

# Trucks & trailer market outlook 2025

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Navigating a greener future

after extraordinary times



# Truck and trailer market outlook 2025: navigating a greener future after extraordinary times



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European demand for transport equipment has cooled. Following three years of supply chain issues and subsequent recovery, reduced orders and cleared backlogs are expected to lower deliveries in 2024-25. The trailer market, which saw this earlier, is set to stabilise in 2025. Expect more zero-emission vehicles due to ambitious CO2 regulations



After a surge in investments and delayed deliveries, the momentum for new trucks and trailers has slowed. With a drop in transport demand, many carriers are now dealing with excess capacity and are pulling back. Manufacturers relied on pandemic-era backlogs, but as order books have normalised, the drop in orders has become more evident this year. Trailer purchases had already started their decline.

The normalisation of elevated prices, an improvement of the transport market, and catch-up replacements may boost investments and orders by late 2025, but a material market improvement is only expected by 2026. All eyes next year are on the accelerated inflow of electric long-haul tractors.



## Why Europe's road haulage recovery is stuck in the slow lane

European road haulage is slightly picking up after a serious downturn. Economic stagnation – especially in Germany – will, however, limit growth in transport volumes and investment in trucks and trailers in 2025. Cost control is key, and the importance of sustainability is rising. Attracting drivers could once again prove a crucial success factor

### The negative aftermath of Covid is over, upside comes from the consumer side now

The road transport sector has faced significant challenges over the last few years. In 2023, consumers shifted back to spending on services, leading to reduced demand for goods. To adjust, shippers reduced excess stock, and that caused a further decline in transport. These pandemic-related corrections and supply chain issues have now subsided, and inventory levels have largely normalised.

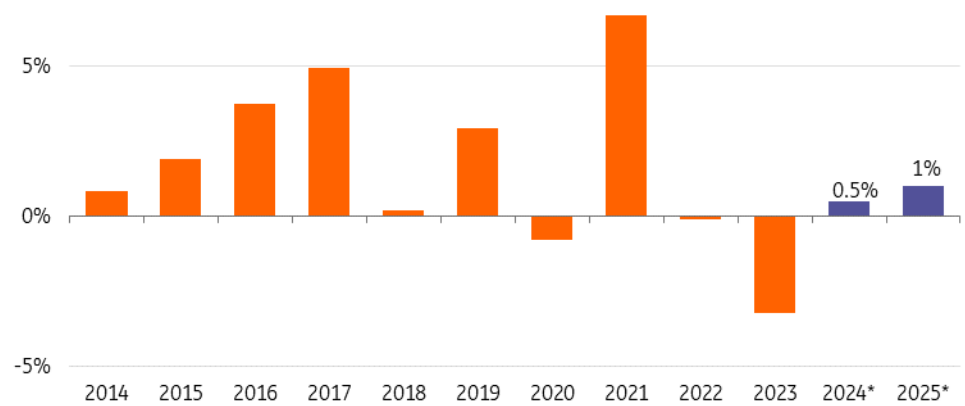
For instance, a European survey conducted before the summer\* revealed that 90% of consumer goods shippers reported their stock levels were either at the desired level or too low. This normalisation has resulted in higher container throughput in major European ports, with Rotterdam seeing a 3% year-on-year increase and Antwerp-Bruges experiencing a 9% rise in the first three quarters of 2024. This is good news for road transport, which still handles nearly 60% of seaborne containers to the hinterland.

Consumers are beginning to see their purchasing power improve as inflation decreases and wage increases outpace inflation, while the labour market remains strong. This is a positive for both consumption and transport demand. However, demand from the [construction sector is still bottoming out in the run up to 2025](#), and the manufacturing industry continues to struggle with [high energy costs and difficulty remaining competitive](#).

\*Source: Drewry

### European road transport volume sluggish, but slightly recovering

Evolvement of European road transport volume in million ton/km



Research \*forecast  
Source: Eurostat, ING

### Struggling industry continues to weigh on European transport

The sluggish European transport demand is reflected in German truck mileage volume, which fell 3% in 2023 and contracted by 0.7% up to October 2024. As the largest economy and a key transit country in Europe, Germany typically provides a good indicator of European road transport activity. However, in 2024, trucking companies reported attempts to avoid Germany due to steep MAUT (toll) increases. Combined with the manufacturing industry's relatively poor performance, this has led to a negative deviation compared to Europe as a whole.

### Continued slow (and bumpy) recovery expected for road transport into 2025

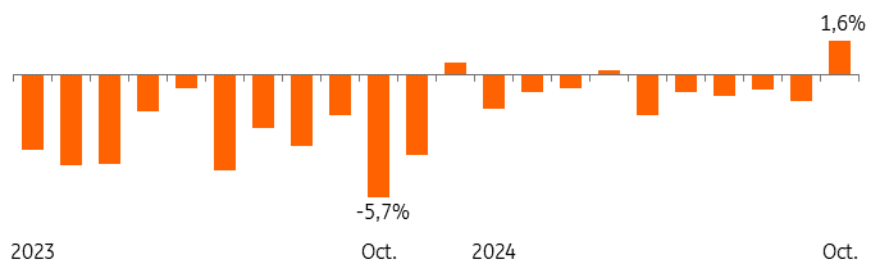
#### A continued slow (and bumpy) recovery is expected for road transport into 2025

As we approach 2025, the European Purchasing Managers' Index (PMI) for manufacturing still signals contraction. The German industry – particularly its energy-intensive sectors as well as its automotive sector – has struggled to gain sustainable ground after the setbacks it has faced.

In contrast, economies in some other European countries, such as Spain and Poland, are performing better. Overall, improvements in consumer demand and a notable return of driver shortages signal improvements for the market. We expect the road transport volume to recover slightly by 0.5%, with growth expected to increase to 1% in 2025. Nevertheless, the recovery will continue to lag behind long-term average growth rates.

### Road transport across Germany leaves worst behind, but recovery still about to materialize

Total truck mileages on German motorways (MAUT) YoY (adj. for work days)



Source: BAG, ING Research



### Truck driver shortage relief proves short lived

Truck driver shortages in road transport have become a serious supply constraint over the last few years. The setback in demand brought short-term relief in 2023 but, as we predicted, these shortages return when markets start to recover. The EU now reportedly [faces a shortage of 500,000 drivers](#). This is why forward-looking (larger) companies are permanently hiring drivers through the economic cycle.

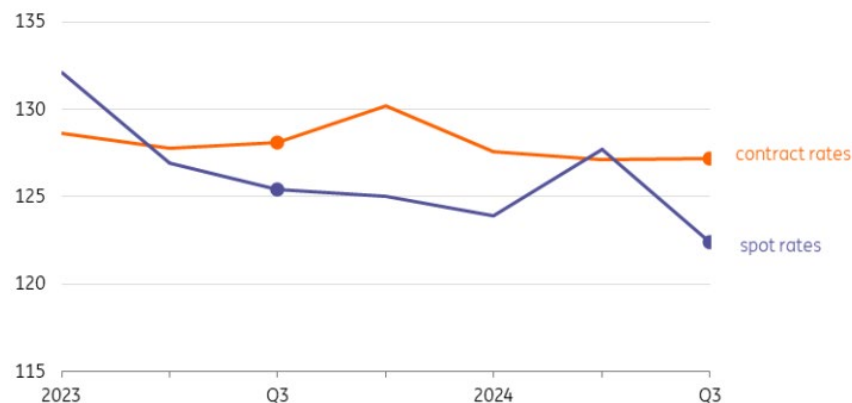
Here are a few key reasons that we believe shortages are here to stay:

- Workers from Western Europe are now less inclined to drive international trucks because they can earn similar wages in other jobs. New-generation truck drivers also prefer shorter working hours and weeks; many are reluctant to spend weeks on the road and away from family.
- The availability of potential workers in EU (and Central and Eastern European) countries is increasingly limited for demographic reasons, and workers have alternative options to earn similar wages.
- The labour force ages, which pushes up outflow. European truck drivers are currently aged 44, with 21% of them older than 55.

The relatively low representation of women is also an ongoing constraint within the sector. To attract drivers, larger transport companies already turned to regions outside of Europe, such as Asia. Many forward-looking larger companies continue to hire and educate a continuous flow of truck drivers through the cycle.

### Freight rates in European trucking still fragile amid higher cost environment

Development of freight rates European road haulage (01/01/17 =100)



Source: Upply/IRU, ING Research

### Contract freight rates are stable, spot rates still reveal ongoing volatility

Europe's road transport market is dominated by fixed transport contracts, with shippers covering most of the traffic. Spot rates – covering perhaps 20% of the market – provide short-term market guidance though. These day-to-day rates slipped below contract rates in early 2023, revealing market weakness and excess capacity.

However, signs of a market recovery appeared in 2024 as several large fleet owners reduced their (idled) fleet capacity. The newest setback seen in the third quarter is likely linked to significantly lower diesel prices. Freight rates remain fragile in the current environment, and given ongoing wage cost pressures, haulage companies are still challenged to pass on higher costs in 2025.

### Diesel prices in 2024 lower than in 2023 despite geopolitical tensions

Diesel spot market prices (MT) in EUR per day



Source: Refinitiv, ING Research, last datapoint 11/29/24

#### Growth potential in (European) road transport

##### Why has the growth potential in European road transport been dampened?

- Consumers are gradually spending a larger share of their additional income on services that involve little freight transport – digital services and holidays, for example.
- Europe's population growth is stagnating and immigrants, in particular, are driving growth.
- Europe's global competitiveness is under pressure, and this has a notable impact on energy-intensive industries. Trade tensions and import tariff increases could also affect export and import flows negatively.

##### Are there any signs of new opportunities?

- Nearshoring may offer new opportunities for continental road transportation in the coming years. As a result of increased supply risks and geopolitical tensions across the globe, a growing number of companies are considering diversification and possibilities to source closer to the end market, potentially supporting production in countries such as Poland, Romania or Turkey in the medium term.

