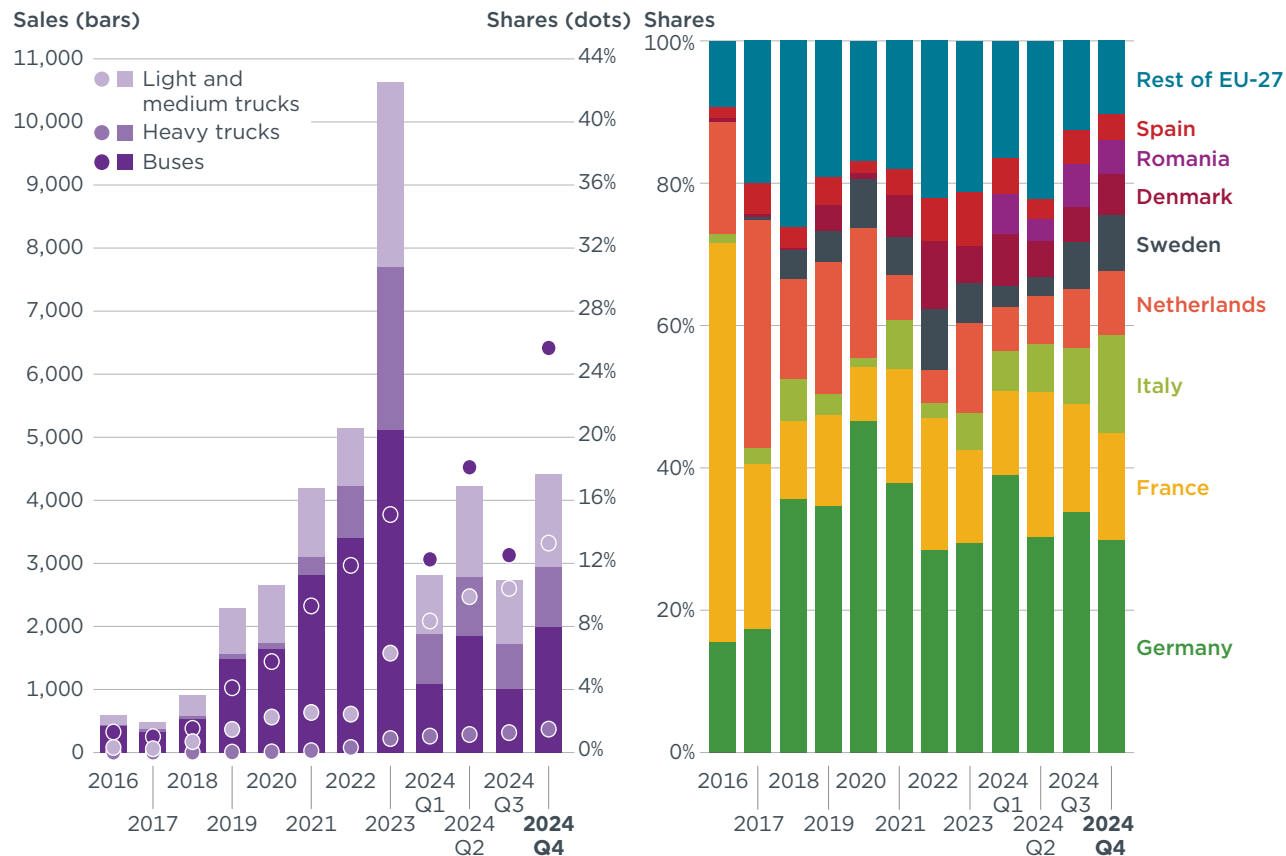


EUROPEAN HEAVY DUTY VEHICLE MARKET DEVELOPMENT QUARTERLY (JANUARY - DECEMBER 2024)

EAMONN MULHOLLAND AND PIERRE-LOUIS RAGON



SUMMARY

Just over 14,000 zero-emission heavy-duty vehicles (HDVs) were sold in 2024, up from 11,000 in 2023. Heavy trucks (above 12 tonnes) had a zero-emission sales share of 1.2% in 2024, up from 0.9% in 2023; light and medium trucks (below 12 tonnes) had a 10% zero-emission share, up from 6% in 2023; and buses and coaches saw a marginal increase to 17% in 2024 from 16% in 2023. Sale shares of zero-emission buses and coaches fluctuated from a low of 12% in the first quarter to a high of 26% in the fourth quarter, and electric city buses pushed this share significantly. When the sales share of zero-emission city buses breached 50% in the fourth quarter of 2024, it marked the first quarter in which sales surpassed internal combustion engine buses.

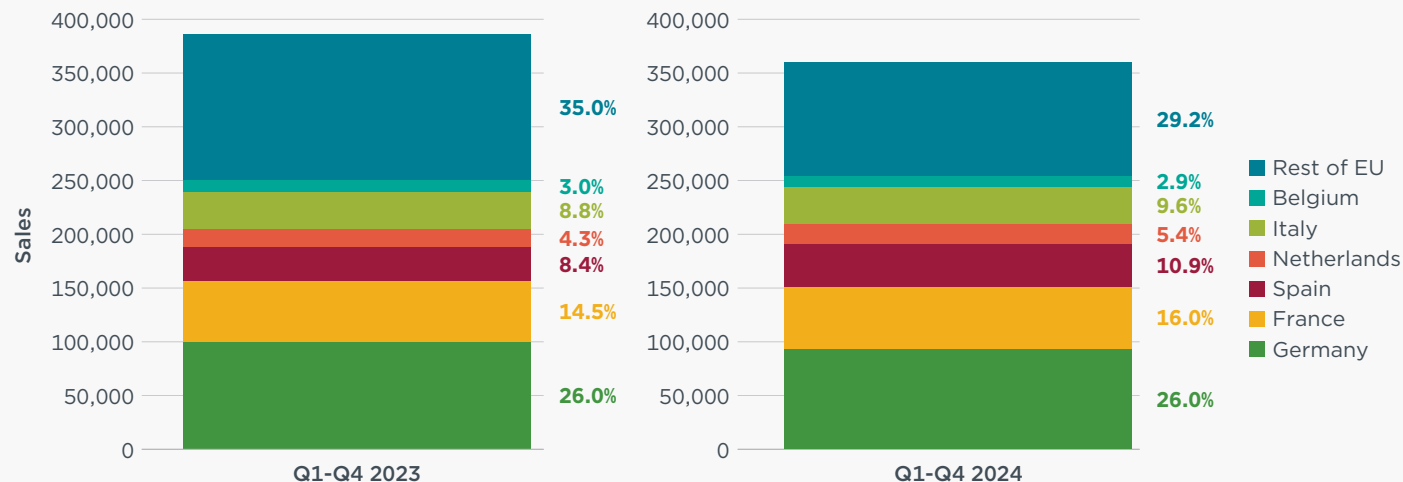
Germany led the increase in sales of zero-emission trucks: Its sales of zero-emission heavy trucks rose from 750 (1% share) in 2023 to 1,200 (1.7% share) in 2024, and its sales of zero-emission light and medium trucks rose from 1,600 (7% share) in 2023 to 2,700 (16% share) in 2024. In other major vehicle markets such as Spain and Italy, which were a combined 6% of EU-27 sales in 2024, sales of zero-emission trucks remained low despite these markets accounting for nearly 20% of the conventional truck market.

