



ENERGY EXCELLENCE /TRUCKS

Best practices for
fleet electrification in logistics

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Glossary

ACEA	L'Association des Constructeurs Européens d'Automobiles; Association of European Automobile Manufacturers
AFIR	Alternative Fuels Infrastructure Regulation
BAZG	Bundesamt für Zoll und Grenzsicherheit (Schweiz); Federal Office for Customs and Border Security (Switzerland)
Bio-LNG	Bio-Liquified Natural Gas; low-emission alternative to LNG
CSDDD	Corporate Social Due Diligence Directive; European Supply Chain Directive
CSRD	Corporate Sustainability Reporting Directive, EU directive on corporate sustainability reporting
DACH	Germany, Austria, Switzerland; Deutschland, Österreich, Schweiz
E-truck	Battery electric truck
EMS	Energy management system
ESG	Environmental, Social and Governance; criteria and framework of the United Nations for sustainable management of companies
HPC	High Power Charging
Hub-To-Hub	Transportation that takes place exclusively from one logistics hub to another logistics hub
HVO	Hydrotreated Vegetable Oil; a renewable diesel

KsNI	Funding program for climate-friendly commercial vehicles and infrastructure in Germany
kW	Kilowatt
Last-Mile	Last stage of the supply chain, usually transportation to the end customer
Middle-Mile	Transportation of goods between a hub and stationary facilities or retail outlets
N1	Commercial vehicle class up to 3.5 tons total mass
N3	Commercial vehicle class with more than 12 tons total mass
OEM	Original Equipment Manufacturer; here automobile manufacturer
PV	Photovoltaics
RMS	Route management system
TCO	Total Cost of Ownership
WMS	Warehouse management system



Management Summary

The markets for battery-electric trucks and charging solutions for logistics depots are closely interlinked due to the electrification of logistics fleets. The switch to emission-free powertrains is leading to new requirements in terms of vehicles, charging infrastructure and logistics processes. Some logistics companies have already been able to gain experience, but there is a lack of comprehensive knowledge reports to drive forward fleet electrification on a broad scale even faster. As truck mileage is a core business purpose for logistics companies, the decision on the type of powertrain is very much cost-driven.

The **P3 Energy Excellence /Trucks Report** documents the experiences of several pioneers of electromobility in logistics through interviews in order to identify the most important influencing factors, motivations and challenges in electrification and to enable derivations to be made. This explorative approach provides insights into markets that are still at an early stage of development.

The report begins with a look at the development of electromobility in the logistics sector through the eyes of Sascha Hähnke from REMONDIS. Following this, industry leaders such as Elflein Holding GmbH, Hermes Germany GmbH, Hugelshofer Logistik AG and NOSTA Group provide insights into their electrification processes and show which factors are driving the transition of truck fleets to electromobility. Among other things, fleet characteristics, operating profiles and the existing charging infrastructure were analyzed.

A comprehensive analysis of the influencing factors identified the company's internal sustainability targets, EU emissions regulations as well as tolls and taxation as the most important push factors. In terms of pull factors, areas of tender and customer requirements, corporate image and the lower total cost of ownership of electric trucks were identified. Interviewees, on the other hand, did not consider subsidies to be a decisive factor in their decision to opt for electrification.

The biggest pain point identified was the lack of planning certainty with regard to political framework conditions and the long-term determination of toll rates, which made investments more difficult. There are also difficulties in setting up charging infrastructure at the depot, from bureaucratic processes to long delivery times for charging hardware and vehicles.

The **P3 Energy Excellence /Trucks Report** makes it clear: for our interview partners, electrification is the way forward in logistics transport - and their insights inspire to play an active role in shaping this change.

1. Foreword

E-mobility in logistics - a topic that is passionately debated in the industry. While supporters see electrification as the way to decarbonize the industry, critics often see battery-electric technology as too expensive and impractical. With the end of federal subsidies in Germany for electric commercial vehicles, such as the KsNI subsidy (German subsidy program for climate-friendly commercial vehicles and infrastructure), the question arises as to whether the technology can become established without subsidies. To this end, the successes and opportunities achieved by companies that have already taken the step towards fleet electrification should be investigated. It is also important to analyze the challenges and barriers they have faced and how the implementation of electrification can be optimized in the future.

