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Investments by European truck manufacturers into zero-emission technologies

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About this report

This report has been commissioned by Transport & Environment. This report analyses the investments of European truck manufacturers in zero-emission and fossil fuel technologies between 2019 and 2025.

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Authorship

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Summary

This report analyses the investment behaviour of European truck manufacturers between 2019 and 2025, and examines whether these investments contribute to paving the way to zero emissions. Although some of these companies also produce vans, buses and heavy equipment, the research focuses on their activities related to trucks.

The report centres around two specific investment categories. The first includes investments in zero-emission (ZE) technologies, such as battery-electric and hydrogen-based propulsion systems, as well as charging networks. The second category covers investments in internal combustion engine (ICE) technologies, such as diesel or gas. The project analyses the investment patterns of five European truck manufacturers: DAF Trucks, Daimler Truck, Iveco, TRATON (with the subsidiaries MAN and Scania assessed separately), and Volvo Group (including Volvo Trucks and Renault Trucks).

Chapter 1 sets the scene for the European truck market, including its size and climate regulations.

Chapter 2 summarises media and company announcements from 2019 to December 2025 about specific projects from the five major truck manufacturers and additional sources, focusing on research and development (R&D) spending and investment in ZE, ICE, and other areas. Media and company announcements include annual and sustainability reports, press releases, and other news from various sources. Based on this information, the chapter provides an analysis of how each truck manufacturer allocates resources across these areas.

Chapter 3 analyses the key financial data of the five companies for the 2019–2024 period, as reported in and based on their financial statements in the annual reports. The chapter includes data on revenues, the share of European revenues among the five companies, R&D expenditures and investments reported in the financial statements, net operating profit, net profit, dividends and share buybacks.

Chapter 4 integrates and compares the findings from Chapter 2 and 3. This chapter examines the ZE investments announced by companies from 2019 to 2025 and evaluates them within the context of each company's key financial indicators.

Chapter 4Chapter 5 also includes the views from three experts, which provide context to the announcements and key financial data.

Finally, Chapter 5 draws conclusions from the research findings. The key outcomes are summarised in Table 1. The main findings are as follows:

- There is a significant lack of transparency regarding R&D expenditures and investments in ZE technology. This occurs in media announcements as well as in financial statements in annual reports.
- European truck manufacturers often fail to specify which portions of their ZE announcements relate to the European market versus other regions, and they rarely provide granular breakdowns of spending between trucks, buses, and other vehicle categories. In the financial statements, there is no detail on the geographical division of R&D expenditures and Investments, nor is there any detail on ZE or ICE R&D and Investments.
- As a result of the lack of transparency, the perception of the companies' ZE transition deviates from what experts indicate. For instance, while the Volvo Group is considered a frontrunner in the ZE transition by experts, its public communication regarding these specific investment details falls significantly short.
- The EU Taxonomy has no material added value in understanding the efforts of European truck manufacturers transitioning to ZE technologies.

- After the negative impact of COVID-19, the five European truck manufacturers have seen a recovery in their net profit margin. Between 2019 and 2024, the companies accumulated a total global net profit of €57 billion. Of this sum, €37 billion (66%) has been paid out to shareholders in the form of dividends or share buybacks.
- Between 2020 and 2024, R&D expenditures and Investments grew by €5.7 billion across the entire group. Meanwhile, the sum of dividends and share buybacks increased by €7.2 billion, funded by net profits that grew by €12.4 billion. This suggests HDV manufacturers have prioritised growth in net profit and shareholder returns over R&D and investments in ZE.

Table 1 Key data analysis of European truck manufacturers

	Global sales	**European share**	**R&D + Inv. as % of revenues**	**Net profit margin (%)**	**Dividend + SBB as % of net profit**	**Value of all Ann. as % of total R&D + Inv. reported**
Period	*2024 (€ bln)*	*2024*	*2019–2024*	*2019–2024*	*2019–2024*	*2019–2025**
Paccar / DAF	31.1	14.8%	7.1%	10.6%	46.5%	14.0%
Daimler Truck	54.1	27.3%	6.7%	4.1%	102.2%	60.5%
Iveco Group	15.3	63.5%	9.4%	0.5%	47.1%	59.7%
TRATON	47.5	48.9%	8.0%	3.9%	30.5%	81.9%
Volvo Group	50.0	41.0%	10.6%	8.2%	73.9%	6.7%
Total	**198.0**	**36.8%**	**8.3%**	**5.8%**	**65.5%**	**41.9%**

Source: Profundo, annual reports, media releases, other sources. R&D = Research & Development expenditure; Inv. = Investments; SBB = Share Buyback; Ann. = media and other announcements; ZE = Zero-emission; *) 2025 is included in the time period, as the analysis also includes media announcements from 2025.

Abbreviations

BETs	Battery-Electric trucks
CapEx	Capital Expenditures = Investments
DNSH	Do Not Significantly Harm
EBIT	Earnings Before Interest and Tax
EU	European Union
GHG	Greenhouse Gas
HDVs	Heavy-Duty Vehicles
ICE	Internal Combustion Engine
OEMs	Original Equipment Manufacturers
OpEx	Operating Expenditures
PPE	Property, Plant, and Equipment
R&D	Research and Development
SBB	Share Buyback
ZE	Zero-Emission

1

Introduction to the European truck market

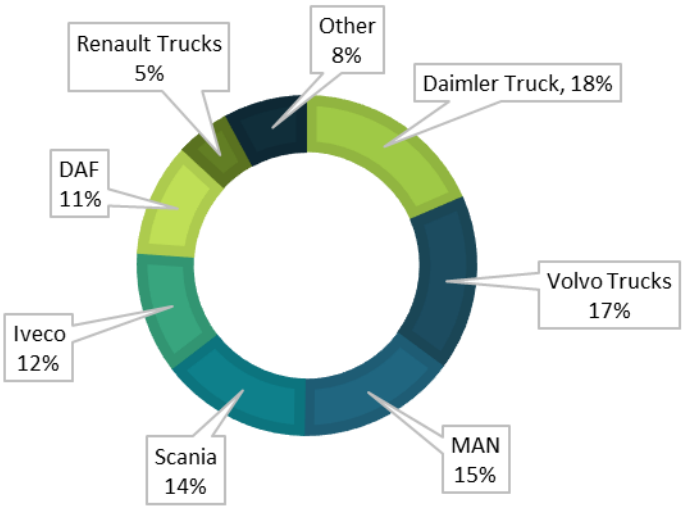
This chapter describes the size of the European truck market, market shares, and the emission reduction regulations.

1.1 Introduction

Heavy-duty vehicles (HDVs) account for more than one quarter of road-transport greenhouse-gas (GHG) emissions in the European Union (EU) and over 6% of the EU's total emissions.[1] HDVs include trucks, buses and coaches. This report focuses specifically on heavy-trucks, which accounted for 90% of all HDV sales in 2024.[2] In 2024, 327,896 trucks were sold in the EU, with zero-emission (ZE) trucks accounting for 2.3% (7,500) of the total[3].

The market shares in Europe of major original equipment manufacturers (OEMs) in the truck segment in H1 2025 were as follows (Figure 1):

Figure 1 Market shares of OEMs* in the European truck segment



Source: Profundo (2025), based on Dataforce (2025), "Commercial vehicle registration data H1 2025": *) Scania and MAN belong to TRATON, and Renault Trucks and Volvo Trucks belong to Volvo Group.

Aligned with the objectives of the EU Green Deal and 2050 climate neutrality targets, the EU Commission has established a strict regulatory framework to accelerate the decarbonisation of the HDV segment. CO_2 emission reduction targets are set at 15% by 2025, 45% by 2030, 65% by 2035, and 90% by 2040 relative to 2019/21.[4]

These targets aim to cut the sector's CO_2 emissions and reliance on fossil fuels. This aligns with the overarching goal of reducing the energy dependence on fossil fuels and accelerating the transition to renewable energy sources.[5] [6]

This project analyses the investment behaviour of European truck manufacturers from 2019 to 2025. It focuses specifically on investments in two categories. The first category covers investments in ZE technologies, including battery-electric and hydrogen-based propulsion systems. The second category involves investments in internal combustion engine (ICE) technologies. The project analyses the investment patterns of the five largest truck OEMs in the EU: Daimler Truck, DAF Trucks, Iveco, TRATON, and Volvo Group. For TRATON, MAN and Scania are assessed separately. Within the Volvo Group, Renault Trucks and Volvo Trucks are evaluated separately.

2

Announcements of ZE and ICE, R&D and investments

Truck manufacturers in Europe have incorporated ZE investments into their strategic frameworks, although the allocation of investments between ZE and ICE varies by company. This chapter focuses on the announcements of research and development (R&D) expenditures and investments in ZE, ICE, and other activities to gain insight into the strategic direction of the companies.