OVERALL MARKET DEVELOPMENTS

In 2024, sales of all HDVs were 360,000, down from 390,000 in 2023. This 8% drop was largely driven by a fall in sales in the third quarter, when the 74,000 vehicles sold was substantially lower than the 100,000 sold in the third quarter of 2023. Sales bounced back in the fourth quarter relative to the third by 12%, and 2024 ended with a similar sales volume as the same period in 2023. While Germany's share of the market remained the same in 2024 as it was in 2023, France and Spain increased their shares by 1.5 and 2.5 percentage points, respectively.

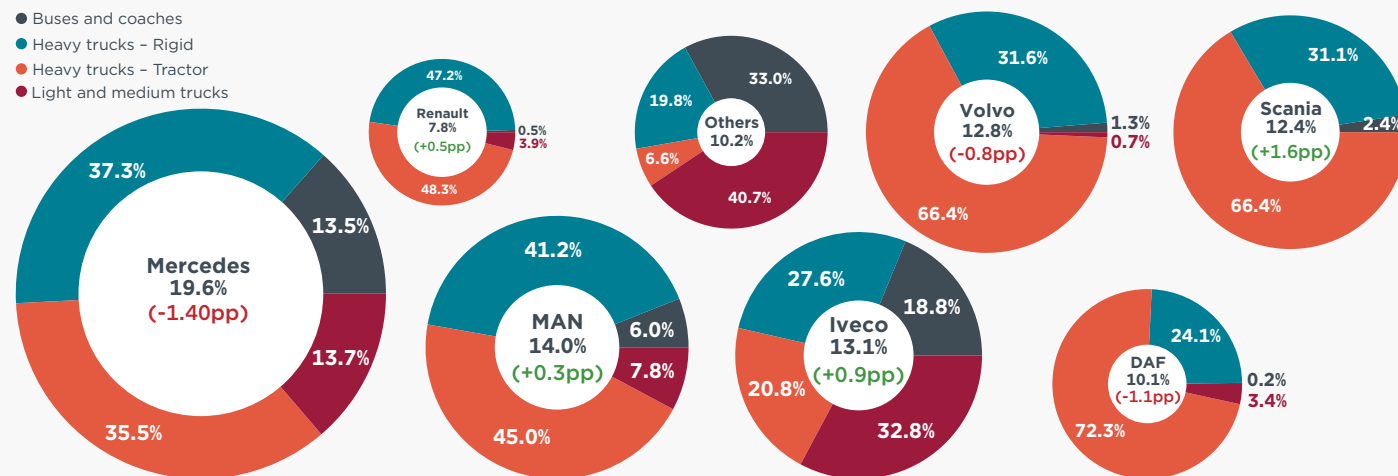
Manufacturer market shares shifted only slightly in 2024. Mercedes remained the top seller (19.6% of all HDVs) but captured less than the 21% of the market it had in 2023. Following behind were MAN with a 14% share, Iveco (13.1%), Volvo (12.8%), Scania (12.4%), DAF (10.1%), and Renault (7.8%).

Figure 1.1
Market share by country for full year 2024



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Figure 1.2
Manufacturer market share by segment for full year 2024 with brackets showing the change in the market share in percentage points relative to full year 2023



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HEAVY TRUCKS

TRUCKS WITH A GROSS VEHICLE WEIGHT ABOVE 12 TONNES

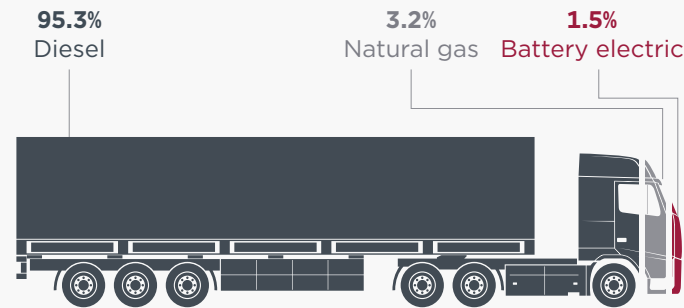
In 2024, heavy trucks were 77% of all HDV sales. Out of 275,000 heavy trucks sold, 3,400 (1.2%) were zero-emission vehicles. Sales in the segment contracted by 5% relative to 2023 when 290,000 vehicles were sold. The zero-emission market still grew against the backdrop of this contraction, as the 2,600 zero-emission vehicles sold in 2023 were a 0.9% sales share.

In the fourth quarter of 2024, 940 zero-emission heavy trucks were sold, representing a sales share of 1.5%, roughly the same volume and share as in the last quarter of 2023, when 950 zero-emission heavy trucks were sold (1.4% share).

Volvo Trucks maintained its leading position in the zero-emission heavy truck market in the fourth quarter of 2024, but its 33% share was a drop from its 43.5% share in the previous quarter. Renault trailed closely by selling 32% of all zero-emission heavy trucks and was followed by Mercedes with a 17% share.