In recent years the electrification of truck fleets has gained considerable momentum and is making promising progress. According to ACEA (European Automobile Manufacturers Association), the number of newly registered electric trucks in Germany rose from 228 to 579 between the first half of 2023 and the first half of 2024. This means that electric trucks only accounted for 1.6 % of new registrations in the first half of the year, but the share is growing ("New commercial vehicle registrations", ACEA, July 2024). The coming years will show whether the strong growth momentum of the new technology can be maintained from the initial pilot projects and subsidized measures into widespread use. In any case, the ambitious targets for achieving climate

neutrality in Germany by 2045 (German Federal Environment Agency, 2024) and in the European Union by 2050 ("Fit for 55", European Commission, 2023) have already been set.

The **P3 Energy Excellence /Trucks Report** aims to present the success stories and experiences of pioneers in the field of battery-electric mobility in logistics, focusing on heavy trucks in the N3 vehicle class. Interviews with pioneers will be used to show how companies are already successfully electrifying their fleets, setting up charging infrastructures and what insights and recommendations can be gained from these projects. The report provides a market overview of the current trends and challenges of e-mobility in the logistics sector and is intended to show other companies possible approaches for the transformation to CO₂-neutral logistics.

At the beginning, an interview with Sascha Hähnke, who has many years of experience in the field of sustainable logistics, provides interesting insights into the development of e-mobility in recent years. He shares his views on widespread statements about electrification. This introduction forms the basis for the subsequent interviews to shed more light on the perspectives of four logistics companies with different operational profiles. The findings of these interviews are supplemented by the current market situation, regulatory requirements and further insights from P3 in the following chapter Push and Pull factors of electrification. This chapter also summarizes the main advantages and challenges of fleet electrification. This is followed by the requirements formulated by logistics experts in the interviews with various industry

stakeholders. Finally, P3 provides a forward-looking expert assessment of current market developments. The report concludes with an outlook containing the most important findings and forecasts.



2. The development of e-mobility in recent years - an interview with Sascha Hähnke (REMONDIS)



Sascha Hähnke

Managing Director

REMONDIS
Sustainable Services

Copyright: REMONDIS

Sascha Hähnke has been very publicly active in the logistics sector for some time now. After almost 19 years as managing director of Rhenus Transport GmbH & Co KG, he moved to its sister company, REMONDIS Sustainable Services GmbH, in 2023. Since then, he has been in charge of setting up sustainable fleets and looking after alternative powertrain technologies. His aim is to make existing fleets as environmentally friendly as possible, for example by using biodiesel for combustion engines, and at the same time to find the optimum solutions for every application, regardless of the powertrain, when purchasing

new vehicles. As early as the 2000s, he promoted the topic of sustainability within the Rhenus Group and deployed the first hybrid diesel-electric truck in 2011 and the first fully electric heavy-duty trucks in 2019. With this extensive experience, Hähnke has done pioneering work in the German logistics industry and is the ideal interviewee both to comment on statements about the electrification of fleets and to illustrate how far the industry has already come. During the interview, he shares his personal perspective on the industry's achievements, while also addressing existing challenges and proposing creative strategies to overcome them.



Statement 1: Due to the high requirements in terms of range and the higher weight, the electrification of heavy commercial vehicles is still difficult compared to lighter classes.

Hähnke refutes this assumption: *"The range of electric trucks is currently 500 to 600 km, which is completely sufficient for many applications."* In addition, the prices for e-trucks have fallen, meaning that both price and range are *"moving in the right direction"*. Another misunderstanding concerns the transportation of hazardous goods: *"Due to a lack of knowledge, the e-truck was portrayed as dangerous."* However, these concerns are outdated and there are no longer any restrictions. According to Hähnke, the charging time of electric trucks is also often misjudged: *"The charging time is much shorter than many initially assume."* The technology is also continuing to develop for specialized applications. Hähnke reports on the successful use of their electric trucks with hydraulic systems and tipper or walking-floor trailers for use cases in the recycling and water sectors.

Statement 2: The varying battery performance at different outdoor temperatures leads to problems in route planning.