2.1 Introduction

This chapter analyses media announcements from the five truck companies and other sources, focusing on R&D expenditures and investments in ZE and ICE technologies, considering the period from 2019 to 2025.

Companies with a high need for innovation use two financial flows to accelerate innovation: R&D expenditures and investments. R&D expenditures are published in the Profit & Loss (P&L) account[i], while investments are reported in the Balance Sheet.

2.2 Methodology: media and company-related publications research

Media and company-related publications that report on R&D and investment activities were collected for the following manufacturers: DAF Trucks, Daimler Truck, Iveco, TRATON (with MAN Truck & Bus and Scania analysed separately), and the Volvo Group (with Renault Trucks and Volvo Trucks assessed separately). Investments include expenditures for property, plant, and equipment (PPE), as well as the acquisition of intangible assets, subsidiaries, and shareholdings in other companies.

The analysis concentrated on two categories of R&D expenditures and investments. The first relates to ZE technologies, including battery-electric, hydrogen-based propulsion systems, as well as charging networks. The second category encompasses investments in ICE technologies. The report focuses on trucks; however, during the research, it became clear that separate information about trucks, buses, and other vehicles is often missing in announcements and financial statements.

The examined timeframe spans from 2019 to 2025, including both realised and upcoming investments announced in 2025 that are expected to materialise in the years to come. The cut-off date for investments is November 1, 2025. The primary geographical focus is on R&D and investment activities in the EU, the European Economic Area (EEA) and the UK. However, projects

[i] R&D expenditures are in the P&L account. These consist of Primary R&D costs, minus capitalised development costs, plus amortised development costs. R&D costs are capitalised when applied to longer-term projects and amortised over a period of 3-15 years. For example, in 2024, TRATON capitalised 40% of its primary R&D costs (TRATON Annual Report 2024, page 37). This report focuses on R&D expenditure at the P&L level.

outside this region were also included when considered strategically crucial within the analysed period, or when no information was available on the geographical focus of an announcement.

The data collection process combined analysis of online and open-source publications with the review of company announcements, including annual and sustainability reports, and press releases. The media review covered both general and sector-specific outlets. Annual reports served as a key data source, providing the framework for systematically linking investment activities with their corresponding timeframes, locations, and financial values. The research identified several data gaps, with some investment details remaining unclear.

The initial review of annual reports guided the subsequent targeted media search, ensuring consistency between official disclosures and publicly reported data. This methodological approach was chosen to obtain a balanced and comprehensive overview of the companies' strategic investment patterns. The identified investments were often reported in different currencies (Euro, Swedish Crown, and US Dollar). To ensure comparability of data in this research, all values were converted to Euros using average conversion rates for the respective years.

This chapter provides an overview of the most relevant investments, situating them within the broader investment strategy of the focus companies. The analysis is presented in chronological order, from 2019 to 2025, to provide a clear understanding of how the investment strategies evolved over time.

2.3 Analysis of the companies' investments

This section of the report examines the investments made by European truck manufacturers in both ZE and ICE technologies, based on announcements from the five holding companies. The analysis aims to provide the most accurate and comprehensive overview of these investment activities. However, potential limitations may arise due to the varying and often non-transparent methods of investment reporting adopted by individual companies.

2.3.1 Paccar - DAF Trucks

DAF Trucks' capital and R&D spending generally show an increasing trend over the years.

In Europe, the largest investment in ZE technologies amounts to €738 million, allocated to a new electric truck assembly plant in the Netherlands, which was opened in 2023.[7] Other investments in ZE in Europe are incorporated in the R&D expenditure, but no financial details are available.

In 2023, DAF Trucks said it was working on hydrogen combustion engines in the Green Transport Delta-Hydrogen project in collaboration with Dutch companies and knowledge institutes.[8] No financial details are given for such initiatives.

In 2024, investments in ICE technology are documented, revealing factory expansions in Mexico[9]. In Germany, a distribution centre was established, but it was not specifically designed for ICE or ZE, and no detailed investment values were provided.[10] [11]

Paccar is part of Amplify Cell Technologies, a US battery joint venture founded in 2024, together with Accelera by Cummins and Daimler Truck North America. As analysed in the Daimler section, each 30% joint venture partner (Paccar is one of them) plans to invest €695 million (see section 2.3.2), which is confirmed by Paccar.[12] [13] In 2024, Paccar announced that it would contribute €192 million (US$207.6 million) to construct a facility.[14] The joint venture has built the facility, but is now pushing back the start of battery cell production from 2027 to 2028.[15] As the €192 million is part of the €695 million commitment, the latter is taken as the leading figure, as further investments are expected to be made in 2025.

In 2025, DAF Trucks signed a memorandum of understanding with TotalEnergies about electric truck charging.[16]

2.3.2 Daimler Truck

In 2019, Daimler Truck set a target to achieve carbon-neutral driving operations for new trucks and buses in the European, Japanese, and North American markets by 2039.[17]

In 2020, Daimler announced a €70 billion ($85 billion) investment plan for the period 2021–2025, indicating that the majority of this expenditure would support the company's transition toward electrification and digitalisation.[18] The analysis indicates that the €70 billion figure pertains to Daimler's operations prior to the 2021 corporate split into Daimler Truck and Mercedes-Benz Group. Because Daimler oversaw both HDV and non-HDV divisions in 2020, a segment adjuster was applied to estimate the portion of the investment attributable to the truck segment.

For this adjuster, two ratios could be applied:

- Given that the truck division accounted for 22% of the company's total revenue that year, the announced amount could be adjusted accordingly.
- In 2020, the truck division accounted for 17.8% of the total Mercedes-Benz Group R&D expenditure, 13.9% of the investments in property, plant, and equipment (PPE), and 16.2% of R&D plus investments.

As the analysis focuses on R&D and Investments, the logical choice is to apply a 16.2% rate. This results in an estimated €11.3 billion being relevant to the truck segment of Daimler.

Following the investment plan announced in 2020, Daimler entered into two joint ventures in Europe in 2021. It established a 50/50 joint venture with the Volvo Group, called cellcentric, based in Germany, to develop hydrogen fuel cell systems. For this, Volvo Group acquired a 50% stake in the existing Daimler Truck Cell GmbH & Co.KG for approximately €600 million.[19] [20] This value was later raised to €639 million.[21] This indicates that the joint venture was valued at €1,278 million. This €1,278 million is also the best estimate of how much Daimler Truck had already invested in the activity.[ii] The value of what Daimler Truck had invested after the 50% sale to Volvo Group is therefore €639 million.

Following the completion of this joint venture deal, both parties invested in 2021 an additional €122 million, with Daimler Truck contributing €66 million.[22] During 2022 and 2023, Daimler Truck and Volvo Group made €170 million and €140 million capital contributions to cellcentric, or €85 million and €70 million per company.[23]

The company also invested in Milence, a joint venture with TRATON and Volvo Group, to build charging stations for BETs across Europe. The capital contribution was €167 million for each of the three partners.[24] Milence aims to have 1,700 public charging points across Europe by 2027.[25]

In 2021, Daimler Truck also announced an agreement with TotalEnergies for a hydrogen charging network ecosystem in the EU, although it did not provide financial details.[26] A similar agreement was announced with BP in the UK to develop a network of hydrogen filling stations and hydrogen trucks,[27] again without financial details. Additionally, fuel cell refuelling infrastructure projects with Shell were mentioned, but without providing financial details.

In 2021, Daimler Truck announced an extension of its global partnership with Contemporary Amperex Technology Co. Limited (CATL), the world's leading battery producer for vehicles, headquartered in China, to jointly design next-generation battery cells and packs, as well as to supply batteries from 2024 to beyond 2030.[28]

In 2024, Daimler Truck entered into a battery joint venture — the US-based Amplify Cell Technologies — with Accelera by Cummins and Paccar. The three companies have committed a combined US$2 to US$3 billion in this joint venture, and each owns 30% (EVE Energy, the

[ii] The preferred route would have been that Daimler Truck had published its R&D expenditures and investments in the activity. However, this did not occur.

technology partner, owns 10%).[29] Taking the average of the two numbers and applying the 30% stake, Daimler Truck plans to invest €695 million. In 2025, Daimler Truck mentions in its Annual Report 2024 that all parties contributed €647 million, with €194 million by Daimler Truck.[30] As the €194 million is part of the €695 million commitment, the latter is taken as the leading figure, as further investments are expected to be made in 2025.