#### More consolidation is needed to remain competitive and meet requirements

The European road haulage sector includes several large international trucking companies such as Girtelka, Warberer's, Primafrio, Raben and Vos Logistics, but the far majority are still small and medium-sized companies. Larger trucking companies are generally getting bigger, and more drivers are also starting their own companies. In 2024, we've seen an increased number of bankruptcies amid continued cost pressure alongside disappointing demand in some segments.

However, several companies still lean on their strengthened financial positions from the years before 2023. Given lower borrowing rates, we may see a bolstered flow of acquisitions. Scale is also becoming increasingly important for effectively keeping up with and progressing in digitalisation and sustainability (fleet and reporting).

## Investors in trucks and trailers are awaiting the right time to catch up

The investment climate in road transportation has cooled after overheating, and 2024 was mainly a year of 'wait and see'.

For 2025, we see more of a mixed bag:

### Downside risks

- Slightly improving, but still sluggish international transport demand.
- Available capacity exceeding demand.
- Remaining uncertainty about how difficult the sustainability path will be in Europe and several countries, also looking at the infrastructure. Together with much higher purchase prices, this may still make companies decide to wait.

### Areas of uncertainty

- Prices of new equipment have come down, but fleet owners seem to await further improvements in their negotiating positions.
- Slowing investments following a sharp increase in interest rates (Euribor) from -0.5% to almost 4% in the autumn of 2023. Rates are, however, on a downward trajectory and there should be more to follow through 2025. This could support investment activity again.

### Upside risks

- Efficiency improvement is an incentive for carriers to invest. New generation models of trucks, such as DAF XF/XG, are typically 10-15% more fuel efficient than the previous generation.
- On balance, there is still deferred replacement demand (even though some companies have renewed a significant portion of their fleets). In turn, there still remains a catch-up effect in the pipeline, which is positive for the longer term.
- CO2-linked mileage charging in several countries including Germany\*, as well as increasing policy pressure on clients (CSRD) and manufacturers (CO2-targets) to become more sustainable supports demand for new equipment.

\*As the first country in Europe Germany introduced a price on emissions for road transportation in 2024 by including a CO2-differential in the road mileage charging (MAUT). This pushed up transport rates for EURO VI for conventional heavy-duty 5-axle truck and trailer combinations with almost 16 cents per kilometre to just under 35 cents per km, resulting in an increase of over 80%. Other countries including Austria, Denmark, Czech Republic and Hungary have introduced similar systems (replacing the Eurovignette) or are just about to do so.

## Multiple regulatory focus points for road haulage by 2030

On the road to 2030, a range of new regulations will be enforced and will sharpen the focus on sustainability for investments in transport equipment. CO2 pricing will be introduced for the first time, CO2 reporting will be required from large corporates, and manufacturers will be pushed to produce zero-emission vehicles:

## Multiple new sustainability linked European regulations upcoming for truck manufacturers, hauliers and shippers



Source: ING Research

## Europe's Mobility Package storm has calmed

The European [Mobility Package](#) and the 'return home' rule for vehicles – that which requires trucks used for international transport to return to their home country at least once every eight weeks – have caused much discussion and raised many questions about efficiency. That's largely over now. The return home vehicle requirement has been cancelled by the European Court of Justice (CJEU), saving many inefficient (empty) miles and unnecessary emissions. The repeal offers trucking companies more flexibility to optimise the deployment of internationally operated trucks (often registered in Central and Eastern European countries), which in turn results in some efficiency gains.

Cabotage rules are also more restrictive under the Mobility Package, and this does show up in transport activity. The cooling off period of four days (max. three domestic rides in a seven-day time frame following an international ride) makes cabotage less attractive. As a result, total cabotage in the EU fell to 4.5% in 2023 from 4.9% in 2022. The new rules are particularly relevant for Germany and Belgium, where cabotage levels are double Europe's average.

## Centre of gravity for international transport shifts east

Since the extension of EU membership by 10 countries to the East in 2004, there has been a major shift towards international transport from countries such as Poland, Lithuania, Hungary and Romania, in order to achieve lower labour costs. This has structurally reduced road transport from the Netherlands and Belgium, but also from Germany and France.

Since then, the share of international kilometres from the Dutch fleet, for instance, fell from 60% to just over a third. The lower mileage among tractors registered in the Netherlands shows that the trend is still in place. Not all Western companies have suffered from this since many have set up subsidiaries.

While international trucks are often registered with Eastern European license plates and Poland has been the European market leader for several years now, much of the transport activity still takes place in Western Europe. The enlargement of the internal

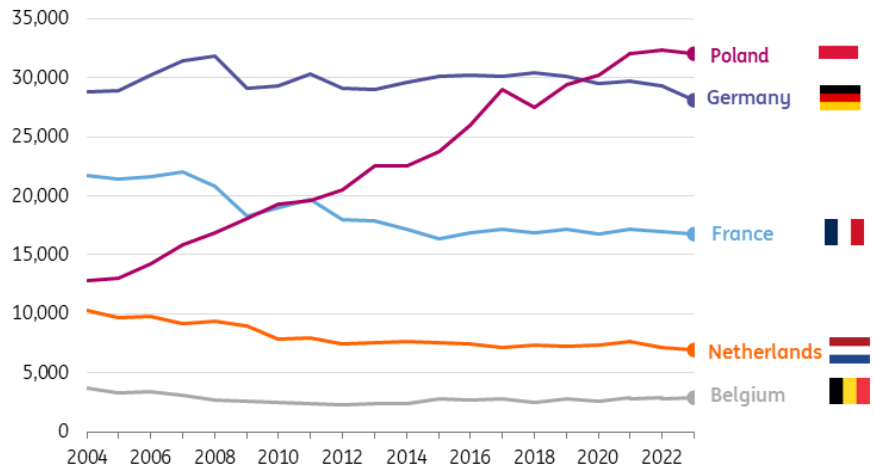


market has stimulated competition and reduced the cost of international transport for shippers – and eventually for consumers.

With the cancellation of the 'return home vehicle' regulation, one of the main drivers for a reversal in this trend has been removed. A 'return home driver' requirement once every four weeks remains in place – but drivers can opt to refuse. As the wage gap is still large enough, we believe the trend can continue, though countries other than Poland (such as Romania and the Baltics) are now growing in popularity.

**EU's major extension to the East has been a success story for Poland in the past two decades**

Development of vehicle km's in mn. per country, per year



Source: Eurostat, ING Research



## European truck market: speed slows, CO2 focus intensifies

**The European heavy truck market is slowing down after years of low production and a peak in 2023. We anticipate this decline will persist into 2025 before reaching a turning point. Meanwhile, CO2 regulations are compelling manufacturers to accelerate the adoption of electric trucks**

The European truck market has gone through extraordinary times following years of supply-side challenges, but this has balanced out over the course of 2024. In this article, we'll dive into the current state, market compositions, trends, regulations and the outlook for 2025.

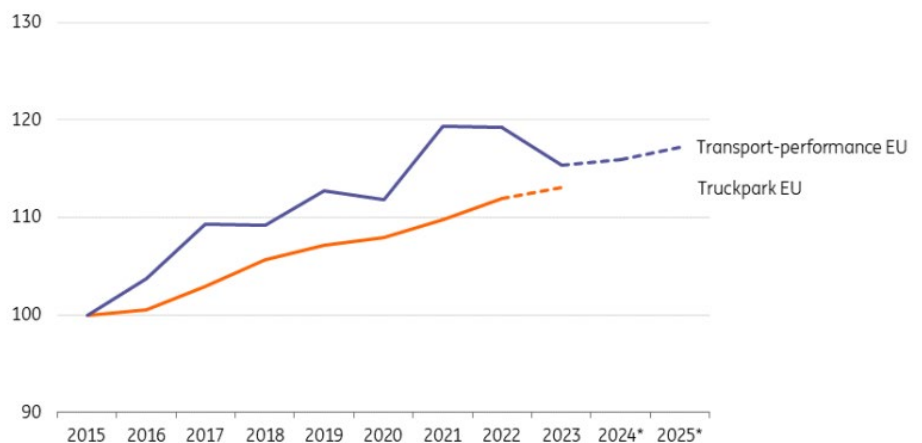
### Transport volume setback created spare capacity

Over the past decade, transport volume growth has outpaced fleet capacity as occupancy rates increased and the transport system became more efficient through optimised planning. Nevertheless, Europe's truck fleet has steadily grown, adding more than 400,000 medium and heavy trucks to the EU-installed base (+7%) between 2019 and 2024.

Following a period of capacity shortage, haulage companies received equipment orders last year that were no longer immediately needed. Despite a freight volume correction of over 3% in 2023, the fleet likely continued to grow due to the remaining previously ordered new inflow and low remarketing values, creating excess capacity at the sector level.