Hähnke admits that there are variations in very cold temperatures, but that these are in the region of 15 to 20 percent when temperatures fall into the minus range. *"I don't yet have any experience of sustained double-digit sub-zero temperatures,"* he says, but variations of 50 percent, as is often claimed, are exaggerated.

Statement 3: The lack of empirical values for wear and tear and the unclear residual value make it difficult to calculate the total cost of ownership (TCO).

Hähnke agrees that the residual value of e-trucks represents a major risk. Nobody currently knows exactly how much residual value remains in the vehicles and the batteries themselves, which are the most expensive component, after years of use. *"This risk is the price that pioneers pay"*, he explains. But there are solutions: *"Operators need the same models as for diesel trucks: leasing, buy-back, residual value guarantees, financing, regular purchase [...] so that the risk of residual value does not lie solely with the fleet operator."* Hähnke calls on vehicle manufacturers' banks to develop innovative financing models that reduce this risk. The reuse of batteries could also be an approach, for example by replacing batteries or converting them into battery storage systems.

Statement 4: Funding programs for vehicles and charging infrastructure are insufficient and too bureaucratic.

Hähnke is disappointed with the current funding landscape and the discontinuation of many programs such as the German KsNI: *"I believe we will have to manage without funding in the long term and should not wait for diesel to become more expensive."* He appeals to companies to engage more closely with their customers and develop electrification solutions together. According to Hähnke, small funding programs at state level are *"well-intentioned, but basically the wrong approach."* He criticizes the lack of funding to support diesel-free fleets and calls for part of the federal government's toll revenue to be used directly for funding programs for the electrification of vehicle fleets.

Statement 5: There is a lack of a comprehensive and powerful charging infrastructure for e-trucks.

Hähnke fully agrees on this point: *"The charging infrastructure is disastrous to non-existent."* He sees four charging models for the future: depot charging, public charging, semi-public charging¹ and partner charging². He says that depot charging is the best way for logistics companies to plan routes. However, the development of a charging infrastructure is characterized by uncertainties, especially regarding permits for the construction of charging stations and any necessary network expansion measures. Hähnke has also noticed among himself and his colleagues that more and more logistics companies are also relying on battery storage systems, as the grid capacity is often insufficient for charging parks. *"Everyone is planning for the medium term and the long term, which means beyond pure depot charging."* When it comes to fleet electrification, logistics companies not only have to think about their own charging infrastructure but are increasingly developing an understanding of the entire ecosystem. This also includes the energy management system of the properties.

Statement 6: Higher investment costs for e-trucks and charging infrastructure cannot be passed on to customers as they are not prepared to pay more.

Hähnke admits that there are customers who do not accept higher prices, but *"the number of customers who are prepared to pay more is definitely increasing."* Nevertheless, he clearly rejects the generalization of all customers. He considers the role of subcontractors to be interesting: *"Subcontractors are part of the transport chain. We have a special responsibility towards them and should take them into account when planning the charging infrastructure."* Hähnke

¹ Semi-public charging: Charging points can only be used by certain user groups

² Partner Charging: Semi-public charging with partners and agreed partner tariffs as well as simple billing solutions

goes even further: *"We must support subcontractors in the procurement of e-trucks - pass on experience and lessons learned and enable field trials with test vehicles."* This is the only way to drive forward the electrification of routes together with subcontractors. *"We are delighted when we can electrify new routes together with our subcontractors."* This is an important step towards jointly mastering the transport transition.

Statement 7: There is not enough internal knowledge and skills to plan and manage an electric fleet or to train drivers.

Hähnke's assessment of the key challenge posed by this statement is similar: *"The large companies not only have a sustainability department but also a construction department - at REMONDIS, for example, we also have energy engineers - which, admittedly, is a great advantage."* However, manufacturers, service providers for charging infrastructure and back-end provider have the necessary specialist staff who can also support smaller and medium-sized logistics companies. According to Hähnke, the arguments of a lack of knowledge or capacity no longer apply. Nevertheless, Hähnke sees a need for improvement in the operational area, especially among drivers: *"Drivers need to rethink."* Through recuperation, i.e. adapted driving behavior that results in the recovery of braking energy, he was even able to recover up to a third of the battery capacity during a test drive. Driver training and support are crucial in order to reduce fears and reservations and actively inspire enthusiasm for electrification.