Daimler Truck plans to offer a solution for planning, booking and reservation for semi-public charging networks, operating under the TruckCharge brand in Europe, which was set to launch in the third quarter of 2025. The network is expected to include more than 3,000 fast-charging points by 2030, but no financial details are given. TruckCharge should *"complement the existing public charging network, operated by Milence, among others"*, according to Daimler Truck.[31]

The analysis reveals that in 2025, Daimler introduced a series of austerity measures, which imposed limits on investments in battery-electric trucks. This cost-reduction strategy could influence the company's future allocations toward ZE technologies.[32]

An interesting point regarding the lack of detail on ZE investments in new plants is that the new electric HD truck models will be manufactured on the existing assembly lines for the conventional Wörth A-series. BETs will be produced in parallel and flexibly alongside diesel-powered models.[33]

2.3.3 Iveco Group

In 2019, IVECO partnered with the US-based Nikola to establish a joint venture in Europe, Nikola Iveco Europe.[34] In 2020, Iveco's then-parent, CNH Industrial, invested €220 million in the alliance—equating to a 6.6% stake in Nikola—to develop fuel-cell and battery-electric trucks.[35]

Nikola planned to become the leader in battery-electric trucks in the USA and globally, but encountered financial troubles in 2023 due to dwindling market demand and fraud investigations.[36] That same year, Iveco took full control of the European joint venture, renamed as EVCO (Electric Vehicles Company).[37] [38] According to company announcements, Iveco covered the expenditure partially in cash (US$35 million or €32 million) and partially in Nikola shares (20 million shares).[39] Another source suggested a payment of €100 million to acquire the 50% stake in the joint venture.[40] On 8 May 2023, the value of the 20 million Nikola shares was approximately US$23 million; thus, the total value of taking over the other 50% of the European joint venture was approximately US$58 million or €54 million.

The companies divided their commercial focus geographically, with Iveco concentrating on developing and commercialising BET and fuel cell trucks in Europe, while Nikola focused its operations on North America. However, the two companies continued to share certain common technologies, and Iveco remained a key supplier to Nikola.[41] Nikola filed for bankruptcy in early 2025.[42]

In 2023, Iveco accelerated its global sustainability investment strategy. The most prominent activity was the company's reported single largest specific investment of €1 billion to renew a portfolio covering the development and production of diesel, gas, and electric versions in trucks (heavy- and light-duty).[43] [44]The details of this investment remain unclear, and the share of resources allocated to ZE technology development is unspecified.

Also in 2023, the company invested €5.1 million to reduce its environmental impact.[45] These reported investments lack information on specific activities. That same year, Iveco also invested €4.4 million to retrofit existing factories and assembly plants globally.[46] No other investments in the truck segment were identified.[47] [48]

The outlook shows that Iveco has committed to future investments in ZE technologies. In October 2025, Iveco announced a joint venture in Europe with DLL (De Lage Landen, a financial institution) focused on rental solutions for ZE vehicles.[49] The materialisation of this and other future investments needs to be monitored in light of the 2025 acquisition of Iveco's vehicle business by Tata Motors (India).[50]

One expert noted that Iveco has begun to fall behind the competition in electrification due to the failure of its cooperation with Nikola, related to mismanagement at Nikola. Subsequently, Iveco was forced to focus temporarily on LNG solutions as a transition technology, before it was able to launch new initiatives and models.[51]

2.3.4 TRATON Group

In 2019[iii], TRATON committed to investing over €1 billion in e-mobility and €1 billion in digitalisation initiatives globally by 2025. The €1 billion in e-mobility is for MAN, Scania and Volkswagen Bus. They would be developing a common electric powertrain.[52] [53] One year later, TRATON announced that it planned to invest €1.6 billion in electric mobility over the period from 2021 to 2025, stating that this would double the budget.[54]

In 2022, TRATON increased its previously declared global e-mobility R&D budget from €1.6 billion to €2.6 billion, indicating a stronger strategic focus on ZE technology development and a growing prioritisation of electrification within its portfolio.[55] This means that the total budget until 2025 is €2.6 billion.

In 2025, TRATON announced plans to further accelerate investments in ZE technologies. The company has planned to invest €2.1 billion from 2025 to 2029 in electric mobility, focusing on the development of electric vehicles, including the necessary components, vehicle integration, and batteries.[56] This is likely part of the larger €5.4 billion announcement of investments in 'decarbonization activities' between 2025 and 2029.[57]

In 2021, the company entered into a partnership with Daimler Truck and Volvo Group to establish a Europe-wide network of truck charging stations, known as Milence, with a total investment of €167 million for each partner[58] (the joint investment is €500 million[59]). Between 2022 and 2024, the company made periodic financial commitments to the Milence joint venture.[60] [61]After these payments, the remaining outstanding obligation in 2024 is €85 million.[62][iv]

No substantial investments in ICE technologies within the European market were identified for the period from 2019 to 2025, although the company continues to invest but without disclosing amounts. In the Annual Report 2024 the company says that it *"is developing advanced combustion technologies to achieve better fuel consumption and lower emissions"*.[63] The acquisition of Navistar (USA) for €3.1 billion (US$3.7 billion) was a significant one, but from an e-mobility perspective, it was crucial for Navistar to leverage TRATON's expertise.

2.3.5 TRATON - MAN Truck & Bus

In 2021, MAN allocated €6.3 million towards decarbonising its European operations.[64] In 2022, the company committed €20 million to further advance its decarbonisation efforts.[65] These efforts focus on reducing emissions from factories, rather than e-mobility in trucks. No division of investments in ZE or ICE factories is given. In 2022, MAN invested €130 million in a combined ZE and ICE production facility in Poland.[66] Again, no division between ZE and ICE was mentioned.

In 2022, MAN announced plans to build a new battery production facility at its Nuremberg factory, with an investment of €100 million. The Bavarian State Government supplemented this with €30 million in R&D funding for battery assembly between 2023 and 2027.[67] [68] In 2025, MAN announced that it would invest a further €150 million in battery production.[69] [70] [71]

[iii] In 2018, one year earlier, TRATON and Hino Motors, a Toyota Group company, announced a strategic partnership in e-mobility and in procurement. No financial details.

[iv] It is not clear whether this charging investment is part of the e-mobility budget of €2.6 billion. In the calculation in Chapter 3, the Milence investments are assumed to be a separate amount.

In 2023, MAN continued investing in both the ZE and ICE segments. The company allocated €170 million to establish a new diesel truck manufacturing plant in Germany (ICE)[72]. Regarding the large expansion in Poland (see above), MAN updated to investment value to €200 million, including a three-shift system for both electric and conventional trucks.[73]

In 2025, the company also announced that it would invest €250 million in its last diesel engine, with €220 million for a plant in Nuremburg and €30 million for the associated crankshaft production in Salzgitter.[74]

Prior to the series production of the MAN eTruck in June 2025, MAN invested €400 million in R&D funding. This R&D effort was necessary to offer the conventional truck with a battery drive as well.[75] [76]

In the year 2024, a joint venture with E.ON to develop charging infrastructure across Europe was announced.[77] [78] [79]This investment lacks detailed financial disclosures.

Overall, all identified investments are located within Europe, with Germany and Poland representing the primary investment hubs. A noticeable shift towards ZE investment has been observed since 2021, coinciding with the TRATON Group's acquisition of the remaining minority stake in the MAN Group.

2.3.6 TRATON - Scania

In 2018, Scania took a loan to invest €165 million in a new foundry to be built in 2019 to cast components for trucks at its facility in Sweden.[80] It is not specified whether the foundry is working for ICE or ZE models; however, it will be more energy-efficient than the old foundry and will utilise renewable energy.

In 2019, Scania invested €10 million in Northvolt to develop and produce battery cells for trucks.[81] [82]

In 2020, Scania planned to invest €100 million in a battery assembly plant in Sweden to assemble battery cells from Northvolt.[83] Operations started in 2023.[84] [85]

In 2024, Northvolt filed for bankruptcy in the US.[86] Scania announced it would lend Northvolt €90.6 million ($100 million).[87] In 2025, Northvolt also filed for bankruptcy in its home country, Sweden. Scania acquired Northvolt Systems Industrial, the division specialising in battery systems for heavy-duty, off-road, and industrial applications. The deal included production facilities and R&D centres in Poland and Sweden.[88] According to the media, Scania paid approximately €9 million (less than SEK 100 million) for this acquisition.[89]

In 2024, Scania established Erinion, a subsidiary to provide depot and destination charging. The company is specialised in private and semi-public charging solutions. The plan is to have 40,000 charging points at customer locations across Europe by 2030.[90] [91] However, no financial details were disclosed.