### Transport demand growth exceeded truck fleet expansion – but pressure on capacity has diminished

Development of truckpark vs. transport performance in ton/km (EU 27), index (2015 = 100)



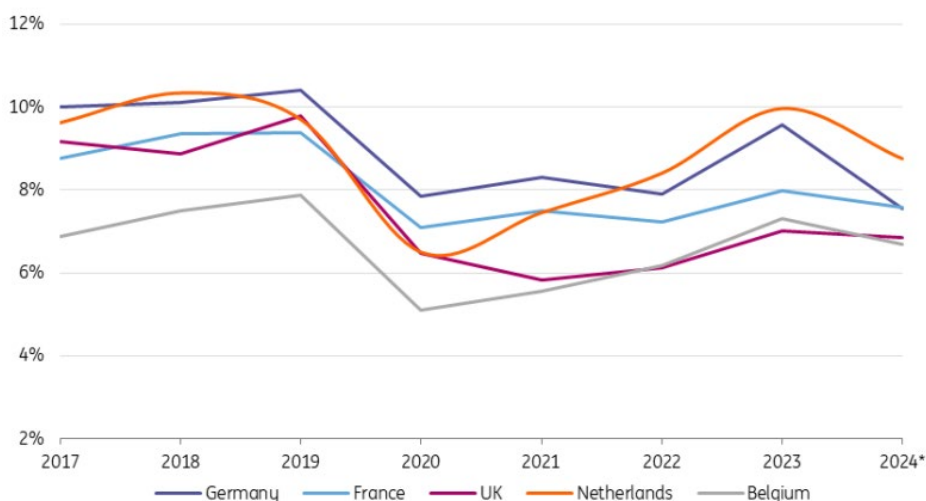
Source: Eurostat, ACEA \*Forecast ING Research

### Large carriers used the sluggish market to idle trucks and review their fleets

Large international carriers have reviewed their fleets in the declining market, idling or reducing capacity to adjust to market conditions. Initially, these vehicles often remain in Europe. However, fleet figures from the Netherlands show that trucks aged 10 years or older are increasingly being taken off the roads, likely due to higher operating costs and mileage charges. This may also include the fact that older internationally operated vehicles [will be required to have a 'smart tachograph' by the end of 2024](#), which will cost between €1,000 and €1,500 to install.

### Replacements haven't caught up yet after years of low inflow

% rolling stock replaced by new trucks per year in various European truck markets



Source: ACEA, ING Research \*based on forecasts

### Years of subdued capacity, new inflow and replacement offers underlying potential

Recent supply issues have impacted the European truck fleet. Pandemic and war-related disruptions hampered production, with brands like Scania and MAN temporarily suspending orders, delaying production cycles. Long lead times, high prices, and interest rates led fleet owners to postpone investments.

From 2020 to 2024, annual replacement rates in major markets like Germany, France, and the UK were 6-8%, about two percentage points lower than in previous years. Consequently, the average European truck became 1.5 years older after 2019, despite new models offering significant fuel efficiency gains. An older fleet results in increased downtime and costs.

Despite a rebound in deliveries in 2023, the gap remains, indicating pent-up demand and potential for truck manufacturers when the investment climate improves.

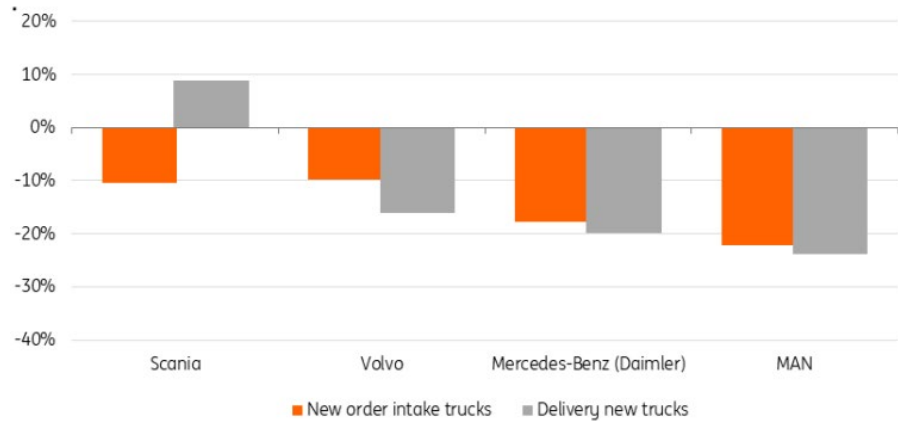
### Delivery times normalised, backlogs cleared after extraordinary times

After a big jump in orders and delivery times extending beyond a year, the supply chain of truck manufacturers has largely normalised. Since the end of 2022, production has exceeded order inflow, and in 2023 and 2024, manufacturers delivered more trucks than they received in orders.

Truck manufacturers, including Daimler Trucks and Volvo, have mentioned that order books are in sync with production for 2024. ING Research calculations confirm that order book levels have roughly returned to pre-pandemic levels when production interruptions began.

Consequently, delivery times for regular trucks have now dropped to two to three months. However, delivery times for electric trucks remain longer as production scales up. Manufacturers are also eager to push the registration of electric vehicles into 2025 to meet the CO2 reduction target of -15%.

**New order intake trucks in 2024 down 10-20%**

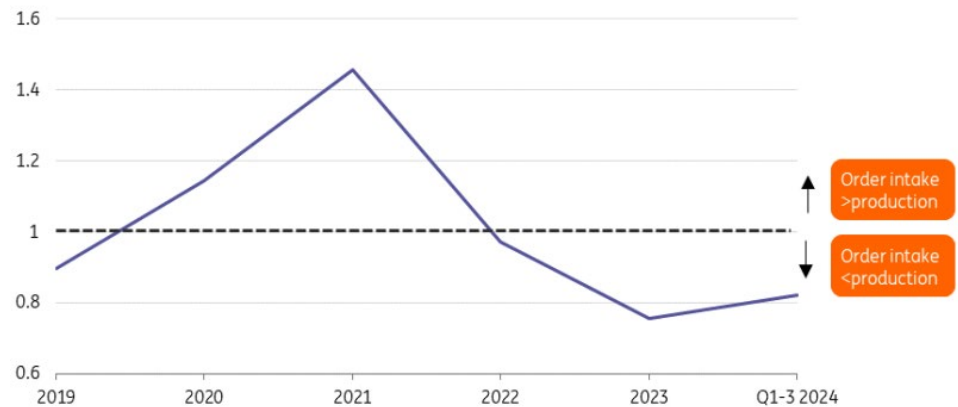


Source: Company reports, ING Research

As production has been scaled back now, the decline of order to manufacturing rates ('book-to-bill ratio') might hit the bottom in the run-up to 2025. This still means we will likely see declines in delivery volumes through 2025.

**Truck deliveries exceed order intake for the third year in 2024**

Book-to-bill ratio European truck manufacturers\*



\*Includes Scania, MAN, Mercedes and Volvo

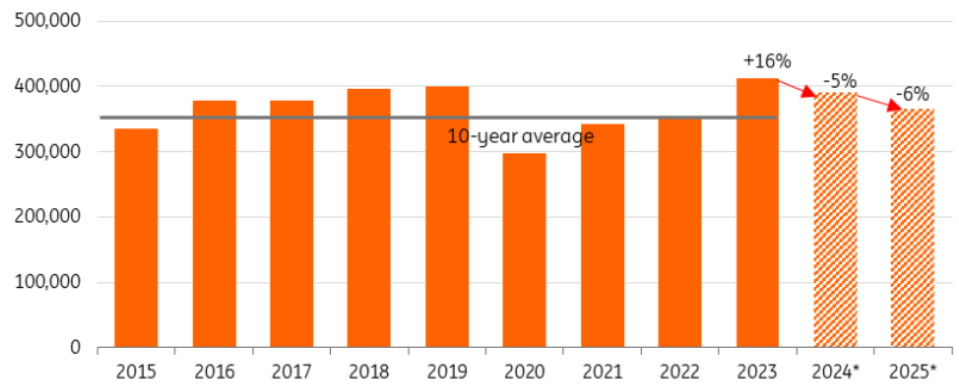
Source: Company reports, ING Research

**Correction of new truck deliveries to continue in 2025 before picking up**

Slowing order intake indicates a retreat in investment appetite for new trucks. This became more pronounced in 2023. For example, Volvo Trucks' order intake decreased from the second quarter onwards compared to 2022, leading to significantly lower deliveries in the third quarter, a trend likely to continue into 2025.

Temporary 'kurzarbeit' at Daimler's Würth plant in mid-2024 and reduced production at DAF Eindhoven from 260 to 160 trucks per day by the end of 2024 signalled this deceleration. As we approach 2025, order intake is bottoming out, but delivery slowdowns will persist. We expect European new truck registrations to decrease to 390,000 in 2024 (-5%) and 365,000 in 2025 (-6%), close to the 10-year average.

### European new truck deliveries in decline in 2024 and 2025

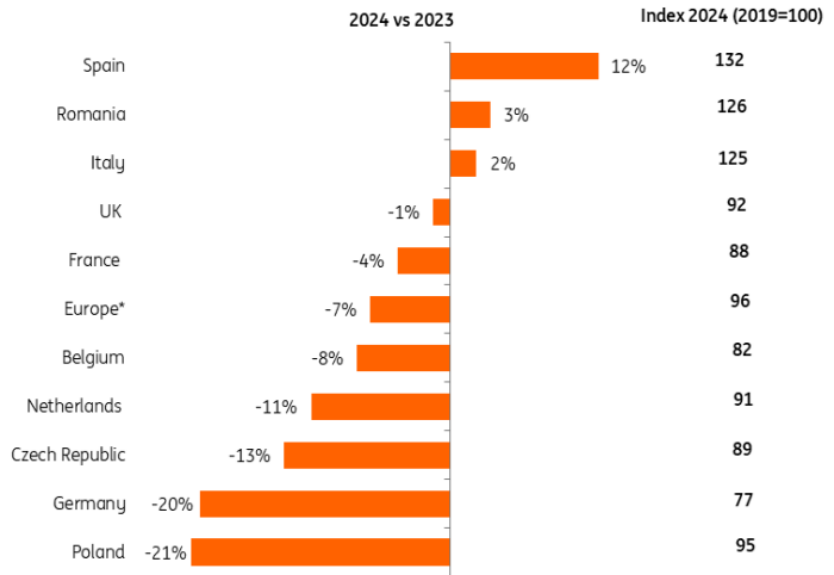


\*ING Research  
Source: ACEA

Weak German order intake is weighing on market performance in Europe, especially for heavily represented brands. German new order intake of Mercedes, for example, even halved in the third quarter compared to the previous year and the full market dropped by 35%.