Conclusion

The interview with Sascha Hähnke provides valuable insights into the current status of the electrification of fleets in the logistics sector. Hähnke shows that electromobility has made considerable progress in recent years and believes that many of the challenges often mentioned - such as range, charging time and battery performance - have already been solved better than is generally assumed. He also emphasizes that it is not just about technological solutions, but that creative approaches and cooperation within the industry are also required to implement electrification across the board.

Nevertheless, according to Hähnke, there are still challenges, such as a lack of charging infrastructure and uncertainties when calculating residual values. Hähnke is calling for targeted support and new financing models from OEMs, banks and politicians. He also emphasizes the need to actively involve subcontractors and make the transition to electromobility easier for them through advice and field trials.

In conclusion, Hähnke sees the transition to sustainable logistics as a joint task that requires not only technical expertise, but also a rethink of the entire logistics ecosystem - from drivers and customers to manufacturers and politicians. The industry is on the right track, but there is still a lot to be done to make the electrification of logistics fleets comprehensive and economically sustainable.

3. Pioneers in logistics: Experiences from the industry

The previous chapter has already made it clear that e-mobility is making remarkable progress in logistics. But what are the specific experiences and current challenges of the pioneers of electrification? In order to shed light on these, a comprehensive questionnaire was developed that focuses on six key areas:

- Operating profiles and fleet
- Electrification process
- Charging infrastructure
- External logistic companies
- Benefits of electrification
- Status quo & outlook

The exclusive insights from the interviews reveal many similarities, but also company-specific differences, which are presented in detail in the following chapters.

5/5

5 out of 5 logistics companies rely on their own, demand-oriented charging infrastructure to charge their e-trucks - public charging is of secondary importance.

4/5

For the majority of pioneers, sustainability goals are one of the reasons for fleet electrification.

5/5

The biggest challenge for all the pioneering logistics companies surveyed is the lack of planning certainty from the political side with regard to taxes, tolls, subsidies and the like.

5/5

All logistics companies surveyed are relying on battery electric vehicles to build their CO₂-neutral truck fleet.

3.1 Elflein Holding GmbH

Interviewpartner

Marco Schubert

Key Account Manager
Transport

"The motivation comes from various sources - sustainability goals, customer requirements and legal requirements."



Copyright: Elflein Transport Europe GmbH

The company

Head office: Bamberg, Germany
DACH locations: 19 locations, 11 in Germany

Fleet properties

Fleet size DACH: 450 own vehicles
Leasing/ownership: Ownership (~90 %)
Vehicle type: Tractor (~95 %)

Operational profile

Vehicle classes: N3 (~95 %)
Shifts: Two- & three-shift
Mileage per vehicle per year: 180,000 km
Transport profile: Hub-to-hub

Electrification & charging infrastructure

Electric trucks: 5 (<5 % of the total N3 fleet)
Charging profiles: Own depot
Charging solution: 3 charging points
(3 stations of 150 kW each)
Local energy generation: Yes (PV generation)
Battery buffer storage: n/a

Copyright: Elflein Transport Europe GmbH

Motivation

Elflein decided early on to electrify its vehicle fleet in order to meet both the increasing demands of customers and the legal framework. Another factor is the long-term goal of making transportation more sustainable. Marco Schubert explains: *"The motivation comes from various sources - sustainability goals, customer requirements and legal regulations. It was important for us to gain experience in this area at an early stage."*

Vehicle fleet

Elflein has a fleet of around 450 tractor units, the majority of which are used in Germany. The company also works with subcontractors, who make up around 10 % of the total fleet. The rest of the fleet consists of the company's own vehicles. *"The majority of our vehicles are owned by ourselves"*, emphasizes Marco Schubert. The fleet is mainly geared towards freight transport in the automotive sector, but the portfolio also includes the transportation of paper, glass and food.

Charging infrastructure

Elflein currently operates several charging points with a maximum charging capacity of 150 kW at various locations. The company relies on charging solutions from the charging hardware manufacturer Kempower. This capacity is sufficient to charge the current e-trucks, which are primarily used on fixed short journeys. The five electric vehicles are currently mostly charged on the company premises. With the expansion of the fleet, there are plans to significantly expand the charging infrastructure.