In 2024 and 2025, Scania announced substantial investments outside Europe. To strengthen its Brazilian business, Scania will invest an additional €348 million (equivalent to R$2 billion/US$370 million). The priority is on trucks powered by gas, biodiesel, and biomethane, as well as electric buses. The move to BETs is under discussion due to the lack of a good charging network.[92] [93]

From 2025 to 2028, the company plans to allocate €2 billion to establish a production facility in China. The factory will operate on renewable energy and produce for the Chinese market, as well

as select markets in Asia and beyond.[94] [95] The announcement does not specify the distribution between ICE and ZE.

2.3.7 Volvo Group - Volvo Trucks

In 2019, Volvo Trucks announced an investment of €151 million (SEK1.6 billion) to upgrade a facility in Sweden to increase production flexibility for future products and materials in its foundry operations.[96] No division between ICE and ZE has been given.

In 2020, Volvo Group announced a 50/50 joint venture with Daimler Truck, cellcentric, to develop hydrogen fuel cell systems for heavy-duty vehicle applications. Volvo paid €600 million to acquire the 50% stake.[97] As indicated in the Daimler Truck section, this was later raised to €639 million plus an additional investment of €66 million (section 2.3.2). In 2021, the Volvo Group mentions only a figure of SEK 6.5 billion, or approximately €641 million.[98] In 2021, Volvo Group announced the opening of a dedicated hydrogen fuel cell test lab (no financial details). Both cellcentric and the test lab form a key part of the group's ambition to be 100% fossil-free by 2040.[99] [100]

In 2021, Volvo established Volvo Energy, a dedicated business unit designed to accelerate the company's energy transition and circular battery value chain, as well as the customer offer for charging infrastructure.[101] In 2021, a shareholder's contribution of €20 million (SEK200 million) was made by Volvo Group in the new entity.[102]

In 2022, Volvo Group formed Milence, a joint venture with Daimler Truck and TRATON, to develop charging infrastructure across Europe. Each company committed to invest €167 million within a few years of establishing the joint venture.[103]

In 2023, Volvo Group formed Flexis, a joint partnership with the Renault Group to develop battery-electric solutions for light commercial vehicles (vans), backed by a €300 million investment.[104] [105] This joint venture is primarily focused on vans and urban transportation, rather than trucks.

In 2024, the Volvo Group completed the acquisition of Proterra's battery business for €194 million (approximately US$210 million), which includes a development centre for battery modules and packs, as well as an assembly factory in the USA.[106] [107]

In 2024, Volvo Group's Construction Equipment segment invested in establishing new production facilities in Sweden and South Korea to expand its electric vehicle manufacturing capacity (€ 38 million/US$ 40.5 million). The largest part was for articulated haulers' production facilities in Sweden, and a minor part (€7 million) was in South Korea for a new battery pack production facility for the benefit of the Volvo Group, so possibly also for trucks.[108] The news about the construction of a new HD truck plant in Mexico to supplement the US production[109] does not contain data on a division between ICE and ZE.

In 2025, Volvo Group acquired a battery cell laboratory from NOVO Energy AB.[110] No final detail was given.

2.3.8 Volvo Group - Renault Trucks

In 2019, the company also announced an investment of €33 million in an R&D centre in France.[111] The centre, focused explicitly on ZE innovations, specifically battery upgrades became operational in 2023.[112]

In 2020, Renault Trucks announced it would invest an additional €150 million in electric mobility over a four-year period. In 2020, Renault Trucks started series production in the Blainville-sur-Orne plant in France.[113]

By 2024, Renault Trucks allocated €70 million to upgrading a production line in France to support increased e-truck production.[114]

3

Key financial data

This chapter presents key financial data from the companies' financial statements, with the objective of investigating the extent to which ZE R&D expenditures and Investments in assets are significant in the context of total R&D and investments, revenues, net profit, and the return to shareholders.

3.1 Introduction and methodology

This chapter collects the relevant financial data from the financial statements in various annual reports, enabling comparison with the Chapter 2 data about the relative size of the companies' ZE R&D and investments. Key financial data are:

- Revenues
- Investments
- R&D expenditures[v]
- EU Taxonomy data
- Net profits
- Dividends and share buybacks

The reason for using only the holding companies' annual reports is that the annual reports of subsidiaries, such as DAF Trucks, do not contain consolidated information. The holding companies' annual reports contain consolidated financial statements, which bring together the profit & loss accounts, balance sheets, and cash flow statements of all subsidiaries.

Subsequently, the specific data on revenues, R&D, investments, EU Taxonomy, net profits, dividends, and share buybacks for each company have been collected and values have been converted into Euros.

3.2 EU Taxonomy

The EU Taxonomy is designed to enhance transparency regarding the sustainable activities (revenues, operating expenses, investments) of companies, facilitate comparison among companies, and promote discipline within companies to promote sustainability.

3.2.1 Eligible and aligned economic activities

Eligible economic activities

The EU Taxonomy is a classification system for sustainable economic activities. Economic activities that fall under the EU Taxonomy, and are therefore taxonomy-eligible, are those described in the delegated acts and for which technical screening criteria are available for one of the six environmental objectives listed below.

[v] R&D expenditures are in the P&L account. These consist of Primary R&D costs, minus capitalised development costs, plus amortised development costs. R&D costs are capitalised when applied to longer-term projects and amortised over a period of 3-15 years. For example, in 2024, TRATON capitalised 40% of its primary R&D costs (TRATON Annual Report 2024, page 37). This report focuses on R&D expenditure at the P&L level.

Vehicle manufacturers label virtually all of their investment and turnover as eligible.[115] This aligns with the Commission FAQ, which explicitly states:

"*Eligibility does not depend on compliance with the technical screening criteria but is assessed solely on the basis of the description of the activity. The qualifiers, such as 'low carbon' vehicles or 'low carbon' vessels for the purpose of Section 3.3 in the Annex I to the Climate Delegated Act ('manufacture of low carbon technologies for transport'), which are not defined in a clear way, should only be taken into account for the purposes of determining the compliance with the technical screening criteria and are therefore not relevant for the reporting on eligibility. For example,* ***a car manufacturer would be able to report as eligible all their car manufacturing activities, including those of combustion engine cars.***"[116]

Eligible and aligned economic activities

Economic activities are deemed to be environmentally sustainable, and thus taxonomy-aligned, if they make a "substantial contribution" to the achievement of at least one of six environmental objectives, do not significantly harm (DNSH) any other objectives, meet the relevant thresholds or benchmarks referred to as "technical screening criteria" (for example, emissions intensity limits, or efficiency thresholds), and are aligned with certain minimum safeguards on human rights and social and labour standards.

The six environmental objectives are:

- Climate change mitigation
- Climate change adaptation
- Sustainable use and protection of water and marine resources
- Transition to a circular economy
- Pollution prevention and control
- Protection and restoration of biodiversity and ecosystems

Non-eligible activities

All other economic activities not listed in the Taxonomy are considered taxonomy-non-eligible. This does not mean that all such activities are unsustainable or harmful per se; it only means that the EU Taxonomy has not (yet) defined technical screening criteria for them and therefore does not formally recognise their contribution to the six environmental objectives.

Relevance for the current report

In terms of Taxonomy reporting, this classification applies to revenues, operating expenditures (OpEx), and capital expenditures (CapEx).

The economic activities of truck and bus manufacturers are analysed in terms of their business model as manufacturers of commercial vehicles. They fall under code C.29.1 (Manufacture of motor vehicles and motor vehicle engines) of the EU's Statistical Classification of Economic Activities (NACE). In terms of the "climate change mitigation" environmental objective pursuant to Annex I to Regulation 2020/852, this means that the economic activities related to the manufacture, repair, maintenance, retrofitting, or upgrade of vehicles are allocated to economic activity 3.3 "Manufacture of low-carbon technologies for transport." The allocation of economic activity is independent of the drive technology of the underlying vehicle.

The activities are allocated under "climate change mitigation".

Specifically, to be classified as Taxonomy-aligned, the production of heavy-duty vehicles must meet the following technical screening criteria:

- **Vehicles of categories N2 and N3, and N1 classified as HDV**, not dedicated to transporting fossil fuels with a technically permissible maximum **laden mass not exceeding 7.5 tonnes** that

are ‘zero-emission heavy-duty vehicles’ as defined in Article 3, point (11), of Regulation (EU) 2019/1242 of the European Parliament and of the Council.