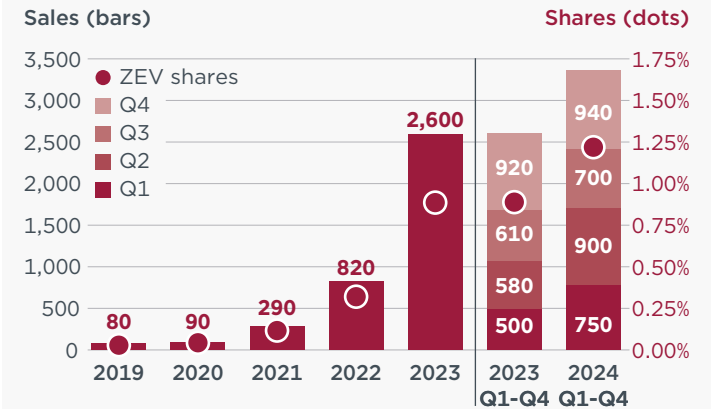
Germany continued to lead in sales of zero-emission heavy trucks in the fourth quarter of 2024, with the 300 units sold representing 32% of the market. Just five countries (Germany, France, the Netherlands, Sweden, and Denmark) were responsible for 90% of all zero-emission heavy trucks sales.

Figure 2.1
Sales of heavy trucks by powertrain in Q4 2024



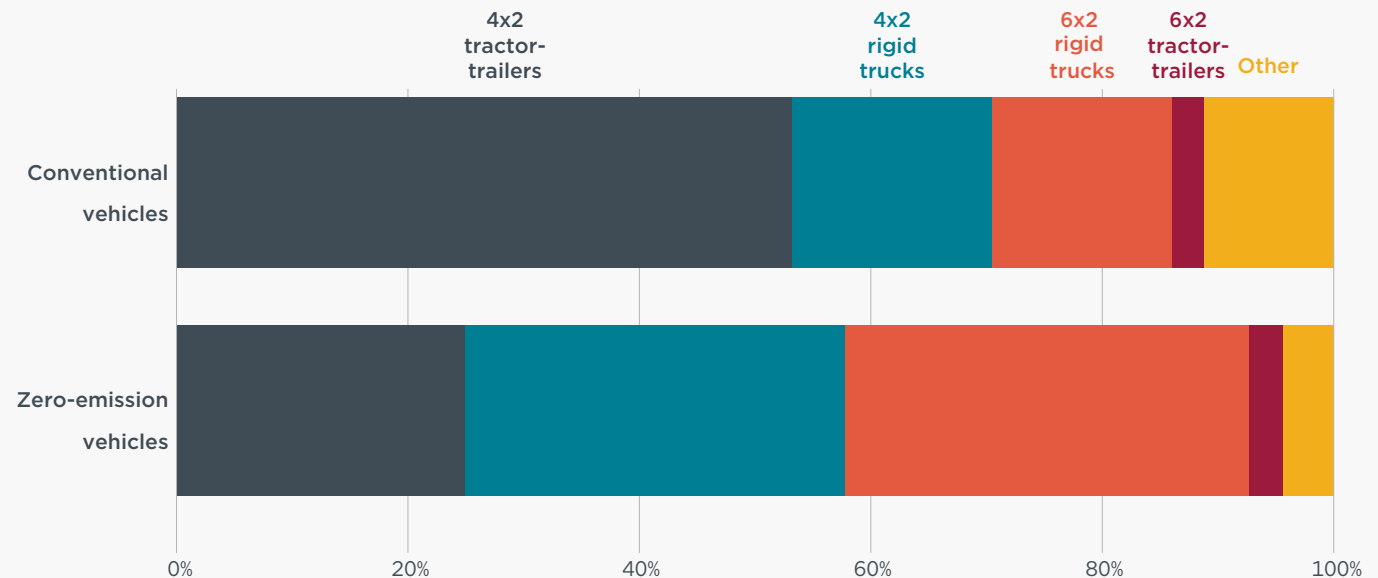
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Figure 2.2
Sales of zero-emission heavy trucks



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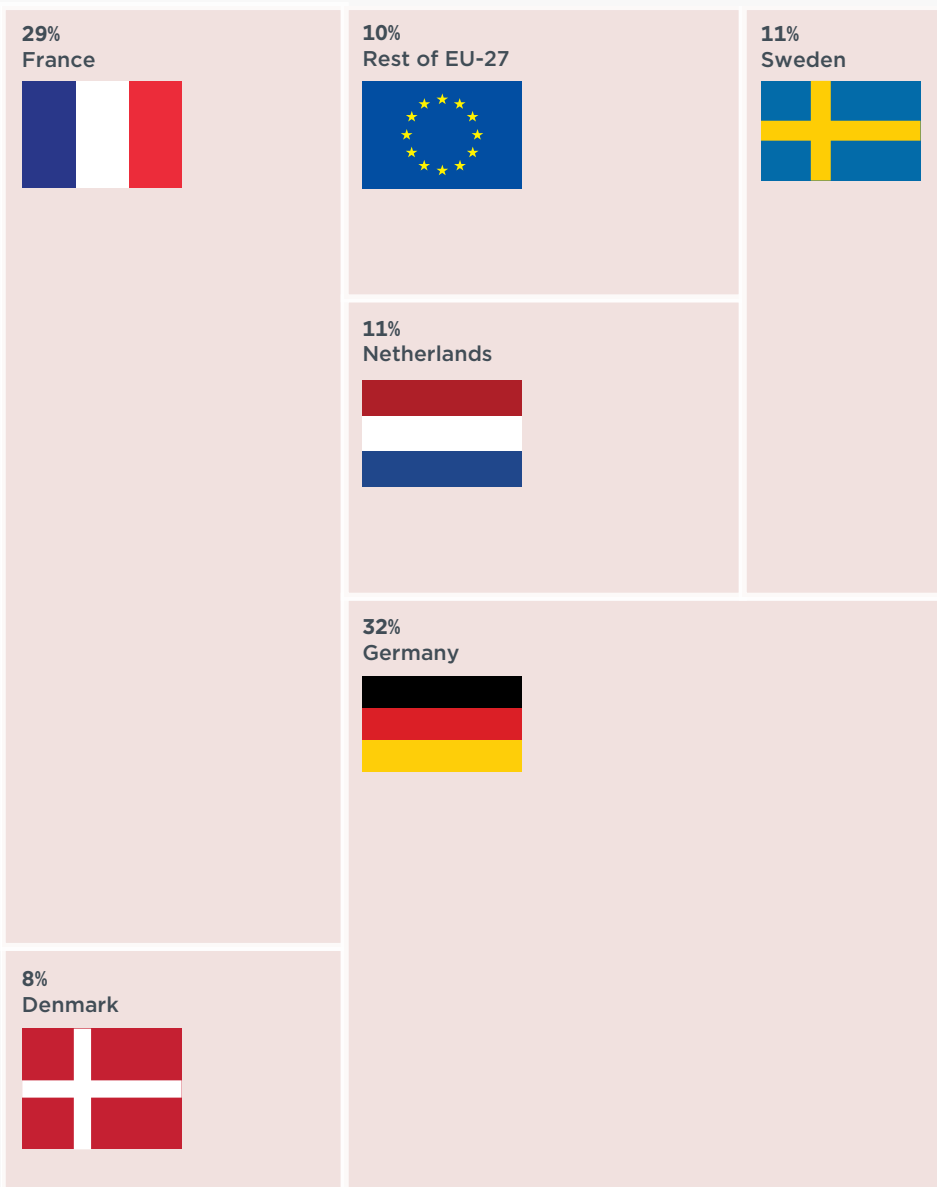
Figure 2.3
Sales of heavy trucks by configuration and powertrain in Q4 2024