Goals

"Our Managing Director has the clear goal of having a completely climate-neutral fleet by 2034," emphasizes Schubert. This means that conventional diesel will no longer be in use. The strategy includes a mix of different climate-neutral powertrain technologies. Elflein expects a significant increase in the proportion of electric vehicles in the fleet by 2030, but alternative powertrain systems such as bio-LNG and HVO (hydrotreated vegetable oil) will also play a role.

Advantages

"Our Managing Director has the clear goal of having a completely climate-neutral fleet by 2034," emphasizes Schubert. This means that conventional diesel will no longer be in use. The strategy includes a mix of different climate-neutral powertrain technologies. Elflein expects a significant increase in the proportion of electric vehicles in the fleet by 2030, but alternative powertrain systems such as bio-LNG and HVO (hydrotreated vegetable oil) will also play a role.

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Our Managing Director has the clear goal of having a completely climate-neutral fleet by 2034.

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Challenges

Electrification also brings challenges with it. For example, the expansion of the charging infrastructure and the procurement of vehicles require considerable investment. Particularly long delivery times for charging infrastructure, such as

transformers, are currently a problem. Government funding programs are also perceived as inadequate.

Conclusion and outlook

Elflein is a pioneer in the field of electrification in the transport industry. With a clear vision of becoming climate-neutral by 2034, the company has already taken its first steps towards sustainable logistics. Despite the challenges in terms of infrastructure, costs and skilled workers, Elflein remains optimistic and plans to further increase the proportion of electric vehicles in the coming years. The experience it has gained and its strategic foresight position Elflein as an important player in the transformation of the transportation sector.



3.2 Hermes Germany GmbH

Interviewpartner

Dennis Caldwell

Future Energy and Transport
Manager

„Moving our future: With alternative
powertrains for sustainable and innovative
logistics“

Hermes



Copyright: Hermes Germany / Wiling-Holtz

The company

Head office: Hamburg, Germany
DACH locations: 11 logistics centers and ~270 own
and partner locations in Germany

Fleet properties

DACH fleet: n/a
Leasing/own portfolio: Leasing (~100 %)
Vehicle type: Mostly N1

Operational profile

Vehicle classes: N1 (~90 %), N3 (~10 %)
Shifts: Two- & three-shift
Mileage per vehicle per year: 90,000 - 120,000 km
Transport profile: Regional transport, hub-to-hub,
middle-mile

Electrification & charging infrastructure

E-trucks: 6 N3; >1,000 N1
Charging profiles: Own depot (80 %), public (20 %)
Charging solution: 8 DC charging points
(4 stations of 300 kW each) + 510 AC wall boxes
Local energy generation: n/a
Battery buffer storage: n/a

Copyright: Hermes Germany / Wiling-Holtz

Motivation

Hermes Germany, one of the leading logistics service providers in Germany, has set itself clear goals to convert its own vehicle fleet in a sustainable and future-oriented manner. Dennis Caldwell, Future Energy and Transport Manager at Hermes Germany, explains that the motivation for decarbonization is primarily driven by the company's internal sustainability goals (resulting from the Science Based Targets initiative). At the same time, the company wants to gain experience at an early stage of electrification and prepare its internal structures so that the fleet can be completely converted quickly as soon as the total cost of ownership for the routes driven by Hermes Germany is in favor of electric trucks, including through new vehicle models.

Vehicle fleet

Hermes Germany operates a large fleet of commercial vehicles, which are primarily used in urban last-mile distribution. Electrification is already well advanced in this segment: more than 1,000 light commercial vehicles with fully electric powertrains are already in use. This development shows that Hermes Germany has ambitious goals to drive forward the switch to climate-friendly vehicles. In contrast, the electrification rate for the company's own heavy commercial vehicles is still around 5 %. However, Hermes Germany operates most of its transports with heavy commercial vehicles via logistics partners. Hermes Germany relies on collaborations to electrify these fleets, and many of the companies are also piloting electric vehicles driven by their own ambitions. Hermes Germany's approach is to motivate partner companies to make the switch to electric vehicles through knowledge transfer and incentives. This is how decarbonization is to be achieved together. In addition to electric trucks,

Hermes Germany also operates vehicles powered by alternative fuels such as biogas, HVO100 and hydrogen. Due to the increasing economic advantages of electric trucks, this form of powertrain is currently the preferred choice. The focus of the fleet is on electric trucks available on the market from manufacturers such as DAF, Mercedes and Volvo, with new models and other brands to be integrated into the fleet in the future. For Hermes Germany, an important driver for the switch to electric trucks is the leasing model being pursued, which enables the company to convert the fleet quickly and flexibly to new technologies.