- **Vehicles of categories N2 and N3** not dedicated to transporting fossil fuels with a technically permissible maximum **laden mass exceeding 7.5 tonnes** that are zero-emission heavy-duty vehicles’, as defined in Article 3, point (11), of Regulation (EU) 2019/1242 or ‘low-emission heavy-duty vehicles’ as defined in Article 3, point (12) of that Regulation.[117]

Regulation (EU) 2019/1242 includes the following definitions of zero- and low-emission vehicles:

- **ZE HDV** means a HDV without an ICE, or with an ICE engine that emits less than 1g CO_2/kWh as determined in accordance with Regulation (EC) No 595/2009 and its implementing measures, or which emits less than 1g CO_2/km as determined in accordance with Regulation (EC) No 715/2007 of the European Parliament and of the Council (16) and its implementing measures;[118]
- **Low-emission HDV** means an HDV, other than a ZE HDV, with specific CO_2 emissions of less than half of the reference CO_2 emissions of all vehicles in the vehicle sub-group to which the HDV belongs, as determined in accordance with point 2.3.3 of Annex I.[119]

3.2.2 Conclusion on the relevance of the EU Taxonomy in the current report

Because of the way the EU has clarified the law, car and truck manufacturers must treat almost all of their production as ‘Taxonomy-eligible’ simply because they make vehicles. Whether the vehicles are actually low-carbon only matters later, in a separate ‘alignment’ reporting. Essentially, this practice enables companies to demonstrate a very high percentage of “eligible” CapEx and OpEx that could be made climate-friendly.

Whether these CapEx and OpEx are aligned does not provide the desired information for the current report, as low-emission vehicles are also included in the ‘aligned’ category.

Furthermore, the EU Taxonomy does not consider targets on the level of alignment.

3.3 Results of financial data analysis - the absolute figures

This section contains a discussion of the reported key financial data of the five companies. In section 3.4, the focus is on the relative values.

The key financial data have been collected in all relevant annual reports of the five holding companies.[120]

3.3.1 Revenues (global)

In 2024, the combined revenues of the five companies totalled €198 billion. Daimler Truck, Volvo Group, and TRATON each generated revenues of around €50 billion, while the other two companies were significantly smaller.

Table 2 Global revenues of the European truck manufacturers

€ million	2019	2020	2021	2022	2023	2024
Paccar (DAF Trucks)	22,878	16,400	19,934	24,607	32,495	31,113
Daimler Truck	44,429	34,671	39,764	50,945	55,890	54,077
Iveco Group	11,948	10,411	12,651	14,357	15,978	15,289
TRATON	26,901	22,580	30,620	40,335	46,872	47,473
Volvo Group	40,791	32,264	36,708	44,542	48,192	50,048
Total	**146,947**	**116,326**	**139,677**	**174,786**	**199,427**	**197,999**

Source: Profundo, based on the annual reports of the companies. The data of Paccar and Volvo Group have been recalculated into Euros based on average exchange rates for each year.

3.3.2 European revenues

In 2024, only Iveco generated most of its revenues in Europe (63.5%). For TRATON and Volvo Group, Europe remains their main market (48.9% and 41% of revenues respectively), though more than half of their revenues come from other regions. Paccar and Daimler Truck, however, generate most of their revenues in the US, with only 14.8% and 27.3% in Europe, respectively.

Table 3 European revenues of the European truck manufacturers (2024)

€ million	2024	As % of total revenues
Paccar (DAF Trucks)	4,619	14.8%
Daimler Truck	14,789	27.3%
Iveco Group	9,705	63.5%
TRATON	23,204	48.9%
Volvo Group	20,519	41.0%
Total	**72,837**	**36.8%**

Source: Profundo, based on the annual reports of the companies. The data of Paccar and Volvo Group have been recalculated into Euros based on average exchange rates for each year.

3.3.3 R&D expenditure and Investments (Capital Expenditures)

Companies continually innovate and expand their product ranges. Important proxies for this are R&D expenditures and the size of investments (or capital expenditures).

In the Profit & Loss account, the R&D expenditure consists of the annual R&D expenditure, minus the part that is capitalised (which is added to the balance sheet), and plus the part that is amortised from the balance sheet. From 2019 to 2024, the Volvo Group has had the highest R&D expenditure, €13.8 billion in total (globally). Paccar (DAF Trucks) is lagging far behind with €1.9 billion.

In addition to R&D expenditures, companies make various investments to expand capacity or acquire knowledge, including investments in Property, Plant and Equipment (PPE), investments in intangibles, and investments in subsidiaries or acquisitions. Investments in PPE and intangibles are depreciated over the period during which they can be used by the company.

The Volvo Group had the highest investments in the period 2019–2024 (€12.8 billion), followed by Daimler Truck (€9.9 billion), whereas Iveco invested the least (€4.5 billion).

As ZE and ICE innovation and expansion are funded by annual R&D expenses and investments, the sum of these two key financial data points contributes to valuable insights. The Volvo Group has the highest sum for the period 2019–2024, at €26.7 billion, followed by Daimler Truck (€18.8 billion) and TRATON (€17.2 billion).

Table 4 Global R&D expenditures and Investments (Capital Expenditures)

€ million	2019	2020	2021	2022	2023	2024	2019-2024
Paccar (DAF Trucks)	2,054	1,674	1,658	1,560	1,549	2,032	10,528
Daimler Truck	NA	2,831	2,956	3,130	5,536	4,334	18,787
Iveco Group	1,052	971	1,088	1,280	1,593	1,556	7,540
TRATON	2,141	2,171	2,504	3,113	3,489	3,812	17,230
Volvo Group	3,826	3,256	4,793	4,760	5,214	4,836	26,684
Total	9,073	10,903	12,999	13,843	17,380	16,570	80,769

Source: Profundo, based on the annual reports of the companies. The data of Paccar and Volvo Group have been recalculated into Euros based on average exchange rates for each year.

3.3.4 EU Taxonomy: Low carbon and ZE investments

Until 2022, European companies did not report on the EU Taxonomy. From 2023 onwards, all companies reported except Paccar, a US company with no reporting requirements.

Daimler Truck, Iveco and TRATON reported between €784 million and €985 million in EU Taxonomy-aligned investments (Table 5). Despite its high level of R&D and Investments, Volvo Group reported only €240 million.

Table 5 Global Low and Zero-emission investments based on EU Taxonomy

€ million	2022	2023	2024	2019-2024
Paccar (DAF Trucks)	NA	NA	NA	0
Daimler Truck	191	255	359	805
Iveco Group	239	339	206	784
TRATON	480	505	0	985
Volvo Group	240	0	0	240
Average (weighted)	**1,150**	**1,099**	**565**	**2,814**

Source: Profundo, based on the annual reports of the companies. The data of Paccar and Volvo Group have been recalculated into Euros based on average exchange rates for each year.

3.3.5 Profit

Operating profit is the profit number after operating expenses have been deducted from revenues. Net profit is operating profit once interest costs and corporate tax are deducted. After deducting the profit share of minority shareholders in certain subsidiaries, the remaining amount is the net profit available to shareholders which can be distributed through dividends and share buybacks.

Volvo Group made the highest total net profit in the 2019–2024 period, €20.7 billion, followed by Paccar (€15.7 billion; see Table 6). Iveco Group had the lowest net profit in the six years.

Table 6 Global net profit of the European truck manufacturers

€ million	2019	2020	2021	2022	2023	2024	2019-2024
Paccar (DAF Trucks)	2,134	1,137	1,569	2,714	4,256	3,847	15,656
Daimler Truck	NA	-143	2,347	2,665	3,775	2,900	11,544
Iveco Group	84	-408	52	147	218	349	442
TRATON	1,518	-101	457	1,141	2,451	2,804	8,270
Volvo Group	3,386	1,842	3,233	3,078	4,344	4,787	20,670
Total	**7,122**	**2,326**	**7,659**	**9,745**	**15,044**	**14,687**	**56,583**

Source: Profundo, based on the annual reports of the companies. The data for Paccar and the Volvo Group have been recalculated into Euros based on average exchange rates for each year.

3.3.6 Dividends and Share Buybacks

The Volvo Group paid the largest amount to shareholders in dividends and share buybacks. Iveco Group paid shareholders the least, in line with its low net profit. During the period 2019–2024, the five truck manufacturers paid shareholders €37.1 billion (Table 7).

Table 7 Global dividends and share buybacks by the European truck manufacturers

€ million	2019	2020	2021	2022	2023	2024	2019-2024
Paccar (DAF Trucks)	1,116	1,123	602	907	1,409	2,120	7,277
Daimler Truck	NA	204	7,290	75	1,724	2,506	11,799
Iveco Group	1	0	0	1	55	151	208
TRATON	0	447	725	250	350	750	2,522
Volvo Group	1,920	0	4,911	2,484	2,482	3,477	15,274
Total	**3,037**	**1,774**	**13,528**	**3,717**	**6,020**	**9,004**	**37,080**

Source: Profundo, based on the annual reports of the companies. The data of Paccar and Volvo Group have been recalculated into Euros based on average exchange rates for each year.