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Figure 2.4

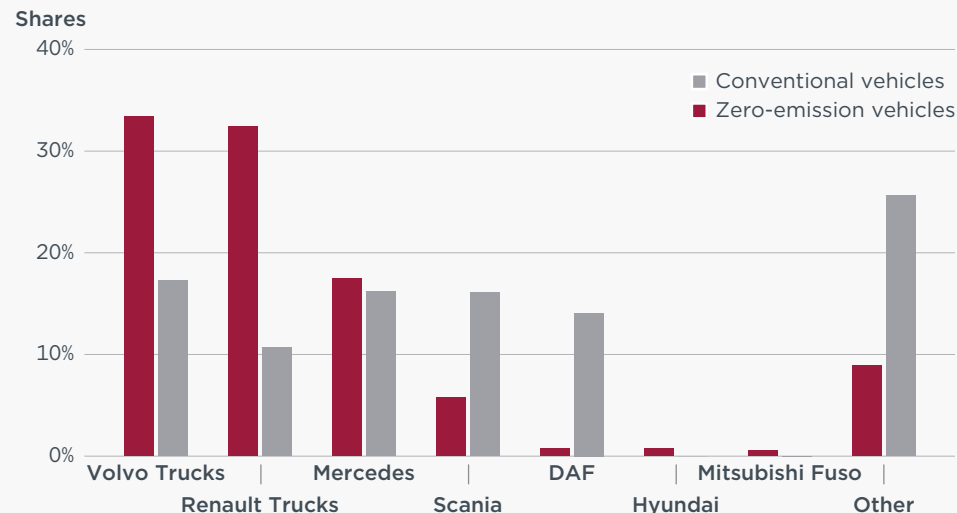
Sales of zero-emission heavy trucks by Member State in Q4 2024



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Figure 2.5

Shares of heavy trucks by powertrain and manufacturer in Q4 2024



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Table 1

Sales of zero-emission heavy trucks in EU-27 countries with sales shares in parentheses

Country	2024 full year	2023 full year	2024 Q4	2023 Q4
Austria	125 (1.7%)	41 (0.5%)	25 (1.8%)	18 (1.0%)
Belgium	78 (1.0%)	36 (0.4%)	18 (1.2%)	10 (0.6%)
Denmark	210 (5.6%)	213 (4.6%)	71 (9.0%)	53 (5.2%)
Finland	15 (1.1%)	32 (1.1%)	—	3 (0.5%)
France	654 (1.4%)	552 (1.2%)	269 (2.5%)	274 (2.7%)
Germany	1198 (1.7%)	744 (1.0%)	302 (2.1%)	278 (1.9%)
Greece	4 (0.8%)	2 (0.4%)	2 (1.9%)	2 (2.2%)
Ireland	17 (0.7%)	16 (0.7%)	2 (1.0%)	1 (0.5%)
Italy	29 (0.1%)	53 (0.2%)	2 (0.0%)	30 (0.5%)
Luxembourg	2 (0.2%)	4 (0.3%)	1 (0.8%)	1 (0.4%)
Netherlands	491 (3.0%)	388 (2.7%)	99 (1.7%)	105 (3.7%)
Portugal	11 (0.8%)	1 (0.1%)	2 (0.5%)	1 (0.4%)
Spain	125 (0.4%)	171 (0.7%)	32 (0.4%)	49 (0.7%)
Sweden	344 (6.4%)	288 (4.3%)	102 (7.3%)	91 (7.2%)
Rest of EU	53 (0.1%)	88 (0.1%)	13 (0.1%)	32 (0.2%)
EU-27	3,356 (1.2%)	2,629 (0.9%)	940 (1.5%)	948 (1.4%)

LIGHT AND MEDIUM TRUCKS

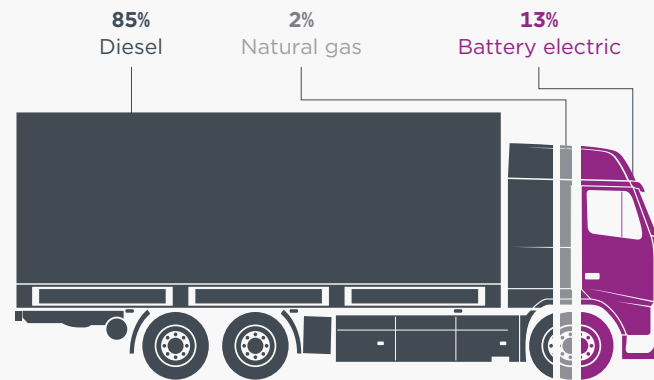
TRUCKS WITH A GROSS VEHICLE WEIGHT BETWEEN 3.5 TONNES AND 12 TONNES

In 2024, light and medium trucks were 13% of all HDV sales. Out of 46,000 light and medium trucks sold, 4,800 (10%) were zero-emission vehicles. The segment contracted by 16% relative to 2023, when 55,000 vehicles were sold. The zero-emission market grew against the backdrop of this contraction, though: In 2023, the 3,500 zero-emission sales were only 6% of the market. In the fourth quarter of 2024, 1,500 zero-emission light and medium trucks were sold, a sales share of 13%. In terms of volume and share, this is more than double the fourth quarter of 2023 when 780 zero-emission light and medium trucks were sold, a share of 6%.