### Southern European truck markets beat the average

New truck registrations >3.5 tonne in European countries 1-3Q 2024



Source: ACEA, \*EU+EFTA+UK

### Prices of new trucks are dropping following relaxation of the market

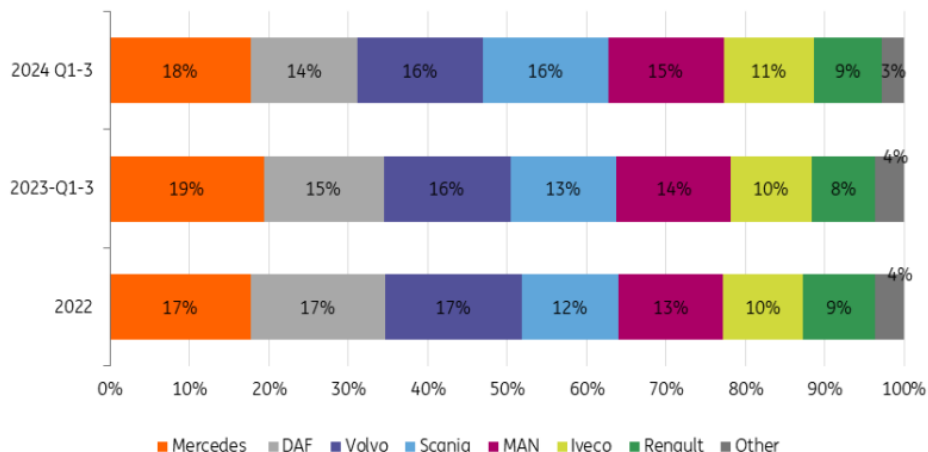
Truck customers have regained bargaining power again. Consequently, sharper price negotiations have resumed, especially for fleet deals. Prices of new trucks are falling after a sharp increase, although this varies by brand. The days of paying €125,000 for a tractor during the height of scarcity and high raw material prices are over in fleet deals, but prices remain above €100,000.

Prices are unlikely to return to previous levels due to the pass-through of peak inflation of 15-20% in truck manufacturing costs. Additionally, significant investments in the development of zero-emission trucks, further reduction of lifecycle emissions (Euro VII\*), and higher European safety requirements will result in permanently higher prices. For example, the introduction of [new general safety regulations \(11 safety systems\)](#) will make trucks approximately €2,000-4,000 more expensive from mid-2024.



**Mercedes still leads the European truck market, Scania gains on strong deliveries after solid order intake**

Share of total new truck registrations > 6 tonnes in EU + EFTA + UK



Source: MAN, ING Research

**DAF and Volvo gained market share in Europe, MAN's stake under pressure**

Market shares in the European truck market have remained relatively stable, with shifts mainly due to new model introductions. Supply chain issues also impacted market composition.

DAF maintained production well through 2022, and its new fuel-saving models (XF and XG) were well-received, though their impact lessened by 2024. Scania rebounded well due to pent-up demand, with strong order intake through the first quarter of 2024, leading to increased deliveries and market share in 2023.

Volvo's early advantage in e-trucks is fading as we approach 2025. MAN, significant in Germany, faced production interruptions in 2022 and had to suspend orders but partially recovered in 2024.

**More attention to truck emissions report when consider ordering**

With increasing attention on transport's CO2 footprint, there is also more interest in the so-called [VECTO report](#) that comes with the registration of a new truck. This contains vehicle emission details and this is also the basis for the mandatory CO2 reduction over the average production for manufacturers. With an eye on CO2-linked mileage charging (such as in Germany), transport companies can see in advance which emission class the truck will end up in and, if desired, make adjustments.

**Second-hand market sees larger inventories and lower prices**

Demand for used trucks is relatively responsive to changes in market conditions and has already fallen in anticipation of the new truck market in 2023. With the increased capacity in the road transport market, the stock of used equipment has grown, leading to a sharp drop in prices.

At the same time, sustainability is gaining a stronger foothold in the second-hand market, with increasing differences in supply and price between relatively new and older equipment. It appears that second-hand prices have bottomed out, although the market is not expected to pick up significantly in 2024.

## Truck manufacturer update

### Daimler Truck

In the third quarter of the year, Daimler Truck sold 114,917 vehicles, down 11% year-on-year, including 49,176 units in Trucks North America, up 4% YoY, 28,688 units in the Mercedes-Benz segment (-28% YoY), 32,245 units in Trucks Asia (-15% YoY) and 6,677 units of Daimler Buses (-2% YoY). During the first nine months of this year, Daimler Truck sold 336,023 vehicles, down 13% YoY.

In the third quarter of 2024, the truck manufacturer had revenues of €13.1bn, down 5% YoY, and EBIT of €873m, down 27% YoY. The company's Trucks North America had a positive performance during the reported quarter, with revenue of €5,991m, up 5% YoY, and EBIT of €722m, up 2% YoY, while the Mercedes-Benz segment underperformed, with revenue of €4,398m, down 19% YoY, and EBIT of €80m, down sharply by 82% YoY. In 3Q24, the Trucks Asia segment had revenue of €1,483m, down 11%, and EBIT of €57mn, up 27% YoY, while the Daimler Buses had revenue of €1,234m, up 4%, and EBIT of €140m, up 100% YoY. In terms of operational factors impacting segmental performance, the Mercedes-Benz segment was clearly impacted by significantly lower vehicle sales volume, in particular, in the EU30 region.

In the current reporting year, Daimler Truck expects the global economy to slow slightly compared to the prior year, with the monetary policy environment remaining restrictive and impacting consumer demand and capital investments. After the third-quarter release, the company maintained its unchanged outlook for FY24, with unit sales of 460,000 to 480,000 vehicles, revenue of €53bn to €55bn and reported EBIT significantly and adjusted EBIT slightly below the prior-year level.

### Volvo Group

In 3Q24, Volvo Group had net sales of SEK117.0bn, down 12% YoY (-7% YoY when adjusted for currency movements), and adjusted operating income of SEK14.1bn, down 27% YoY, with the respective margin of 12.0%, down from 14.4% in 3Q23. In the reported quarter, the company had deliveries of 46,266 trucks, down 16% YoY, and deliveries of 11,703 units of construction equipment, down 12% YoY. The truck delivery declines were caused in part by the light-duty vehicle change-over in Europe, which commenced this past strong while heavy-duty truck deliveries were down 9% YoY from the very strong comparative base of the prior year.

According to the company, in 3Q24, demand continued to normalise in the majority of Volvo Group's markets, with freight and construction activity down in many regions across the world relative to the very high levels of the prior year. The company also noted that in 3Q24 order intake for heavy-duty trucks declined by 7% YoY, due to a cautious customer approach towards ordering for 2025 given macroeconomic uncertainties.

Volvo Group adds that with the adjusted production programmes during the first half of this year, the European production volumes are more balanced relative to the current market demand with a positive book-to-bill ratio for the heavy-duty trucks in the third quarter of this year. In North America, the company also adjusted its production volumes to reduce inventories while also commencing the production of the new Volvo VNL range. The company also indicated that demand for buses remained resilient, in particular, for coaches.

In 3Q24, the European truck market continued to decline from the high comparative base of 2023, with freight volumes and freight rates also down from the recent

peaks, and the underlying demand is primarily underpinned by the replacement activity. The North American market is driven more by the vocational market segment, whereas demand for on-highway trucks is weaker. The company notes that in North America many retail customers are in a wait-and-see mode, waiting for more clarity on the outlook for the freight market. In India, the truck market was rebounding after the general elections while being also adversely affected by the longer monsoon period, which affected mining and infrastructure projects. There was a high degree of competition in the Chinese freight market, with overcapacity in the transportation sector, high dealer inventories and pricing pressures for diesel-run trucks.

For FY24, Volvo Group sees Europe's heavy-duty truck market at 300,000, the North American heavy-duty truck market at 290,000 units, the China medium and heavy-duty truck market at 750,000 units, Indian medium and heavy-duty truck market at 370,000 and the Brazilian one at 100,000.

#### **Paccar**

In 3Q24, Paccar had net sales and revenues from Trucks, Parts and Other of \$7.7bn, down 6% YoY, and respective income before income taxes of \$1.0bn, down 24% YoY. Overall, with the Financial Services, the company had sales and revenues of \$8.2bn, down 5% YoY, and pre-tax profit of \$1.3bn, down 21% YoY. In terms of regional sales, in 3Q24, Europe's sales were down 20% YoY, and sales in the United States and Canada were down 5% YoY.

In the reported quarter, Paccar had net truck deliveries of 44,900, down 10% YoY, including 25,900 in the United States and Canada, down 6% YoY, 10,000 in Europe, down 31% YoY, and other regional deliveries of 9,000, up 11% YoY. In the first nine months of 2024, the company had net truck deliveries of 141,000, down 8% YoY, with deliveries down in Europe by 31% YoY, up in the United States & Canada by 4% YoY and up in the Other markets by 2% YoY.

#### **Traton**

In 3Q24, Traton Operations had sales revenue of €11.9bn, up 5% YoY, and adjusted operating results of €1.2bn, up 21% YoY, with the respective margin of 10.7%, up from 9.2% in 3Q23. In the reported quarter, the company had unit sales of 85,274, up 5% YoY, and incoming orders of 64,353, flat year-on-year. In the reported quarter, Europe was affected by weaker truck demand and unit sales, in particular, in Germany. In the US, demand for medium and heavy trucks remained robust while there was a weaker demand for Class 8 on-highway trucks. Furthermore, there were strong truck sales due to a favourable market environment in South America, in particular Brazil. In 3Q24, sales also benefited from catch-up sales after the prior mirror supply issue.

In the first nine months of 2024, Traton Operations had sales revenue of €34.3bn, up 3% YoY, and adjusted operating result of €3.6bn, up 15% YoY, with a respective margin of 10.4%.