3.4 The results of the financial data analysis - the relative numbers

3.4.1 R&D expenditures plus Investments as a percentage of revenues

R&D-to-Revenue ratio fluctuated from 3.5% to 5.1% between 2019 and 2024. From 2019 to 2024, Volvo Group increased its R&D spending relative to revenues, while the ratio remained stable for other truckmakers. Investment/revenue ratio remained stable between 4.2% and 5.3%. Between 2019 and 2024, Paccar, Iveco, and the Volvo Group demonstrated the highest relative investment levels, all exceeding 5% of revenues.[121]

The ratio R&D + Investments-to-Revenue combines the relative R&D and relative Investments compared to revenues. The Volvo Group had the highest ratio for the sum of spending between 2019 and 2024 (10.6%).

Table 8 R&D expenditures and Investments as % of revenue

%	2019	2020	2021	2022	2023	2024	2019-2024
Paccar (DAF Trucks)	9.0%	10.2%	8.3%	6.3%	4.8%	6.5%	7.1%
Daimler Truck	NA	8.2%	7.4%	6.1%	9.9%	8.0%	6.7%
Iveco Group	8.8%	9.3%	8.6%	8.9%	10.0%	10.2%	9.4%
TRATON	8.0%	9.6%	8.2%	7.7%	7.4%	8.0%	8.0%
Volvo Group	9.4%	10.1%	13.1%	10.7%	10.8%	9.7%	10.6%
Average (weighted)	**8.8%**	**9.4%**	**9.3%**	**7.9%**	**8.7%**	**8.4%**	**8.3%**

Source: Profundo, based on the annual reports of the companies.

3.4.2 Low and ZE emission investments as a percentage of revenues (EU Taxonomy)

Taxonomy-aligned investments are very low, usually making up only 1% or 2% of revenues when they are reported. Both TRATON and Volvo Group did not report any Taxonomy-aligned investments in 2024 (Table 9). As mentioned in section 3.2, the information value of the EU Taxonomy for ZE investments is relatively low.

Table 9 Low and ZE emission investments as % of revenue

%	2022	2023	2024
Paccar (DAF Trucks)	NA	NA	NA
Daimler Truck	0.4%	0.5%	0.7%
Iveco Group	1.7%	2.1%	1.3%
TRATON	1.2%	1.1%	0.0%
Volvo Group	0.5%	0.0%	0.0%
Average (weighted)	**0.8%**	**0.7%**	**0.3%**

Source: Profundo, based on the annual reports of the companies.

3.4.3 Profit as a percentage of revenues

Paccar had the highest net profit margin in most years from 2019 to 2024, followed by the Volvo Group. Iveco has had the lowest net profit margin (Table 10).

Table 10 Net profit as % of revenue (net profit margin)

%	2019	2020	2021	2022	2023	2024	2019-2024
Paccar (DAF Trucks)	9.3%	6.9%	7.9%	11.0%	13.1%	12.4%	10.6%
Daimler Truck	NA	-0.4%	5.9%	5.2%	6.8%	5.4%	4.1%
Iveco Group	0.7%	-3.9%	0.4%	1.0%	1.4%	2.3%	0.5%
TRATON	5.6%	-0.4%	1.5%	2.8%	5.2%	5.9%	3.9%
Volvo Group	8.3%	5.7%	8.8%	6.9%	9.0%	9.6%	8.2%
Average (weighted)	**6.9%**	**2.0%**	**5.5%**	**5.6%**	**7.5%**	**7.4%**	**5.8%**

Source: Profundo, based on the annual reports of the companies.

3.4.4 Dividend + Share Buyback as a percentage of net profit

Between 2019 and 2024, the five companies returned two-thirds of their net profit to shareholders through dividends and share buybacks.

Table 11 Dividends and share buybacks as % of net profit

%	2019	2020	2021	2022	2023	2024	2019-2024
Paccar (DAF Trucks)	52%	99%	38%	33%	33%	55%	46%
Daimler Truck	NA	-143%	311%	3%	46%	86%	102%
Iveco Group	1%	0%	0%	1%	25%	43%	47%
TRATON	0%	-443%	159%	22%	14%	27%	30%
Volvo Group	57%	0%	152%	81%	57%	73%	74%
Average (weighted)	**43%**	**76%**	**177%**	**38%**	**40%**	**61%**	**66%**

Source: Profundo, based on the annual reports of the companies.

3.5 Conclusion

Overall, R&D expenditure and Investments have remained stable as a share of revenue, going from 8.8% in 2019 to 8.4% in 2024. Meanwhile, dividends and share buybacks rose from 43% of net profit in 2019 to 61% in 2024. This suggests that truck companies are prioritising net profit and shareholders' returns over R&D and investments, in line with other sectors worldwide. The high level of the average payout ratio to shareholders is not an exception in the global corporate world.[122]

4

Comparison of financial data with media announcements

This chapter compares the key financial data from the annual reports' financial statements with media announcements from the five truck manufacturers and their subsidiaries. This comparison shows the lack of transparency in reporting on ZE and ICE actions by the companies.

4.1 Introduction

This chapter analyses the investments in ZE technologies announced by the researched companies between 2019 and the end of 2025 in relation to their reported key financial data between 2019 and 2025. Practically, this means comparing the R&D expenditure and investment announcements of individual companies with the financial data reported by the companies in their financial statements, such as R&D costs, investments, revenues, net profit, and share buybacks. Interviews with experts will add further data and context.

As the 2025 financial statements data are not available yet, this means that for 2025 company guidance has been applied (as indicated in the annual report of 2024), and otherwise a level equal to 2024.

4.2 Methodology

This research step compares the investment data presented in Chapter 2 with the financial data outlined in Chapter 3 for European truck OEMs over the period 2019 to 2024. The analysis began by calculating the total amounts reported across four categories: Investments, R&D, Investments + R&D, and EU Taxonomy (CapEx), as disclosed in the companies' financial statements or annual reports. Each category was computed both annually and as an aggregated total for the full assessment period.

The next step involved preparing and structuring the investment data from media announcements. Based on the investment information collected in Chapter 2, available amounts were classified into three categories: ZE, ICE, and Other. The classified amounts were then attributed to the relevant years.

Additionally, when investments were announced at a general company level without specifying allocation to the HDV segment, segment-adjusted figures were applied. These adjusters were based on the HDV segment's share of total company R&D + investment level, ensuring that the estimates more accurately reflected investment flows relevant to the truck sector. After adjustments, annual and total amounts were aggregated for each category (ZE, ICE, and Other).

This research step focuses on data at the parent company level. Although investment media announcements in Chapter 2 are presented separately for TRATON (with MAN Truck & Bus and Scania analysed separately), and the Volvo Group (with Renault Trucks and Volvo Trucks assessed separately), corresponding financial data are reported only at the consolidated group level. As a

result, the possibility of directly comparing company-level investment announcements with financial disclosures remains limited.

4.3 Media announcements compared to financial data

Table 12 summarises the announced R&D and investment efforts per company for 2019–2025. The total for all companies of all announcements (ZE, ICE, and other) is €40.4 billion. TRATON and Daimler Truck have the highest absolute level and contribute 77% of all announcements.

The value of all announcements is equal to 42% of the R&D expenditures and investments in the financial statements of the five groups for the period 2019–2025 (compare with Table 4 + a 2025 estimate: see methodology in the section 4.2). Paccar/DAF (14.0%; see Table 1) and Volvo Group (6.7%) provide the lowest transparency through announcements, which is surprising, considering that the Volvo Group generates 41% of its revenues in Europe and is mentioned as being active in ZE efforts (see experts' views in the section 4.5.).

Table 12 Compiled announcements, 'All' and 'ZE' (2019–2025)*

€ million	All announcements**	ZE announcements**
Paccar (DAF Trucks)	1,627	1,496
Daimler Truck	13,985	13,985
Iveco Group	5,435	1,174
TRATON	17,238	4,867
Volvo Group	2,119	1,392
Total	**40,404**	**22,914**

Source: Profundo, based on company websites, annual reports, truck magazines and specialised websites, and other literature. The list only includes announcements with values; * double-counting has been avoided as much as possible; however, many companies remain non-transparent in various media releases. All companies refused to cooperate in this project; **) including releases in 2025, until the moment of working on this project (end of 2025).

4.4 Comparison of financial data and announcements per company

This section presents the results of comparing the financial data with the announced investments.

4.4.1 Paccar - DAF Trucks

In 2023 and 2024, the identified investments at Paccar (ZE, ICE, and others) accounted for 48% and 44%, respectively, of the total Investments and R&D expenditures reported in its financial statements.