Germany was home to 55% of the zero-emission sales. The same five countries (Germany, France, the Netherlands, Denmark, and Sweden) were home to 88% of all zero-emission light and medium trucks sales. Notably, in the fourth quarter of 2024, zero-emission vehicles were 48% of all light and medium trucks sales in Denmark and 42% in Sweden.

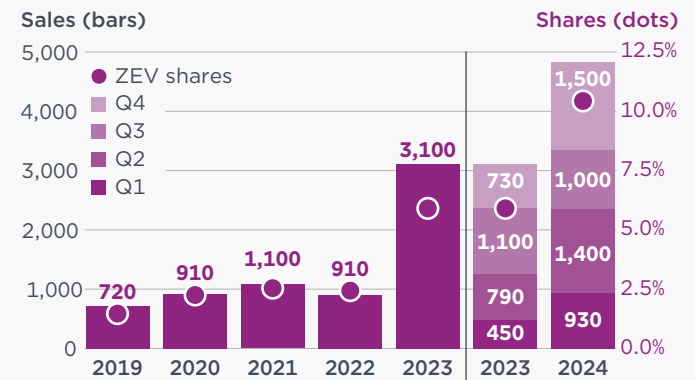
Ford regained its position as the leading seller of zero-emission light and medium trucks. The Ford E-Transit was the most popular zero-emission model in 2024 with 1,800 sold and it was followed by the Iveco eDaily (1,200 sold), the Mercedes eSprinter (560 sold), and the Fiat Ducato (430 sold). Combined, these four models were 83% of all zero-emission light and medium trucks sold in 2024.

Figure 3.1
Sales of light and medium trucks by powertrain in Q4 2024



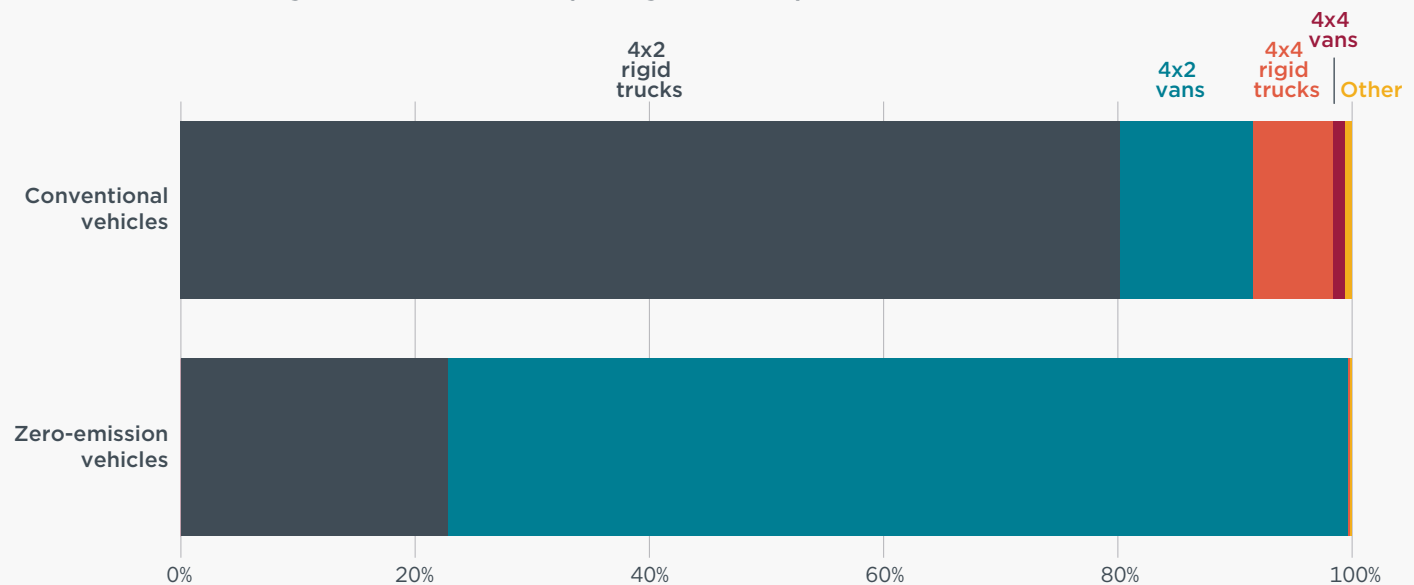
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Figure 3.2
Historic sales of battery electric light and medium trucks



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Figure 3.3
Sales of zero-emission light and medium trucks by configuration and powertrain in Q4 2024



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Figure 3.4

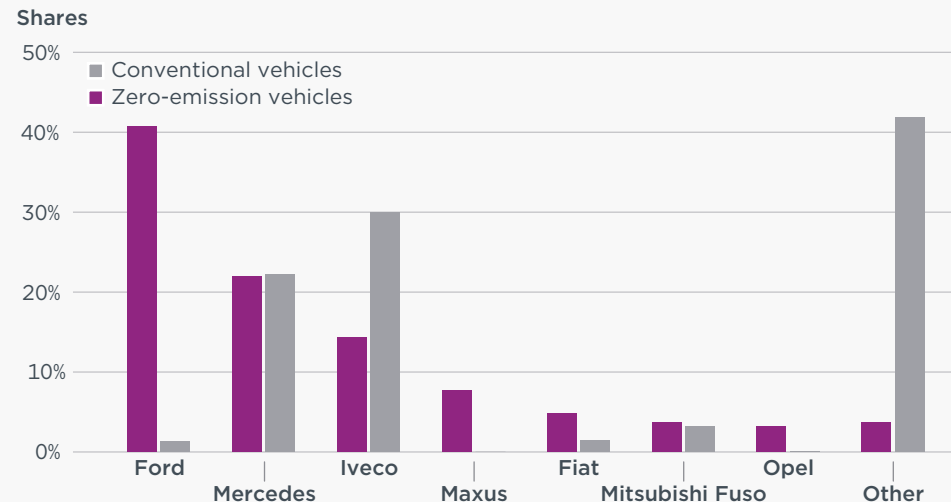
Sales of zero-emission light and medium commercial vehicles by Member State in Q4 2024