#### **Thanks to:**

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Peter Leegstraten (Cornelissen), Thomas Fabian (ACEA), Ruud van Outersterp (Bas Trucks), Diederik Boon van Ostade (Bas World), Arjan Velthoven (TTM), Hans Everts and Frank Ruygrok (Bovag), Niels van der Aa (Daimler trucks NL), Paul Broos, Jeroen Janssen (ElaadNL), Dennis Steeghs (Ewals Cargo), Dolf Lutterman (Iveco Schouten), Niels van Kooten (Kleyn Trucks), André Menzing (Krone), Marcel Vermeulen (Millenaar and Van Schaik) Jacobjan Vermeiden, Chris Buijtenhuis (MAN Trucks), Gert-Jan Meijerink, Wijnand Derkman (Nijhof-Wassink Group), Jeroen Vaessen (Nijwa zero), Sacha Boedijn, Tom van Steijn (RAI Vereniging), Jan de Vries (Scania), Eric Visser, Diederick van Haselen, Peter Jan Troost (TIP trailers), Ambro Smit (TLN), George Seitzinger (Volvo van Dijk), Jules Menheere (Vos Deventer), Ben Vos, Pieter Derksen (Vos Logistics), Rogier Verkley (Wezenberg), Pieter-Bas Broshuis (Broshuis trailers), Ewout van Wijk (E. van Wijk logistics), Willem Feenstra (Heiwo),



# Europe's market for e-trucks set to accelerate in 2025

The European market for electric trucks will gear up in 2025 on the back of CO2 regulations for manufacturers and the start of production in larger series. Emissions reporting (CSRD) and mileage charging will take it further from the demand side, although e-trucking remains more costly

## Electric trucks are being pushed into the market under ambitious regulations

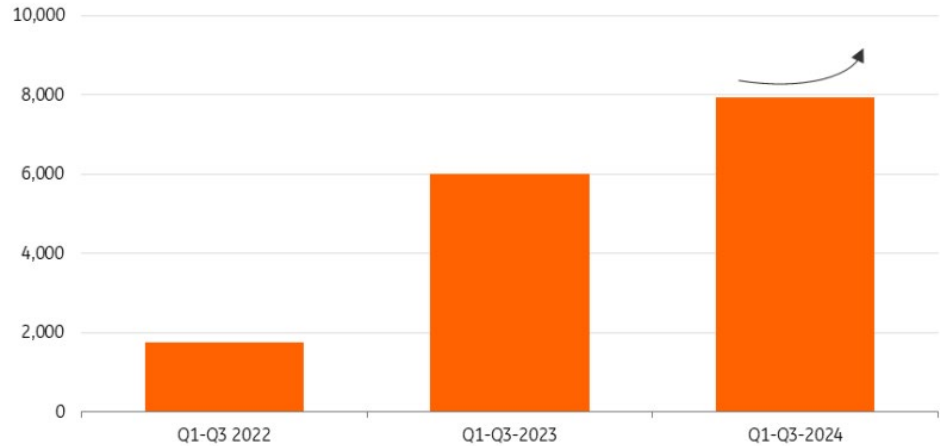
Battery electric trucks are currently seen as the most efficient zero-emission option for short and medium-haul trucking, and they are making significant inroads. European truck manufacturers are under pressure to decarbonise quickly. CO2 reduction targets\* of 15% by 2025 and 30% by 2030, compared to the 2019-20 baseline, incentivise the production of electric trucks, given that further efficiency improvements in diesel technology won't be sufficient to meet those targets.

In early 2024, the European Union agreed to raise this target to [a 45% reduction by 2030](#), necessitating even greater efforts. Consequently, the composition of European truck sales will change significantly over the next decade, similar to the shift seen in the car market.

\*Based on registrations and measured with the so-called 'VECTO-calculation' certificate at the moment of registration and the average production).

## Number of e-trucks hitting the road about to accelerate

Registrations new electric trucks\* > 3.5 tonne in Europe (EU + EFTA + UK)



Source: ACEA, ING Research \*incl. small fraction of plug-in hybrids

## Sales of e-trucks begin

Manufacturers, including DAF, have begun or will soon begin series production, expanding the range of electric trucks. [The e-variant of the Daimler Mercedes Actros](#)

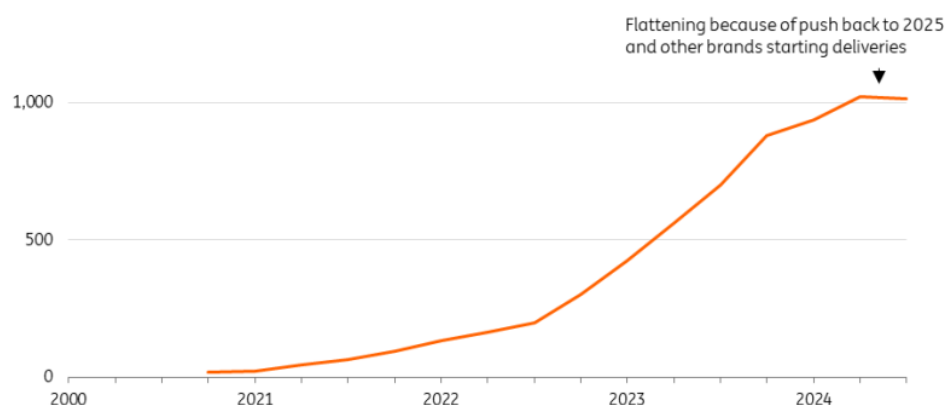


[tractor \(600\) with a range of 500km will hit the road in series early 2025](#). Scania also kicked off production of electric trucks for ranges up to 400km and [MAN planned to scale up production of the EGTX in 2025](#).

In the meantime, order books for e-trucks have started to fill up. The timing of the scale-up is not arbitrary; the European CO2 reduction target plays a significant role. Manufacturers have also pushed back deliveries towards the end of this year as they aim to count the e-truck deliveries after the turn of the year.

To meet European CO2 targets, the manufacturer association ACEA estimates that the installed fleet of zero-emission trucks will need to expand to 400,000 by 2030, up from approximately 13,500 at the end of 2024, so this is a huge challenge with just six years to go. This means the current 2.5% of European sales will need to quickly reach double digits. Volvo has been ahead of the curve and is the European market leader in electric trucks, accounting for 3.5% of its orders in 2024.

**Volvo was the first to deliver a larger series of e-trucks and others have followed**  
 Deliveries of electric trucks, Volvo per quarter (Almost all in Europe)



Source: Volvo, ING Research

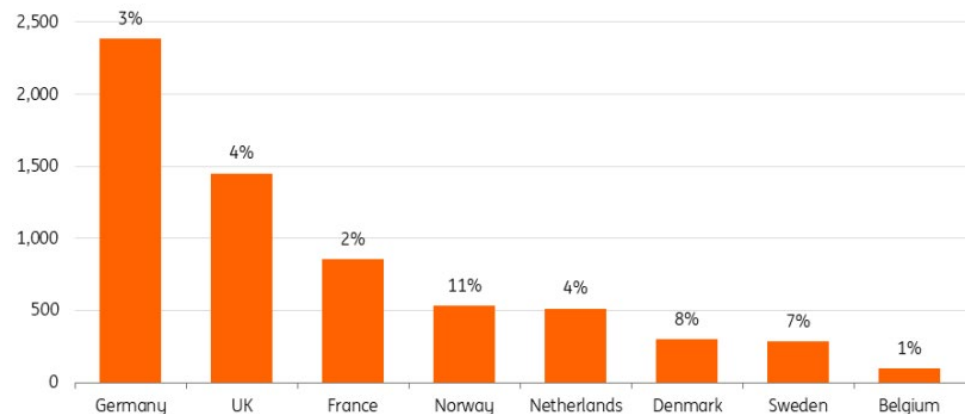
**Most e-trucks delivered in Germany, UK and France, but Nordics take the lead in the transition**

The sale of e-trucks has gained momentum, but the inflow has slowed in anticipation of new models expected in 2025. Most e-trucks are on the roads in Germany, the UK, and France, the largest European markets. However, Germany halted subsidies in early 2024, which may lead to a setback.

Relatively, the Nordics receive the highest number of e-truck deliveries. In the Netherlands, companies are gearing up for zero-emission zones in city centres starting in 2025. The push for electric trucks in the European Union is driven by CO2 reporting standards (CSRD). From 2024, larger companies will need to report their scope 1, 2, and 3 emissions, including transport activities.

### Most e-truck sales are in Germany, but largest market shares in Nordics

Registrations of new electric trucks (incl. plug-in hybrid) > 3.5 tonnes per country, 1-3Q 2024 and market penetration



Source: Volvo, ING Research

### E-trucks still much more expensive, but prices have started to come down

With prices ranging from €250,000 to €350,000, electric trucks are still substantially more expensive than diesel trucks (roughly 2-3 times higher). Continued development and extended ranges help keep prices up. However, the resumed downward trend in battery prices, the scaling of production, and intensified competition are driving prices down. The price of an E-Actros 600 tractor – for instance – has dropped below €300,000. Weak general demand for trucks likely contributes to this as well.

Although operational costs of e-trucks are usually lower\*, the higher total cost of ownership still deters most haulage companies from investing in electric trucks for their fleets. Investing in e-trucks requires an in-depth analysis of operations and requirements, as well as more intensive coordination and cooperation with clients, which is usually easier for larger trucking companies.

\*While energy costs are lower, some elements of maintenance are more costly. The lifecycle of tyres is, for example, 20-30% less because of higher wear.

### Manufacturers under CO2 pressure will continue to seek stirring influence

The pressure to green road transport comes from two sides. With the return of a buyer's market and the increased bargaining power of transport companies and fleet owners, truck manufacturers' control has not simply disappeared.

Truck manufacturers are now required to reduce CO2 emissions, with the first hurdle in 2025. This target is unlikely to be entirely achievable through fuel efficiency improvements alone. Therefore, the remaining reduction until 2030 will need to come from zero-emission trucks, [which also count double](#) towards the target.