Throughout the analysed period, Paccar/DAF provided very limited transparency about the type of R&D and investments the group undertook, as well as the proportion allocated to ZE. This occurred during a period when the company had the highest average net profit margin from 2019 to 2024.

4.4.2 Daimler Truck

From 2019 to 2025, Daimler Truck only communicated on its investments related to ZE technologies.

The value of these ZE announcements is equal to 60.5% of the total R&D and investments in the financial statements during this period (Table 1). However, a large part of the value of announced ZE investments and plans is based on an assessment by Profundo of Daimler Truck's share in a large announcement by Mercedes-Benz, when Daimler Truck was still part of that group.

Meanwhile, Daimler Truck paid the highest percentage (102%; Table 11) of its net profit to shareholders between 2019 and 2024.

4.4.3 Iveco

Between 2019 and 2025, identified announcements accounted for 59.7% (Table 12 compared to Table 4) of Iveco's total reported R&D expenditures and Investments.

Despite its relatively low profit margin, Iveco spent above-average funds on R&D and investments (9.4% from 2019 to 2024, compared to the average of 8.3% for all OEMs; Table 8).

Notwithstanding its relatively low profitability, the company was generous to its shareholders, transferring 47% of its profits from 2019 to 2024 (Table 11).

4.4.4 TRATON

The analysis of the TRATON Group combines R&D expenditure and investment announcements by the three entities (TRATON, MAN, and Scania) and compares this with TRATON's financial data.

The comparison of financial data from the annual reports with public announcements shows that publicly announced investments accounted for 81.9% (Table 12 compared to Table 4) of the total investments plus R&D expenditures reported in the annual reports' financial statements in the period from 2019 to 2025. ZE investments constituted 28.2% of the value of all announcements (Table 12).

TRATON is a company with a below-average net profit margin, and its policy to transfer money to shareholders is also relatively conservative (see section 3.4.4).

4.4.5 Volvo Group

ZE investments made up 4.4% of Volvo Group's total R&D and investments reported in its financial statements during the period from 2019 to 2025 (Table 12 compared with Table 4). This outcome contradicts the views of interviewed experts, who say that Volvo is a frontrunner in ZE technology application (see section 4.5).

This occurs in an environment characterised by high global revenues for Volvo Group, a significant share of its revenues in Europe, a high operating profit margin, and a relatively high return to shareholders (74% of net profit is distributed to shareholders from 2019 to 2024).

4.5 Expert views

For this report, a group of experts was consulted through interviews. All contacted OEM representatives either rejected the interviews or did not reply, despite a renewed request. In general, no reason was given.

In this section, the expert views of three other interviewees are presented, all of whom have extensive experience in covering truck OEMs. The numbers after each bullet refer to Expert 1[123], 2[124], or 3[125]. Expert views sometimes contradict the analysis of this report. This is addressed at the end of the section.

4.5.1 Paccar/DAF

The consensus appears to be that Paccar/DAF is behind its competitors in electrification:

- Paccar/DAF is a laggard in the transition (2).
- DAF encountered delays in setting up BET production. Although there were process issues, series production started in the second half of 2025 (3).
- DAF recently introduced a new model with an interesting design, although it is based on the ICE model. DAF has built a new plant for this new range. "*This range is too new to be assessed*", according to this expert (1).

4.5.2 Daimler Truck

For Daimler Truck, the comments are positive on its relative position in moving ahead in electrification:

- Daimler Truck invested strongly in marketing and is developing several truck types. Its strategy is very focused on ZE trucks (1).
- Daimler is a cautious mover in the electric HDV sector, advancing but not leading (2).
- Daimler is scaling up now (3).

4.5.3 Iveco

Iveco seems to be lagging behind its competitors:

- IVECO is a laggard in the transition (2).
- Iveco has lost time in partnering with Nikola, which went bankrupt. Iveco has had to redesign its BET range since the partnership ended a few years ago. In the meantime, Iveco relied on LNG engines. It will accelerate the rollout of its BET range in 2026 (1).

4.5.4 TRATON

On TRATON, the experts seem to conclude that there is now a shift to electrification:

- Within TRATON, MAN is catching up with a focus on ZE, although in Europe, the company was previously among the laggards. Now, there has been significant progress, and it is *"better late but with a good product"*. MAN has its own battery plant, allowing it to control the entire production chain. Scania is a step behind. Its engineering differs, as it shifts the ICE range to BET. Scania also has its own battery plant (1).
- TRATON is showing signs of ambition on electric HDVs, and recently announced a green financing framework (2).

4.5.5 Volvo Group

Overall, the experts indicate that Volvo Group was an early adopter of electrification:

- Volvo Trucks leads in BET sales with a broad range of trucks. *"The company was early in adjusting to BETs" (1).*
- Volvo is well ahead of the other four companies, and has already introduced a second generation with a much higher range (3).
- Volvo is a cautious mover in the electric HDV sector, advancing but not leading (2).

4.5.6 Experts' views on the European truck manufacturers' overall position

The interviewed experts hold differing views on the need and responsibility of European truck manufacturers to adopt electrification (BETs). Two experts conclude that the adaptation is quick enough, considering the hurdles for change:

- European truck manufacturers are actively changing their product range to include BETs. OEMs are moving fast enough, but the path is still long and the market is not yet ready. The main hurdles are the gaps in charging infrastructure and the relatively high prices for BETs (1).
- The third expert also highlighted the bottleneck in the charging infrastructure network. The expert emphasises that fixed assets may decline due to electrification, as well as the reduction in the number of jobs. However, the expert indicates that margins are under pressure and that it has not been *"normal years since COVID"*. A challenge is that companies have to spend on two tracks (ICE and BET). For most companies, from 2025 onwards, the change "is happening" (3).

One expert concludes that the European truck manufacturers are not moving fast enough, while there are enormous opportunities:

- European truck manufacturers are telling investors they are ready, but they are underfunding BETs relative to new entrants. Companies must redesign their vehicle architecture, and brands can only maintain their value when they are ahead of the competition. This requires high R&D and investment to adapt; they cannot rely on R&D from others (2).
- Overall, the companies navigated COVID-19 quite well, and they have the net cash positions and financial resources to invest in battery electric R&D and capacity if they choose to. The shift to electrification provides manufacturers with an opportunity to diversify within the energy sector, including developing charging networks. The bottleneck is access to power, both in terms of deploying charging infrastructure hardware and connecting to the grid with the required power (2).
- The expert foresees a shift from Buy to Lease. Finance/lease subsidiaries will become increasingly important (2).

Regarding increasing competition from new entrants, one expert noted that Chinese OEMs still have a significant gap in their service centre network in Europe. HDVs require significantly more maintenance than passenger cars, as they are used daily and businesses rely on them every day (1).

Another expert says that the European OEMs are far behind Chinese OEMs and face a serious problem (2).

4.6 Confronting experts' views with the data and analysis in this report

There are a few points where our analysis differs from expert views:

- While the experts all underline that DAF and Iveco lag behind the other three groups, the standing of Volvo Group is seen more positively by the experts than the ZE announcements made by Volvo and Renault Trucks suggest.
- One expert emphasises that OEMs have problems with margins and, therefore, a challenge in two-track investments (ICE and BET). However, the financial data show that profits have remained strong and that companies have been able to hand back money to shareholders.

5

Conclusion and recommendations

This research examined the investment behaviour of the five largest European truck manufacturers between 2019 and 2025.

Media announcements and other news

The analysis of media announcements indicates a continued reliance on a multi-pathway investment strategy among HDV manufacturers. Manufacturers are spreading resources across several technologies, such as battery-electric, hydrogen, and (bio-) diesel. Nevertheless, they mainly communicate about their R&D and investment in ZE technologies (57% of announcements).

The findings show that most analysed companies engage in joint ventures and collaborative projects aimed at developing and scaling infrastructure for battery-electric HDVs in Europe, likely to hedge against risks. Investment in charging networks and associated systems enables manufacturers to generate revenues from the operation of electric vehicles, rather than just vehicle sales. These activities broaden their business portfolios and provide opportunities for revenue diversification.

Financial data from annual reports and financial statements

The data from the financial statements—including revenues, European share of sales, total R&D expenditures and fixed investments, profits, and dividends and share buybacks—show that over a longer period from 2019 to 2025, the companies were spending on average 8% of their revenues on R&D and investments They generated average operating profit margins of 9%, a net profit margin of 6%, and were able to pay 66% of their net profits to shareholders through dividends and share buybacks.

Based on the size of R&D expenditure and investment budgets, profitability margins and the size of payments to shareholders, the top 5 truck manufacturers in Europe appear to have ample financial leeway for material ZE R&D and investments.

Lack of transparency

All identified announcements in R&D expenditure and investments are equal to 42% of what the companies actually reported in their annual financial statements from 2019 to 2025.