Charging infrastructure

One of the key challenges in the electrification of the fleet is the development of a charging infrastructure that meets demand. Currently, the majority (~80 %) of Hermes Germany's electric vehicles are charged at its own depot. An HPC station with up to 300 kW is available at each of four locations, which enables multi-shift operation at each site. For longer journeys, the scheduling is adapted so that as little recharging as possible is required en route. Hermes Germany is planning to expand the infrastructure in line with demand in the future.

Challenges

Nevertheless, challenges remain. For example, customers are demanding the decarbonization of logistics, but this is not reflected in a higher willingness to pay. Similarly, the public charging infrastructure is currently still underdeveloped and there are access restrictions for trucks at car charging stations. This makes it difficult to plan dispatch scheduling for long distances. Furthermore, legal hurdles would hinder the provision of charging points for

partner companies at their own depots. The biggest obstacle, however, of Hermes Germany is the lack of planning security. In order to drive electrification forward, it is crucial that government funding programs and legal frameworks are set up for the long term in order to provide the necessary investment security for companies.

Conclusion and outlook

Despite the challenges, Hermes Germany is convinced that the future of logistics in the company is electric. *“The OEMs' product portfolio [in terms of range and purchase prices] still needs to be expanded, but it is moving in the right direction,”* says Caldwell. With this positive outlook, Hermes Germany is continuing on the path of decarbonization in road transport.

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Customers are demanding sustainability from logistics providers right up to the point of payment.

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3.3 Hugelshofer Logistik AG

Interviewpartner

Martin Lörtscher

Chief Executive Officer

"Hugelshofer Logistik AG aims to halve its CO₂ emissions by 2030, primarily through the ambitious electrification of its vehicle fleet."

HUGELSHOFER 
LOGISTIK AG



Copyright: Hugelshofer Logistik AG

The company

Head office: Frauenfeld, Switzerland
DACH locations: One own, two rented

Fleet properties

Fleet size DACH: 250 own
Leasing/ownership: ~90 % ownership
Vehicle type: Tractor, lorry swap trailers

Operational profile

Vehicle classes: N3 (80 %), N1 (20 %)
Shifts: Two- & three-shift
Mileage per vehicle per year: 120,000 - 180,000 km (depending on body)
Transport profile: Regional transport, hub-to-hub, middle-mile

Electrification & charging infrastructure

E-trucks: 30 N3 (15 % of the total N3 fleet)
Charging profiles: Own depot
Charging solution: 28 charging points (14 x 360 kW stations)
Local energy generation: Yes (1 MWp PV generation)
Battery buffer storage: n/a

Copyright: Hugelshofer Logistik AG

Martin Lörtscher, Chief Executive Officer of Hugelshofer Logistik AG, is largely responsible for the electrification of the vehicle fleet and the development of the charging infrastructure.

Motivation

The electrification of Hugelshofer Logistik AG's truck fleet was driven forward by three motivational reasons: Firstly, requirements from government tenders calling for emission-free logistics. Secondly, the company's own desire to play a pioneering role in the industry. Thirdly, the technological advantages of electric powertrains, in particular the significantly lower maintenance costs of up to 50 %, according to Hugelshofer.

Vehicle fleet

The current electric fleet comprises various vehicles, including models from Designwerk, Renault and Volvo. When selecting the vehicles, the manufacturers' ability to deliver was an important decision criterion. In the future, further brands and new models will be added to expand the fleet. The weakening sales in Germany are favouring the Swiss company, as a result of which the vehicles are being pushed onto the Swiss market at a reduced price. Another decisive factor for electric trucks are the OEMs' extensive maintenance contracts with guaranteed mileages of over 1 million kilometers and attractive prices, *"for which you wouldn't get a diesel maintenance contract,"* says Lörtscher.