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Figure 3.5

Shares of light and medium trucks by powertrain and manufacturer in Q4 2024



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Table 2

Sales of zero-emission light and medium trucks in EU-27 countries with sales shares in parentheses

Country	2024 full year	2023 full year	2024 Q4	2023 Q4
Austria	45 (7%)	47 (2%)	9 (6%)	10 (2%)
Belgium	48 (4%)	15 (1%)	12 (4%)	2 (0%)
Denmark	213 (38%)	131 (19%)	74 (48%)	24 (16%)
Finland	17 (3%)	7 (1%)	9 (8%)	4 (2%)
France	940 (15%)	452 (8%)	241 (16%)	35 (3%)
Germany	2,692 (16%)	1,582 (7%)	813 (22%)	480 (10%)
Greece	3 (1%)	0.00%	1 (2%)	0.00%
Ireland	29 (5%)	18 (3%)	1 (1%)	5 (5%)
Italy	190 (5%)	144 (3%)	42 (5%)	78 (6%)
Luxembourg	2 (2%)	7 (5%)	0.00%	3 (9%)
Netherlands	185 (8%)	781 (44%)	82 (8%)	24 (11%)
Portugal	51 (7%)	31 (4%)	23 (14%)	26 (11%)
Spain	169 (3%)	139 (3%)	40 (3%)	28 (3%)
Sweden	122 (24%)	24 (3%)	76 (42%)	8 (5%)
Rest of EU	125 (2%)	164 (2%)	46 (5%)	46 (2%)
EU-27	4,831 (10%)	3,100 (6%)	1,469 (13%)	773 (6%)

BUSES AND COACHES

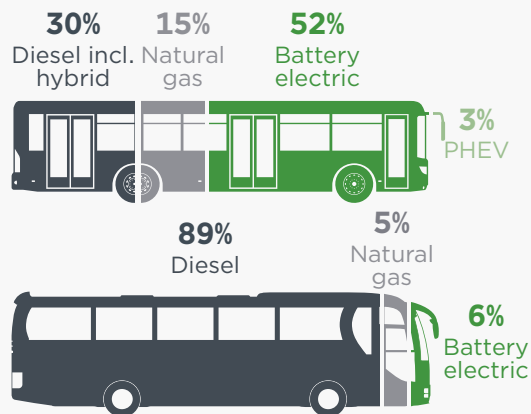
WITH A GROSS VEHICLE WEIGHT ABOVE 3.5 TONNES

In 2024, buses and coaches were 10% of all HDV sales. Out of 35,000 buses and coaches sold, 6,000 (17%) were zero-emission vehicles. The bus and coach market grew by 31% relative to 2023 when 27,000 vehicles were sold. The volume of zero-emission buses and coaches also increased in 2024 relative to 2023, when 4,500 zero-emission vehicles were sold; the sales share remained relatively constant at 17% in 2024 compared with 16% in 2023.

In the fourth quarter of 2024, 2,000 zero-emission buses and coaches were sold, 26% of total sales and an increase in both volume and share compared with the last quarter of 2023, when 1,600 (22% share) were sold. Over 50% of all city buses sold in the fourth quarter of 2024 were battery electric—zero-emission powertrains were more popular than combustion engines for the first time ever. Seven countries (Belgium, Ireland, Latvia, Lithuania, Luxembourg, the Netherlands, and Romania) only sold zero-emission city buses in the fourth quarter of 2024. That same quarter, sales share of zero-emission interurban buses and coaches increased to 6%, largely driven by a surge in electric minibuses sold by Iveco, Mercedes, and Ford.

Figure 4.1

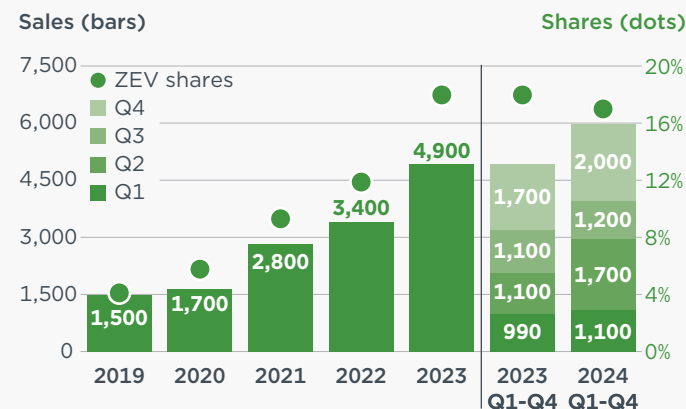
Sales of city buses (top) and interurban buses and coaches (bottom) by powertrain in Q4 2024