Overall, the analysis highlights a lack of transparency regarding where companies are allocating their R&D and investment funds. Companies do not clearly specify which part of their spending is allocated to ZE technology, which part is for ICE, and which part is for other activities. Moreover, companies do not systematically report in which geographical region they are investing. The EU Taxonomy does not offer a transparency solution, it lacks regional distinctions.

Financial statements should provide more granularity, and company media releases ought to be more frequent, with greater detail on ZE and ICE directions, geographical divisions, and specific technology focuses. The findings indicate that insufficient data reporting practices exist across all assessed companies, and measures for improvement must be implemented by every company.

All European Truck OEMs have transparency issues, with some appearing to be genuine laggards in their ZE transition.

In this context, the conclusions and recommendations for each company are marred by the lack of transparency in nearly every aspect of ZE technology.

Paccar/DAF should be much more transparent about its R&D expenditure and investments in ZE technologies and other innovations, although 2023 and 2024 saw an improvement. Paccar is highly profitable and rewards its shareholders, but in the ZE technology announcements, the company lags behind its European counterparts. This may be because Paccar is a US company, where sustainability regulations lag those in the EU.

There is a lack of transparency regarding Daimler Truck's own multi-billion-euro plan for electrification since it spun off from Mercedes-Benz. In revenue terms, Daimler Truck is the largest truck OEM analysed here, and the company is handing back most of its profits to shareholders. However, it is not leading in relative R&D and investment spending. Interviewed experts do not see it as a leader in electrification, despite a high percentage in EU BET share in the third quarter of 2025

Iveco lags behind in its media announcements and in its in communications about ZE technologies. Over recent years, the company's attention has been clearly diverted to its failed cooperation with the US firm Nikola, resulting in a technology gap with the competition and necessitating a catch-up effort. In financial terms, R&D expenditures and Investments seem relatively high, but lack transparency. The question remains how this will change under the new ownership of the Indian Tata Motors.

TRATON needs to improve the coordination of media announcements regarding ZE technology and other innovations across the TRATON group and its subsidiaries. This is particularly relevant in the context of its subsidiaries, MAN and Scania, which are still lagging in electrification. Although some progress has been made now, the TRATON group could adopt a much more concerted effort to gain and demonstrate leadership in the electrification of its fleet.

While experts are generally positive about Volvo Group's leadership in electrification, its media announcements remain limited. This is combined with a high profit margin and substantial payments to shareholders. With higher transparency, the Volvo Group could show that revenue leadership can go hand in hand with leadership in ZE technology.

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Table 1 Relevant Annual Reports

Company and Annual Report	Source
Paccar (DAF Trucks)	
Annual Report 2019	https://s202.q4cdn.com/173635405/files/doc_financials/2019/ar/paccar-2019-ar.pdf
Annual Report 2020	https://s202.q4cdn.com/173635405/files/doc_financials/2020/ar/2020-paccar-annual-report.pdf
Annual Report 2021	https://s202.q4cdn.com/173635405/files/doc_financials/2021/ar/paccar-2021-annual-report.pdf
Annual Report 2022	https://s202.q4cdn.com/173635405/files/doc_financials/2022/ar/paccar-2022-annual-report-final.pdf
Annual Report 2023	https://s202.q4cdn.com/173635405/files/doc_financials/2023/ar/d651058dars.pdf

Annual Report 2024	https://s202.q4cdn.com/173635405/files/doc_financials/2024/ar/2024-annual-report.pdf
Daimler Truck	
Annual Report 2019	https://group.mercedes-benz.com/documents/investors/reports/annual-report/daimler/daimler-ir-annual-report-2019-incl-combined-management-report-daimler-ag.pdf
Annual Report 2020	https://group.mercedes-benz.com/documents/investors/reports/annual-report/daimler/daimler-ir-annual-report-2020-incl-combined-management-report-daimler-ag.pdf
Annual Report 2021	https://www.daimlertruck.com/fileadmin/user_upload/documents/investors/reports/annual-reports/daimler-truck-ir-annual-report-2021-incl-combined-management-report-dth-ag.pdf
Annual Report 2022	https://www.daimlertruck.com/fileadmin/user_upload/documents/investors/reports/annual-reports/2022/daimler-truck-ir-annual-report-2022-incl-combined-management-report-dth-ag.pdf
Annual Report 2023	https://www.daimlertruck.com/fileadmin/user_upload/documents/investors/reports/annual-reports/2023/daimler-truck-ir-annual-report-2023-incl-combined-management-report-dth-ag.pdf
Annual Report 2024	https://www.daimlertruck.com/fileadmin/user_upload/documents/investors/reports/annual-reports/2024/daimler-truck-ir-annual-report-2024-incl-combined-management-report-dth-ag.pdf
Iveco Group	
Combined Financial Statements 2020, 2019, 2018	https://www.ivecogroup.com/-/media/investors/financial_information/combined_financial_statements/docs/iveco_group_n,-d-,v,-d-,_combined_financial_statements_for_the_years_ended_december_31_2020_2019_and_2018.pdf?rev=6ce6c4a4a8cd4084b036da488f553a8e
Annual Report 2021	https://www.ivecogroup.com/-/media/investors/financial_information/combined_financial_statements/docs/ivg_report_on_combined_financial_statements_31_december_2021.pdf?rev=7e33b0551343462e9d77e64c455bd23b
Annual Report 2022	https://www.ivecogroup.com/-/media/investors/shareholder_meetings/docs/agm_2023/2022_Iveco_Group_Annual_Report.pdf?rev=8b77f69384c04fdca590ce4db494da07
Annual Report 2023	https://www.ivecogroup.com/-/media/investors/financial_information/financials/docs/2023_Iveco_Group_Annual_Report.pdf?rev=68605438b0684325a6dd5e930807b184
Annual Report 2024	https://www.ivecogroup.com/-/media/investors/shareholder_meetings/docs/agm_2025/doc/2024_IvecoGroup_Annual_Report-(1).pdf?rev=3b3cc34c26394940881ed6d03728e691
TRATON	
Annual Report 2019	https://ir.traton.com/en/publications
Annual Report 2020	https://ir.traton.com/en/publications
Annual Report 2021	https://ir.traton.com/en/publications

Annual Report 2022	https://ir.traton.com/en/publications
Annual Report 2023	https://ir.traton.com/en/publications
Annual Report 2024	https://ir.traton.com/media/document/5065daad-8647-417c-9594-68267e86f900/assets/DE000TRAT0N7-JA-2024-EQ-E-01.pdf?disposition=inline
Scania	
Annual Report 2019	https://www.scania.com/content/dam/group/investor-relations/financial-reports/interim-reports/scania-year-end-report-january-december-2019.pdf
Annual Report 2020	https://www.scania.com/content/dam/group/investor-relations/financial-reports/interim-reports/2021/scania-year-end-report-january-december-2020.pdf
Annual Report 2021	https://www.scania.com/content/dam/group/investor-relations/financial-reports/interim-reports/folder-2022/scania_year_end_report_january-december_2021.pdf
Annual Report 2022	https://www.scania.com/content/dam/group/investor-relations/financial-reports/interim-reports/folder-2022/scania_year-end_report_january_december_2022_.pdf
Annual Report 2023	https://www.scania.com/content/dam/group/investor-relations/annual-review/download-full-report/scania-annual-and-sustainability-report-2023.pdf
Annual Report 2024	https://www.scania.com/content/dam/group/investor-relations/annual-review/download-full-report/scania-annual-and-sustainability-report-2024.pdf
Volvo Group	
Annual Report 2019	https://www.volvogroup.com/content/dam/volvo-group/markets/global/classic/investors/reports-and-presentations/annual-reports/annual-and-sustainability-report-2019.pdf
Annual Report 2020	https://www.volvogroup.com/content/dam/volvo-group/markets/global/classic/investors/reports-and-presentations/annual-reports/annual-and-sustainability-report-2020.pdf
Annual Report 2021	https://www.volvogroup.com/content/dam/volvo-group/markets/master/investors/reports-and-presentations/annual-reports/annual-and-sustainability-report-2021.pdf
Annual Report 2022	https://www.volvogroup.com/content/dam/volvo-group/markets/master/investors/reports-and-presentations/annual-reports/AB-Volvo-Annual-Report-2022.pdf
Annual Report 2023	https://www.volvogroup.com/content/dam/volvo-group/markets/master/events/2024/feb/annual-report-2023/AB-Volvo-Annual-Report-2023.pdf
Annual Report 2024	https://www.volvogroup.com/content/dam/volvo-group/markets/master/events/2025/annual-reports/volvo-group-annual-report-2024.pdf

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