The measurement for this is the VECTO value issued at registration. Failure to meet these requirements will likely result in large fines. Manufacturers will challenge dealers, and consequently, we can expect a significant acceleration in the delivery of zero-emission trucks by manufacturers between 2025 and 2030.

This also means manufacturers will retain some control over the market. CO2 taxes will make diesel mileage more expensive towards 2030, which supports demand, but manufacturers can also adjust pricing and availability to meet the targets.

### E-trucks initially deployed within smaller circles and on fixed routes

E-trucks will mainly be used for short and middle-haul routes. Additionally, their deployment on fixed routes, such as between distribution centers 200-250 km apart, is particularly promising. It's essential to include a safety margin of 20-25% in planning, especially due to the significant variations in energy consumption between summer and winter.

### Truck levy, ETS 2 and lower purchase prices will help narrow the premium for e-trucks

The gap between the total costs of ownership (TCO) of diesel trucks and electric trucks will narrow following policy changes in the upcoming years.

- In Germany, the regular MAUT levy increased significantly in 2024 due to the addition of a CO2 levy. For instance, a five-axle Euro VI truck now costs around €0.35 per km, an increase of over 80%. Electric trucks, however, are currently exempt. Austria also introduced [a similar levy](#) in 2024, as well as the [Czech Republic](#) and [Hungary](#), replacing the Euro vignette. The Netherlands will follow in 2026 and Belgium has [announced a similar step](#). In the Netherlands, [the revenues of this system will largely be redistributed via purchase subsidies](#).
- In Europe, it has been agreed that road transport will be included in a separate emissions trading system (ETS 2) by 2030. This charge comes on top of the national mileage tax (if in place) which could take the total extra costs to €0.50 per km or more, depending on the CO2 price. The levies will narrow the gap and make zero-emission transport more attractive. In addition, it seems reasonable to expect that the prices of electric trucks may fall further towards 2030 due to upscaling, competition and sales pressure.

\*The ETS 2 system starts with a fixed CO2 price of €45 per tonne, but this could change to a floating rate afterwards. Just as with the ETS system, carbon credits are gradually reduced towards 2050.

### Charging infrastructure remains a critical factor for the growth of the electric fleet

To support the adoption of electric trucks, suitable charging infrastructure is essential, as public fast-charging points for trucks are currently scarce.

In most cases, electric trucks will initially be used for shorter trips and therefore rely heavily on (overnight) 'depot charging'. To support the transition to longer distances such as 200-300km one-way and more, public charging is critical. Under the European AFIR directive, it has been agreed that a charging station with a charging capacity of 350 kW or more will be needed along the main road network (corridors) by 2030. An hour of charging is enough to cover about 200-250km. Ultimately, up to 50,000 such stations will be needed in the EU, in addition to 280,000 private charging stations. The expansion of the charging network will be evaluated in 2027, alongside the growth of the fleet.

Charging speed is also important. This should be 350 kW, or ideally, [megawatt-charging](#), as refuelling should be done during truck drivers' breaks and waiting is not an option. The joint venture of truck manufacturers [Milence](#) was also set up to help develop the charging infrastructure for road transport. The first locations have recently been opened, such as in Venlo (Netherlands), Hedebouville (France) and the port of Antwerp (Belgium), with a view to having 1,700 charging stations by 2027 and with much more on the [way](#).

An increasing number of companies are also opening up their charging facilities to third parties or are operating charging plazas specifically for this purpose. In certain cases, this can also be a solution to improve the occupancy rate and thus the business case of the charging infrastructure. Megawatt charging (MCS) (1,000 kW), which enables charging within half an hour, for example, is technically feasible but is still in its infancy. [The first charging station of this type has been opened](#) in the port of Amsterdam.

### **Hydrogen combustion engine long-haul option in the middle run**

Despite the focus on electric trucks, it is also clear that this is not yet an ideal solution for longer distances and heavy transport. In that respect, hydrogen in combination with an internal combustion engine can conquer its place in the future fuel mix. It is striking that all brands are working on this to a greater or lesser extent. For example, Volvo [has announced](#) the arrival of this concept and MAN has already [introduced a model](#).

The hydrogen combustion engine still has a small amount of oil consumption, but in principle remains below 3 grams of emissions per tonne/km and is considered a 'zero-emission vehicle' under European CO2 legislation. Long-distance, international transport and heavy transport are complementary to e-trucks.

The big advantage for customers is that there is an 80% overlap with a diesel engine, so there is no need for a complete reconfiguration and a price of 2-3.5 times that of a diesel truck remains significantly lower than that of a hydrogen fuel cell truck. This concept is therefore also higher on the agenda for manufacturers. However, the use of hydrogen remains relatively expensive, so this is unlikely to happen on any large scale before 2030.

### **Threshold for entry of new e-truck brands higher than for cars**

Entry into the truck market is more difficult for newcomers than for passenger cars. This is due to the relatively high importance of a well-developed service network and after-sales service. After all, a high degree of up-time is crucial in road transport.

This does not change the fact that new brands can enter the market in collaboration with an existing party. Think of Hyundai and BYD. For the Tesla-Semi, for example, type approval under the rules for weights and measures is still a bottleneck and a delaying factor. The actual European introduction of this remains a question mark for now. Ford has also recently become active again with the sale of trucks on the Dutch market, aiming for a few percent market share by 2030.

### **CSRD will require transport companies to track CO2 emissions**

The Corporate Sustainability Reporting Directive (CSRD) requires companies to disclose their performance on a set of environmental, social and governance (ESG) indicators. As part of this, large (listed) companies will have to report (and substantiate) CO2 emissions in the value chain for the first time in 2025 (for 2024) and this will therefore be audited.

This applies not only to their own emissions (scope 1 and 2), but also to the emissions of suppliers (scope 3). This means that transporters who work (directly and indirectly) for these companies will have to provide figures (see below).

## From 2024 onward, CSRD will force shippers and their transport partners to keep track of CO2 emissions

Timeline of implementation of CSRD (relates to reporting year\*)

### Obligation to report on CO2 emissions applies to\*:

#### Scope 1

Direct emissions, among others. Emissions from the own fleet of cars  
Emissions from own carriers that have not outsourced transport

#### Scope 2


Indirect emissions, such as the purchase of electricity for consumption at the sites

#### Scope 3

Indirect emissions in the chain, both at buyers and suppliers

	Scope 1	Scope 2	Scope 3
<b>1 januari 2024</b> <b>For listed companies**</b> This mainly concerns industrial and retail customers	✓	✓	✓ 
<b>1 januari 2025</b> <b>for large companies***</b> that meet two of the following criteria: 250 employees or more €40 million turnover or more €20 million balance sheet total or more This also concerns, for example, larger construction companies and wholesalers	✓ 	✓	✓ 
<b>1 januari 2026</b> <b>for listed SMEs</b> 10 employees or more €700,000 net turnover or more €350,000 in total assets or more	✓ 	✓	✓ 
<b>1 januari 2028</b> <b>for non-EU companies established in the EU</b> subject to the CSRD reporting obligation. a net turnover of more than €150 million in the EU	✓	✓	✓ 

✓ = companies with a Reporting obligation

✓  = This category also includes carriers who are subject to a reporting obligation (either themselves or to the client)

\* Reporting follows at the end of the year with annual reporting

\*\* For carriers, this also includes the emissions of charters that drive for them.

Commuting by private car or public transport is also included that must comply with the Non-Financial Reporting Directive (NFRD) (first publication 2025) that are not currently covered by the NFRD



### **Measuring is still a matter of exploring: 'a pallet to a specific destination has different CO2 emissions every time'**

The transport management system (TMS) already provides figures, but the question is how transport clients want the figures to be delivered. Measuring (total) emissions is the first step. For transporters, the challenge is first to keep track of CO2 emissions and then to further develop the dashboard with indicators.

The actual CO2 emissions per kilometre or trip do not tell the whole story either. For example, weight plays an important role in fuel consumption, but also the trip distance and whether it concerns full truck loads or various addresses delivered (such as groupage). In international transport, [ISO 14083](#) has established a standard for allocating CO2 emissions in the transport chain, but in practice broad standardisation of clients' reports will take time.

The increasing use of biofuels has little effect on the exhaust because CO2 and other harmful gases are still emitted. The view that biofuels reduce CO2 emissions by 80-90% is based on the assumption that the biomass will be replanted or come from residual flows. Transporters receive renewable fuel units (HBEs) for this purpose and [the Dutch emission authority checks the origin](#).

### **No 'licence to operate' yet, but that could be the future**

Shippers may not yet be certain about their requirements from carriers, but this will become clearer in 2025 following the first audit. At that point, companies and their stakeholders can begin making comparisons. While it is not yet a 'license to operate' for haulage companies, it could become one, particularly as the regulation extends to non-listed and smaller companies.

For industrial companies, emissions from transport are not always the main priority, given the small share and the distance to the consumer, but for retail companies – such as supermarkets – this is different. Ultimately, all transport will have to move towards zero emissions.

### **Supply chain relationship intensifies due to reporting obligations**

The relationship between carrier and client will intensify as a result of the energy transition. This applies to situations where zero-emission transport is already mandatory, such as in several city centres, but certainly also to the new reporting obligations. The (more intensive) monitoring of emissions also has advantages for transporters themselves, because performance becomes more transparent and therefore steps forward can be made.

Different links in the chain will account for themselves to each other and follow progress. This is something that the [Customer Due Diligence Directive \(CSDDD\)](#), adopted by the EU in May 2024, also aims to do. At the same time, this requires the sharing of data, which is not always done smoothly.