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Figure 4.2

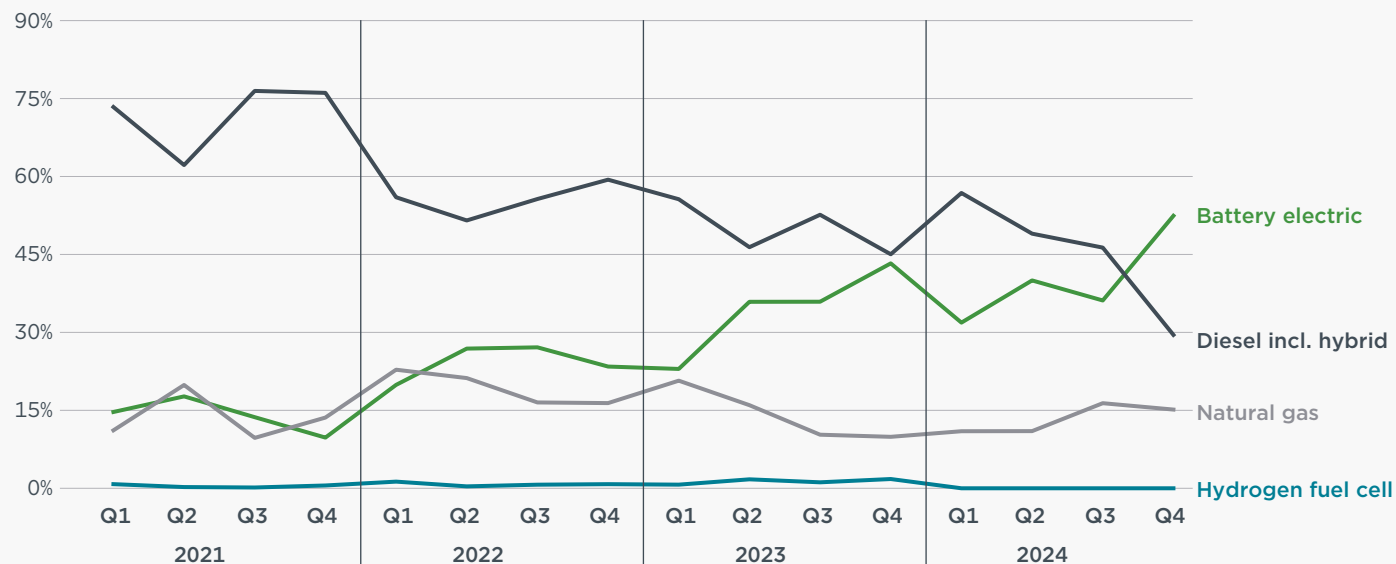
Historic sales of all zero-emission buses and coaches



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Figure 4.3

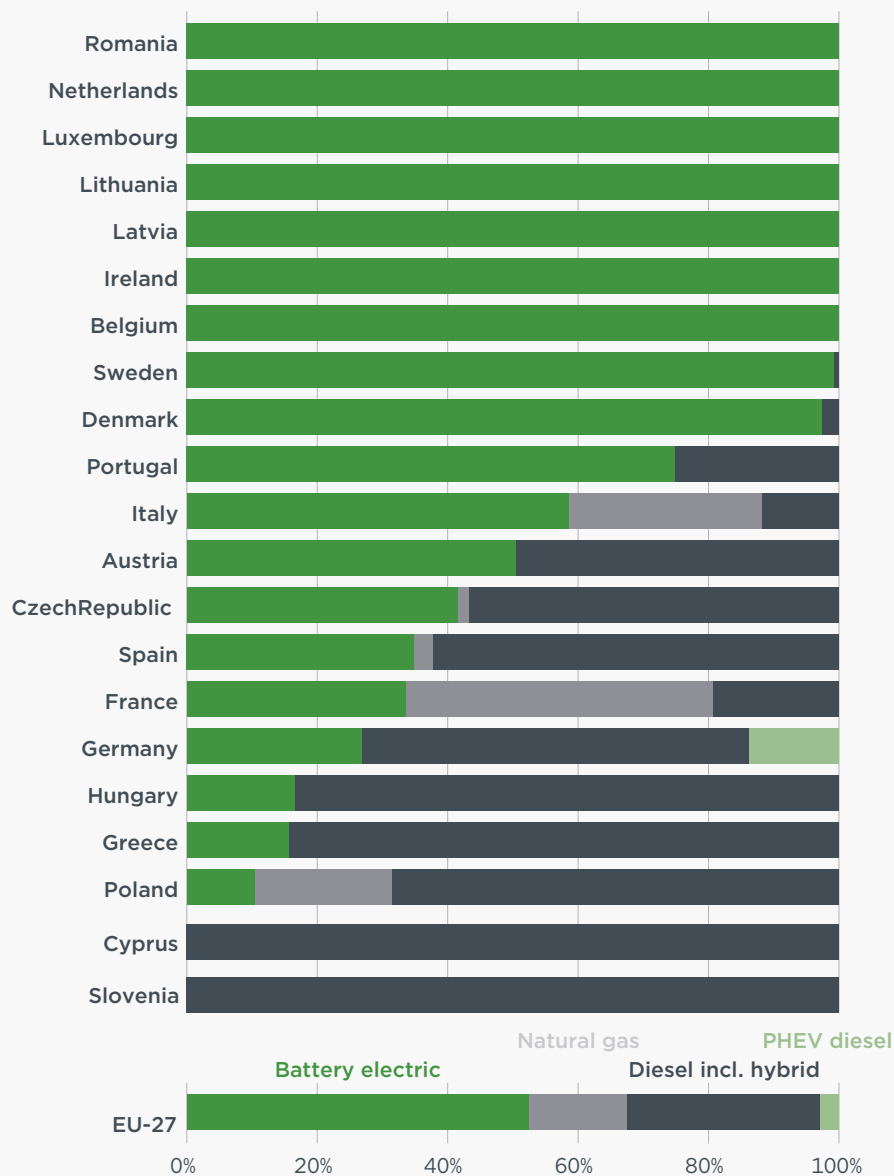
Sales of city buses by Member State and powertrain



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Figure 4.4

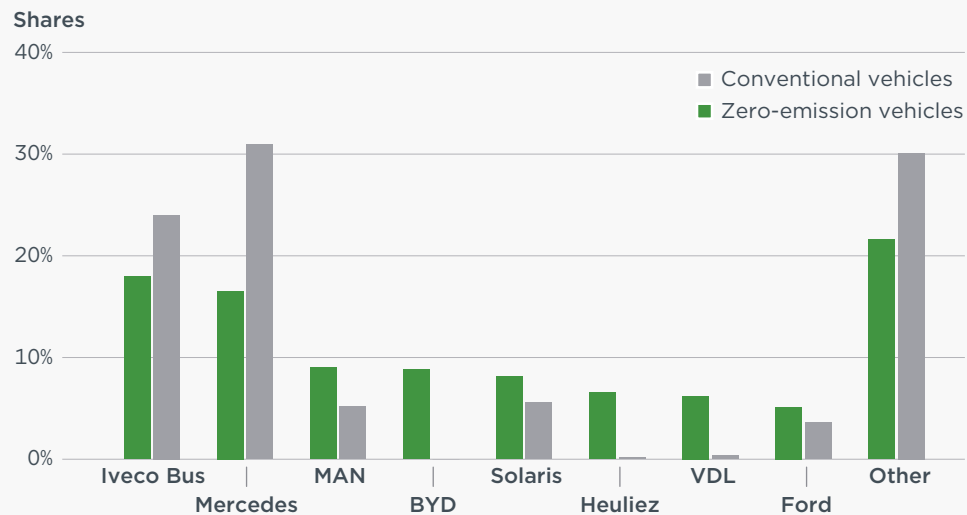
Sales of city buses by powertrain and Member State in Q4 2024