Charging infrastructure

To implement electrification, a dedicated charging infrastructure with photovoltaic generation was planned at the depot with local partners within a year and implemented in a further ten months. For this purpose, a carport with photovoltaic modules was built on the truck parking areas, under which the charging infrastructure was installed. The charging points have already been designed with the future growth of the fleet in mind. Part of the charging infrastructure is publicly available and can be used by other logistics companies using a reservation system. Mr. Lörtscher senses a *"great openness in the industry between logistics companies to open up the charging infrastructure in the depots to each other in order to benefit from low prices."* The development of the company's own charging infrastructure, including local power generation, has been a core element of the electrification strategy from the very beginning. Accompanied by smart logistics dispatch systems, the self-consumption of the photovoltaic system could be maximized and the electricity price for other requirements could also be greatly reduced by means of flexible procurement on the electricity exchange. In this way, the charging costs of the vehicles could be kept low. Thanks to lower maintenance costs, the overall operating costs for e-trucks at Hugelshofer Logistik AG are also significantly lower than those of diesel vehicles. Last but not least, the toll charges for electric trucks on freeways in Switzerland are largely waived, making the operation of electric trucks highly profitable overall.

Success factors

For Hugelshofer, a key factor for the successful implementation of electrification was the planning security with regard to the long-term truck toll and the reliable funding structures in Switzerland. This enabled a long-term and reliable calculation of profitability. Close cooperation between Hugelshofer and the charging infrastructure manufacturer Kostad as well as the vehicle OEMs was able to resolve many of the initial problems, such as a constantly high charging power.

Ausblick

In order to better implement similar projects in the future, approval procedures with the authorities and grid operators should be shortened. One possibility would be to pool the competencies and responsibilities of the relevant authorities.

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Anyone who has not yet dealt with the electrification of their depot runs into the risk of being left behind!

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Conclusion and advice

Lörtscher also has an important advise for other logistics companies: *"Anyone who has not yet looked into electrifying their depot runs into the risk of being left behind!"* Hugelshofer Logistik AG is determined to push ahead with electrification, because even without subsidies for vehicles and charging infrastructure, logistics operations with electric trucks are already an economically attractive business for the future.

3.4 NOSTA Group

Interviewpartner

Christian Hammacher

Chief Operating Officer

"The economic efficiency [of fleet electrification] as well as the operational possibilities must match the customer requirements."

Group
NOSTA



Copyright: NOSTA Group

The company

Head office: Osnabrück, Germany
DACH locations: 30, of which ~50 % with depot

Fleet properties

Fleet size DACH: 45 own, 400 subcontractors
Leasing/own stock: 100 % leasing
Vehicle type: Articulated lorry