## Trailer market: seeking new horizons after setbacks

Since 2023, the European trailer market has transitioned from overheated to undercooled, with standardised trailers the most affected. However, deliveries are expected to bottom out in 2025, resulting in a stable outlook overall

### The European trailer market has swiftly rebounded after a period of high demand

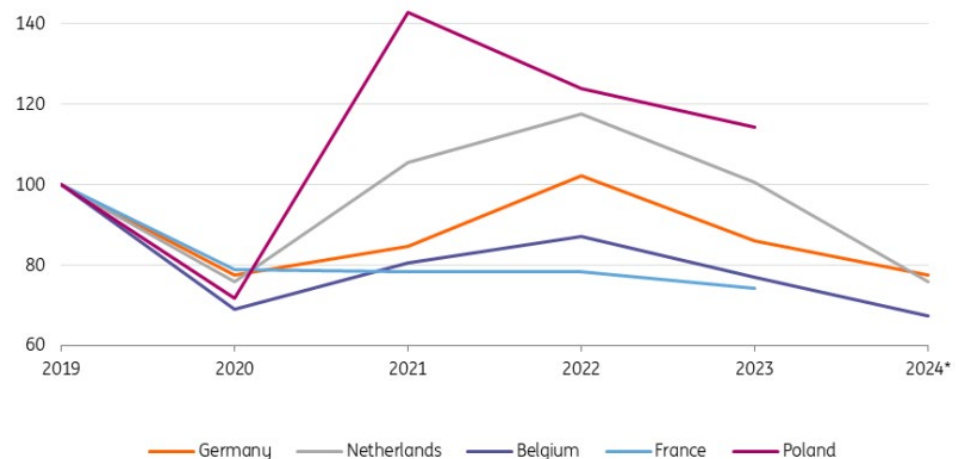
The European trailer market rebounded quickly from the pandemic lows. Trailer manufacturers encountered component shortages (such as axles), but less severe than in truck production where electronics are more important.

Accelerated by pent-up demand, registrations surpassed their pre-pandemic registration levels and even reached record highs in Poland and the Netherlands in 2021 and 2022. The tide turned quickly in early 2023 amid slowing transport volume and higher interest rates. Long delivery times rapidly disappeared.

In the first half of 2024, market leaders Krone and Schmitz introduced temporary reductions in working hours ('kurzarbeit'), illustrating the production setback. In 2024 we expect registrations in some Western countries to end up below 80% of 2019 levels.

### Trailer registrations dropped further from highs in 2024

Development of new semi-trailer registrations (2019 = 100)



## Trailer fleets haven't reduced during low tide as divestments aren't worth the deal

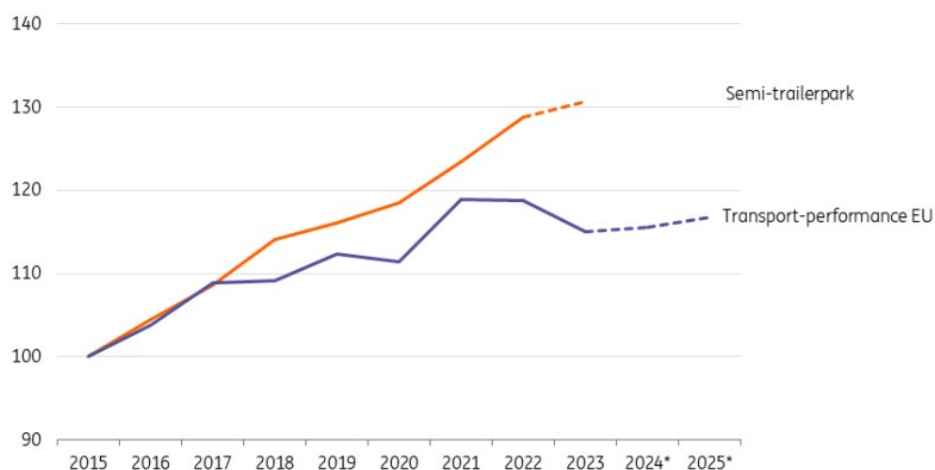
The European semi-trailer fleet has expanded steadily through the economic cycle, increasing its unit volume by 30% since 2015.

The total fleet hit an estimated volume of around three million in 2022 (in EU + EFTA + UK) and, despite the sales decline in 2023, figures from the Dutch trailer fleet still suggest the fleet has likely grown mildly (+1.5%).

This is primarily because remarketing is not profitable in the current market. As a result, trailers are often parked 'just in case.' The trailer fleets have particularly expanded in key European countries for international long-haul transport, such as Poland, Romania, and Lithuania.

### Fleet expansion, trailer hoarding and demand correction created rest capacity

Development of trailerpark vs. transport performance in ton/km (EU), index (2015 = 100)



Source: Eurostat, \*Forecast ING Research

## Widened gap between capacity and freight, but also reasons for a larger fleet

The gap between the trailer fleet and transport demand has widened with the post-pandemic surge of deliveries and the setback of freight volumes in 2023. Owners have also been sticking to older trailers. Consequently, the average age of the fleet has increased. There are multiple reasons for this phenomenon:

- **The transport market has become more volatile and less predictable which requires higher flexibility:** 'just in case'. Keeping trailers in the fleet costs a little extra, and more trailers don't necessarily require more drivers. Consequently, the trailer-truck ratio has gone up.
- **Drawbars are increasingly being replaced by semi-trailers.** These are deemed more flexible in operations. Even in countries with a long tradition of drawbars and swap bodies, such as Germany, the semi-trailer gradually gains ground.
- **The role of trailers in logistics operations has expanded.** Trailers are more often used as means of storage (e.g. at warehousing docks). Also, trailers travelling between the UK and the European continent have longer turnaround times since Brexit.

Despite the reasons for expansion, there is overcapacity in 2024. The fact that the need for equipment was lower in the first half of 2024 was also evident from the lower occupancy rates and a larger share of short-term contracts from trailer rental companies.

A larger share of 'suspended' semi-trailers in the Netherlands (almost 5% at the start of 2024, compared to 4.4% a year earlier) is also a sign of this. The cautious improvement of transport demand requires some additional trailers in service, but the outlook does not give much reason to expand fleets.

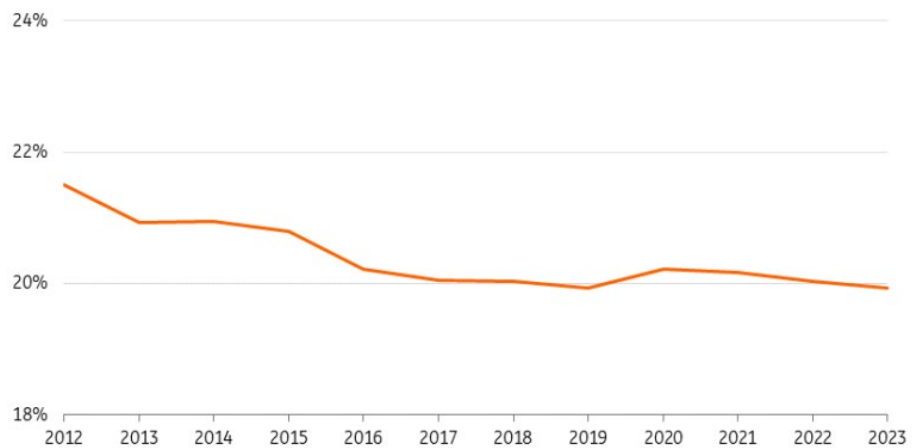
### **Fleet efficiency improvement weighs less on the installed base (for now)**

Efficiency is another factor influencing the trailer market dynamics. While vehicle occupation rates have improved over time, further efforts to enhance efficiency and reduce empty runs have proven challenging in the current economic climate.

Despite the benefits of digitalisation and platforms, further efficiency improvement has stalled. The impact of regulations (such as driving time, rest hours and locations) in combination with a less predictable freight market and inflexible client preferences limits the upside. Intensified cooperation (data-sharing) and perhaps the use of artificial intelligence in planning still provide opportunities to lower empty running going forward.

### **Reduction in empty running in European road haulage stagnated**

Share of empty road freight transport vehicle km's in the EU-27 per year



Source: Eurostat \*ING Research

### **Contraction continues in 2024, more replacements could be on the cards for 2025**

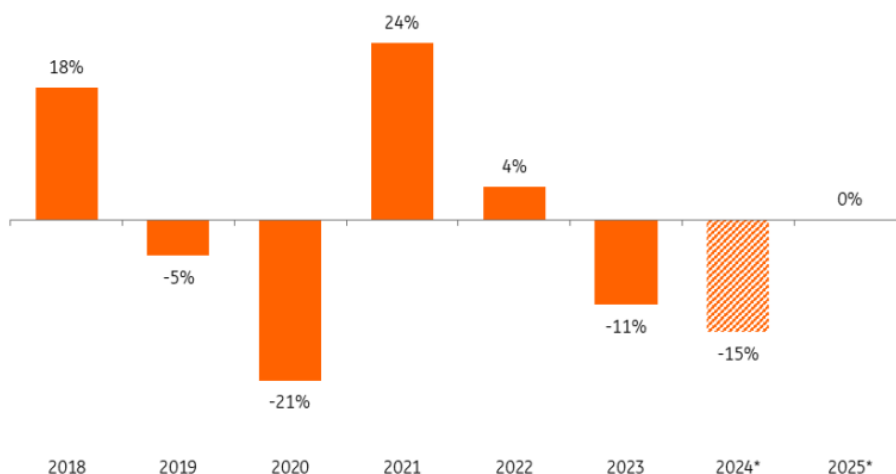
Traditionally, the trailer market is highly responsive to economic changes, as investments in trailers are easier to delay compared to trucks. Unlike the truck market, new trailer sales dropped from record levels in 2023. On average, new trailer registrations across European countries decreased by about 10% in 2023. By early 2024, occupancy rates for trailer rental companies were no longer near their natural maximums.

Consequently, newly ordered trailers weren't immediately called by buyers, with manufacturers Schmitz and Krone operating at low capacity levels. In line with this, we expect another contraction of some 15% in 2024.