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Figure 4.5

Shares of all buses by powertrain and manufacturer in Q4 2024



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Table 3

Sales of zero-emission buses and coaches in EU-27 countries with sales shares in parentheses

Country	2024 full year	2023 full year	2024 Q4	2023 Q4
Austria	102 (10%)	58 (5%)	46 (25%)	38 (10%)
Belgium	194 (23%)	106 (18%)	81 (48%)	23 (21%)
Denmark	380 (68%)	200 (76%)	115 (86%)	91 (97%)
Finland	135 (83%)	105 (80%)	—	5 (42%)
France	661 (11%)	381 (7%)	148 (12%)	155 (12%)
Germany	732 (14%)	811 (17%)	207 (18%)	286 (20%)
Greece	272 (44%)	7 (9%)	3 (3%)	0.00%
Ireland	238 (28%)	49 (20%)	6 (12%)	29 (73%)
Italy	1,047 (17%)	349 (8%)	565 (38%)	114 (11%)
Luxembourg	238 (76%)	77 (35%)	78 (85%)	20 (45%)
Netherlands	409 (46%)	175 (49%)	217 (48%)	128 (91%)
Portugal	114 (16%)	367 (50%)	21 (25%)	136 (49%)
Spain	260 (6%)	508 (16%)	84 (10%)	169 (20%)
Sweden	251 (31%)	291 (33%)	164 (60%)	66 (24%)
Rest of EU	934 (14%)	969 (19%)	266 (17%)	389 (24%)
EU27	5,967 (17%)	4,900 (17%)	2,001 (26%)	1,649 (22%)

TECHNOLOGY FOCUS: ENERGY EFFICIENCY TECHNOLOGY DEPLOYMENT

Manufacturers are pursuing various strategies to reduce the carbon dioxide (CO₂) emissions of their new HDVs, and all major manufacturers recently launched new technology packages that benefit the energy efficiency of both conventional and zero-emission vehicles. These include improvements in the aerodynamic design of truck cabins, advanced driver assistance systems (ADAS), lightweighting of various vehicle components, and, for conventional vehicles, more efficient engines and transmissions. All combined, fuel savings of up to 15% have been reported in the new generation of long-haul tractor-trailers compared with 2020-2021 trucks.

New rules on truck cabin design implemented in 2021 allowed all major manufacturers to launch new, elongated truck cabins with significantly improved aerodynamics and other features such as air fenders, aero seals, under hood aerodynamic design improvement (closing gaps between components), side skirts, and improved windscreen design. Another innovation driven by the new safety requirements is the introduction of camera mirrors to replace traditional side mirrors; this reduces blind spots for increased safety and considerably reduces air drag on the side of the cabin. Improved aerodynamics have been reported to result in up to 5% fuel savings.

ADAS have also become more widespread in the past few years. ADAS deliver up to 5% fuel savings compared with vehicles that are not equipped with the technology. Most importantly, predictive cruise control (PCC) adjusts the speed of the vehicle to gain momentum as it approaches hills, which reduces the impacts of positive road gradients on fuel consumption. Recent improvements in PCC algorithms were reported to deliver further 2% fuel savings. For conventional vehicles, through more efficient combustion, engine lightweighting, and gearbox automation and increased rear axle ratio enabling engine downspeeding, fuel savings of up to 8% have been reported.

Table 4 summarizes announcements in fuel efficiency improvements achieved by each of the seven major European truck manufacturers. The list reflects publicly available data and is not comprehensive.

Table 4
Fuel savings in tractor-trailers achieved by the seven major Europe-based manufacturers

Manufacturer	Model	Fuel savings compared with previous generation (MY = model year)
DAF	XF/XG/XG+	10% (MY 2025 vs. MY 2021) 3% (MY 2025 vs. MY 2024)
IVECO	S-Way	10%-14% (MY 2024 vs. MY 2023) ^a
MAN (here and here)	TGX	4% (MY 2025 vs. MY 2024) 8% (MY 2020 vs. MY 2019) ^b
Mercedes (here and here)	Actros L	3% (MY 2025 vs. MY 2024) 5% (MY 2020 vs. MY 2019)
Renault	T Smart Racer	13% (MY 2024 vs. MY 2023) ^c
Scania (here and here)	R/S Super	2% (MY 2023 vs. MY 2022) 8% (MY 2022 vs. MY 2021)
Volvo	FH Aero	5% (MY 2024 vs. MY 2023)

^a 10% from improved aerodynamics, engine, and PCC, and a further 4% from “advanced features”

^b Third-party testing in real-world operation

^c 15% CO₂ emission savings in VECTO (the regulatory tool used for CO₂ emission certification)

DEFINITIONS, DATA SOURCES, METHODOLOGY, AND ASSUMPTIONS

A zero-emission vehicle is 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.

A heavy-duty vehicle is a commercial vehicle, intended for the transport of passengers or freight, with a gross vehicle weight above 3.5 tonnes.

A heavy truck is a truck with a gross vehicle weight above 12 tonnes.

A light and medium commercial vehicle is a truck or van with a gross vehicle weight between 3.5–12 tonnes.

A city bus is a passenger vehicle with a gross vehicle weight above 3.5 tonnes that is used exclusively in urban environments.

An interurban bus is a passenger vehicle with a gross vehicle weight above 3.5 tonnes that is used in both urban and regional environments.

A coach is a passenger vehicle with a gross vehicle weight above 3.5 tonnes that is used exclusively in regional environments.

All data are supplied by Dataforce.

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