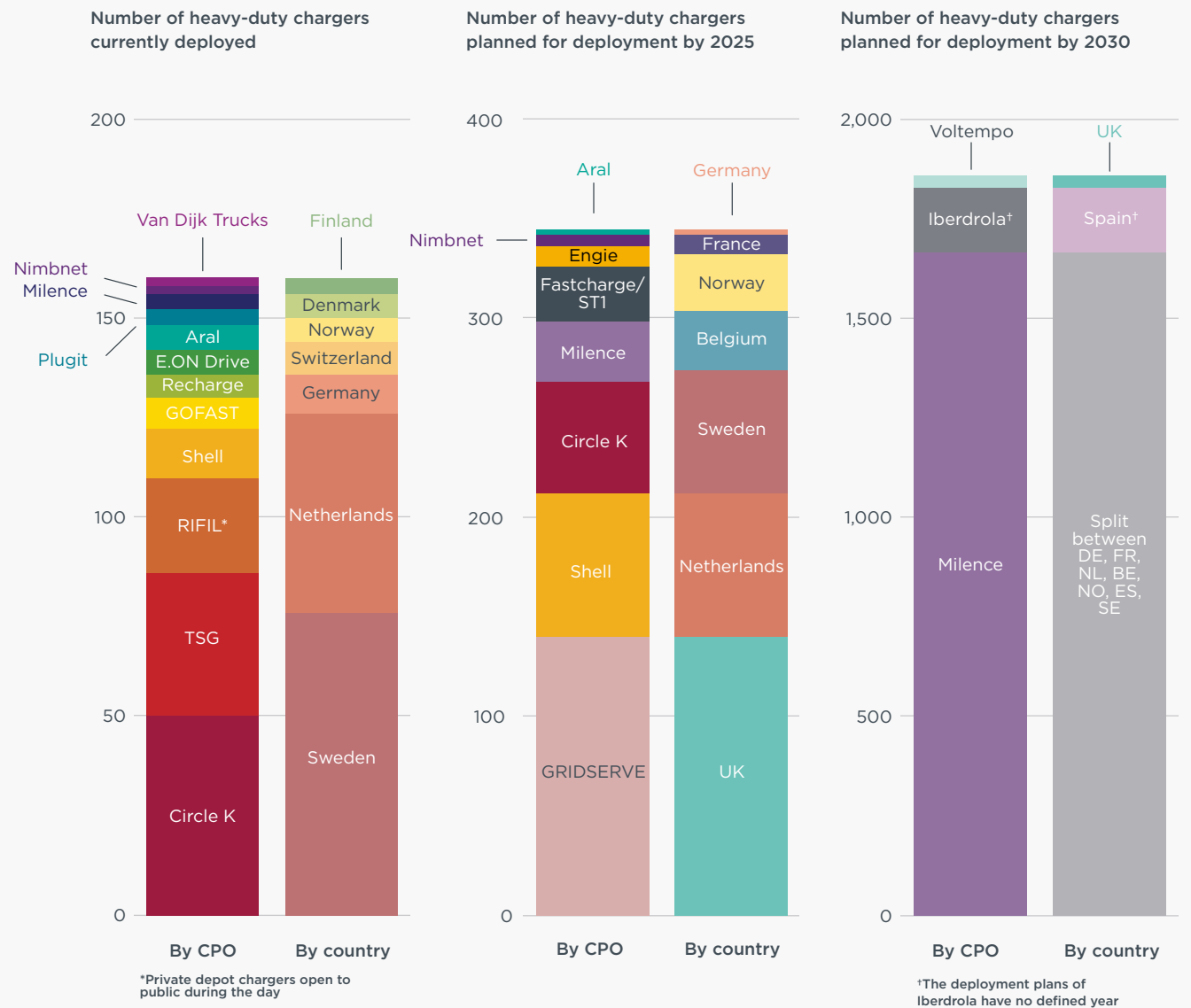
Petrol station operators Circle K and Shell are positioning themselves as leading heavy-duty charging point operators (CPOs). Circle K operates a network of 50 public heavy-duty charging points throughout Sweden, and plans to deploy another 56 by 2024. Shell has deployed 12 charging points between the Netherlands and Germany, with plans to deploy another 72 across the Netherlands.

Energy companies E.ON, Iberdrola, and Engie are also investing in public truck charging. Most notably, Iberdrola plans to deploy 160 charging points of 1.3 MW each across Spain. The timeframe is unknown, however.

Finally, new CPOs are investing in truck fast and ultra-fast charging, which will be crucial to enable long-haul trucking. TSG opened a charging plaza with 36 charging points for trucks and off-highway vehicles in the Netherlands. Milence, a joint venture between Daimler Trucks, Traton Group, and the Volvo Group, has a major investment plan of 500 million euros to build 1,700 public charging points by 2027, including megawatt chargers, spread out across Germany, the Netherlands, France, Belgium, Spain, Sweden, and Norway. Milence opened its first 4 charging points in October 2023.

FIGURE 4.1

Number of public heavy-duty charging points deployed and planned for deployment in Europe



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DEFINITIONS, DATA SOURCES, METHODOLOGY, AND ASSUMPTIONS

City bus: A passenger vehicle with a gross vehicle weight above 3.5 tons that is used exclusively in urban environments.

Coach: A passenger vehicle with a gross vehicle weight above 3.5 tons that is used exclusively in regional environments.

Heavy-duty vehicle: A commercial vehicle, intended for the transport of passengers or freight, with a gross vehicle weight above 3.5 tons.

Heavy truck: A truck with a gross vehicle weight above 12 tons.

Interurban bus: A passenger vehicle with a gross vehicle weight above 3.5 tons that is used in both urban and regional environments.

Light and medium truck: A truck or van with a gross vehicle weight between 3.5 tons and 12 tons.

Zero-emission vehicle: Any vehicle whose propulsion system produces zero combustion emissions, such as a dedicated battery-electric, fuel cell-electric, or other motor that is not driven by combustion.

All data on the sheets for **heavy trucks** and **light and medium trucks** and any figures with the heading “all zero-emission buses” in the **buses and coaches** sheet are supplied by IHS Markit; Copyright © IHS Markit, 2023. The exception is the battery size and chemistries in Figures 1.4 and 2.4 which were derived from manufacturer websites and press releases. Any figure with the heading “city buses” was sourced from Chatrou CME Solutions. All countries from the EU-27 Member States, except Bulgaria, are covered here. Data related to city buses excludes Bulgaria, Slovakia, Croatia, Malta, and Cyprus. Data for the **market focus on charging points** was derived from public announcements, press releases, and discussions with stakeholders and charge point operators.

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