With economic growth and freight volumes slowly picking up and interest rates coming down, a turning point could be reached in 2025. Lower prices could also help replacements to catch up.

Large fleet owners such as leasing companies TIP and PNO reduced investments in their fleets, but leasing companies are an important factor in a market recovery. The leased-out share in the trailer market has become significant over time and full-operational solutions like 'trailer as a service' have been introduced.

### Setback of the European trailer market continues in 2024 – turning point expected in 2025



(European)\*\* registrations of semi-trailers YoY

Source: RAI/RDC/RDW, Febiac, VDA, SDES-RSVERO, \*ING Research, \*\*Includes The Netherlands, Belgium, France, Germany, Poland

### Moderation of increased prices due to returned competitive pressure

After a phase of inflation and an even stronger increase in trailer prices, a buyer's market has fully returned, driving down prices. Prices of new trailers rose by at least 25% by 2022 against the backdrop of the inflation shock, but in 2024 prices were down significantly again, as price tags of new curtain siders point out.

Lower raw material prices are also a reason behind this. This is gradually fed through in the supply chain, due to forward agreements. At the same time, higher wage costs push up production costs. Nevertheless, price pressure is back for manufacturers, especially in larger deals. This also put an end to the recent popularity of refurbishments among fleet owners.

### Market for standard trailers most sensitive to the economic cycle

The market decline has hit 'standard' curtain sider trailers the hardest. These are often ordered in larger quantities and usually have a shorter delivery time than specialist trailers, such as bulk trailers or heavy-duty trailers that are often made by smaller specialised manufacturers.

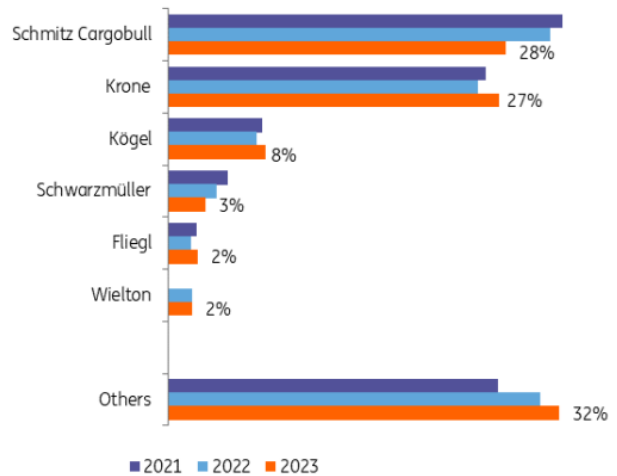
Orders for new curtain sider trailers – e.g. used for industrial products – are also more cyclical than refrigerated trailers that are often used for the transport of foodstuffs. Within the more specialised segment, the container chassis is one of the most market-sensitive models due to its dependence on global container handling.

### Second-hand trade doesn't help in the current trailer market

Overcapacity is also putting pressure on the second-hand trailer market and the 'remarketing' prices of used equipment. The disappearance of the Russian market as an important sales channel for young, used trailers is also still being felt. As a result, prices are still under heavy pressure and trailers remain in circulation on the European market for longer before they end up outside Europe.

Remarketing does not always pay off sufficiently for carriers. With the meagre growth forecasts, there is no prospect of an improving second-hand market yet.

**Schmitz and Krone closer in 2023, specialists manufacturers gain ground**  
Market shares in new semi-trailer registrations in Germany per year



Source: SIX

**Market share of curtain side trailers has rebounded following price hikes for box trailers**

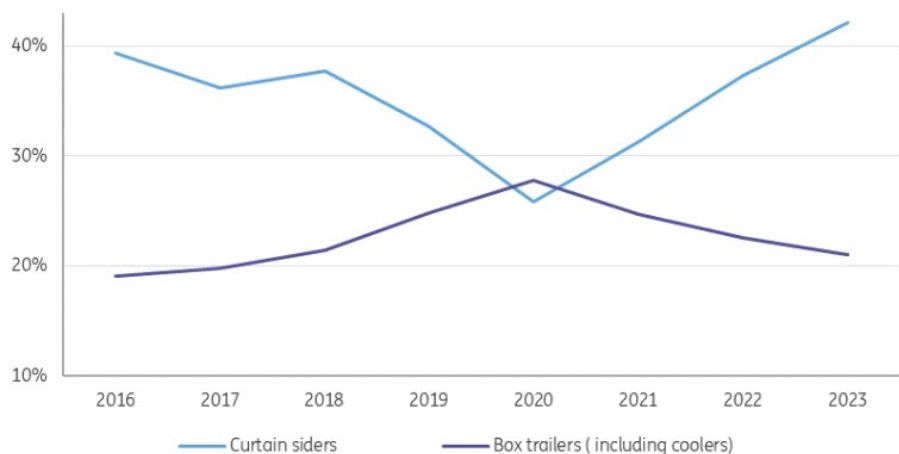
Recently, there has been a shift in trailer registrations from traditional curtain siders to box trailers due to security concerns. The rise of e-commerce has also had an impact here as this requires higher protection against cargo theft.

The 'cold chain' is also growing faster than the average, creating demand for cooler box trailers. In 2020, the share of fixed box trailers even surpassed that of traditional curtain siders. However, this trend has not been sustainable over the past two years, with curtain sider sales rebounding and their market share reaching 40% again.

Large (rental) fleet orders have driven curtain sider deliveries, but recent significant price increases for heavy box trailers have reversed this trend. Nonetheless, we still anticipate the box trailer share of the fleet to remain larger than before.

**Popularity curtain sider returns with higher prices for box trailers**

Share of main semi trailer configurations in total new registrations in Europe's largest market Germany



Source: RAI, KBA, ING Research

**Peak popularity of 'refurbishment' is over**

With the decline of the trailer market and lower steel prices, the popularity of 'refurbishment' has decreased. While new trailers have become cheaper again,

maintenance costs have also increased due to higher wages and staff shortages. In combination with innovations such as the regeneration axle, this makes new trailers more interesting again.

### **Emission reduction requirement is a major challenge for trailer manufacturers**

Emissions are a top priority for trailer manufacturers. With the adoption of the 2030 emission reduction target for truck manufacturers, the European Union has set a reduction target of 10% for new trailers and 7.5% for existing trailers compared to 2025 levels. This target is based on the VECTO value, which measures the trailer's contribution to CO2 emissions per kilometre using a set of indicators.

The delivery of a VECTO report has also become mandatory for new trailers as of 1 July 2024. Trailer manufacturers argue that it would be highly challenging to get any further than 7.5% based on weight reduction or other materials. And fuel-saving aerodynamic features are not popular due to their susceptibility to damage. However, there are encouraging developments in the field of electrification of the shaft and cooling, but this is not yet included in the reduction equation. If that does happen, the target will be easier to achieve.

### **Electrification brings promising innovations that can stimulate investments in trailers**

The trailer market is less known for innovations than the truck industry, but the developments in electrification are promising and can add value. In doing so, they can also stimulate fleet renewal and attract new investments.

The regeneration axle – which recovers braking energy – has matured and homologation is taking place in several European countries. Scaling this up is nevertheless promising. This, in combination with a diesel tractor, is expected to save around 15% on fuel and can be an additional reason for replacement.

The vast majority of cooling systems on trailers are still equipped with diesel engines, but that is starting to change as well. For the power supply of electrical installations, it is ideal if there is a direct energy source (such as the regeneration axle in combination with rooftop solar panels).

### **E-trailer offers considerable savings, but there are disadvantages**

A step further with the electrification of the axle is the push-up axle or e-axle that functions autonomously based on its own battery pack. The e-axle has been approved by the European Commission but is still in the process of certification.

The e-axle shows great promise, potentially reducing fuel consumption by 30% when paired with an e-truck (according to Krone test results) and extending the electric truck's range by an additional 200-300 km. However, there are still some doubts about its optimal deployment in practice.

For instance, trailers are frequently swapped and transported by boat, making fixed tractor-trailer combinations uncommon, often with different owners. Additionally, the need for independent charging is seen as a burden. However, a significant advantage is that e-trailers can also be used with diesel trucks, eliminating the need to wait for further fleet electrification.

#### **Thanks to:**

##### **Europe**

Mark Mulder (Girteka), Marek Zdanowicz (Raben Logistics), Eric Muller (GoodYear), Matthijs Reinders, Anatol Holland (Daimler Trucks), Pauli Johannesen (PNO Rental) and others.



### Netherlands

Peter Leegstraten (Cornelissen), Thomas Fabian (ACEA), Ruud van Outersterp (Bas Trucks), Diederik Boon van Ostade (Bas World), Arjan Velthoven (TTM), Hans Everts and Frank Ruygrok (Bovag), Niels van der Aa (Daimler trucks NL), Paul Broos, Jeroen Janssen (ElaadNL), Dennis Steeghs (Ewals Cargo), Dolf Lutterman (Iveco Schouten), Niels van Kooten (Kleyn Trucks), André Menzing (Krone), Marcel Vermeulen (Millenaar and Van Schaik) Jacobjan Vermeiden, Chris Buijtenhuis (MAN Trucks), Gert-Jan Meijerink, Wijnand Derkman (Nijhof-Wassink Group), Jeroen Vaessen (Nijwa zero), Sacha Boedijn, Tom van Steijn (RAI Vereniging), Jan de Vries (Scania), Eric Visser, Diederick van Haselen, Peter Jan Troost (TIP trailers), Ambro Smit (TLN), George Seitzinger (Volvo van Dijk), Jules Menheere (Vos Deventer), Ben Vos, Pieter Derksen (Vos Logistics), Rogier Verkley (Wezenberg), Pieter-Bas Broshuis (Broshuis trailers), Ewout van Wijk (E. van Wijk logistics), Willem Feenstra (Heiwo),

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