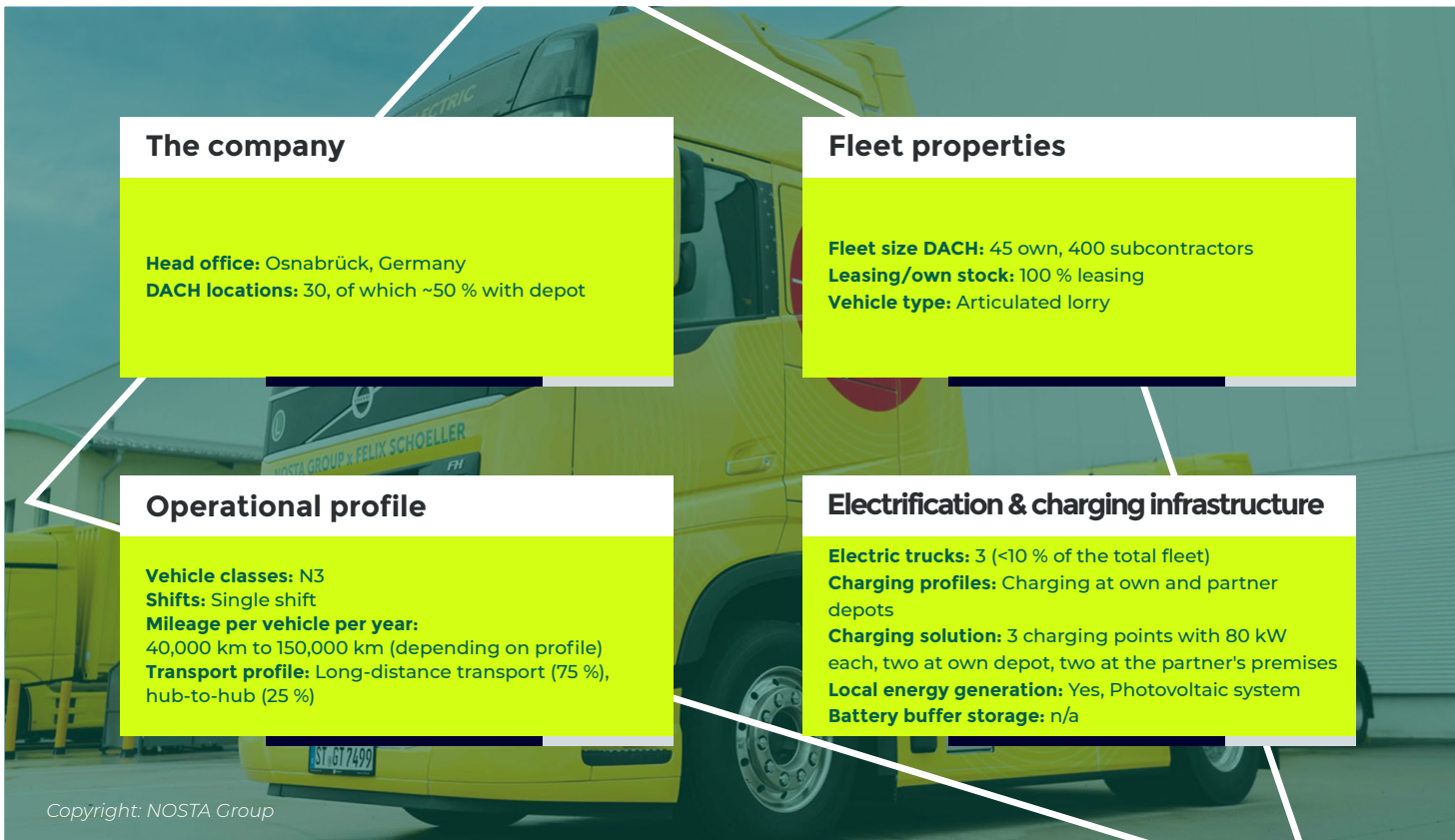
Operational profile

Vehicle classes: N3
Shifts: Single shift
Mileage per vehicle per year:
40,000 km to 150,000 km (depending on profile)
Transport profile: Long-distance transport (75 %),
hub-to-hub (25 %)

Electrification & charging infrastructure

Electric trucks: 3 (<10 % of the total fleet)
Charging profiles: Charging at own and partner depots
Charging solution: 3 charging points with 80 kW each, two at own depot, two at the partner's premises
Local energy generation: Yes, Photovoltaic system
Battery buffer storage: n/a

Copyright: NOSTA Group



Christian Hammacher, Chief Operating Officer of the NOSTA Group, is also responsible for the company's fleet and has been with the Group for over eight years.

Motivation and vehicle fleet

Hammacher explains that the motivation to electrify the fleet is primarily determined by customer requirements, sustainability goals and the marketing effect of a pioneering role. At present, three of the 45 vehicles in the fleet are electric; these are Volvo FH Electric models. The current sustainability efforts are based on the statutory requirements - there are no concrete sustainability targets for 2030 or 2050 beyond this: *"We say quite clearly that it must meet customer requirements and be marketable in terms of both cost-effectiveness and operational possibilities."* In view of the rapid technological development, however, he can well imagine that around 75 % of the company's own fleet will be electric by 2030.

Partnerships

Collaboration with subcontractors is particularly important to the NOSTA Group, as the operation of warehouses is an essential part of its business activities alongside logistics services. For example, 80 to 90 % of ramp contacts are handled by external logistic companies. With regard to electrification, Hammacher emphasizes that appropriate concepts will have to be developed together with subcontractors in the future, as it is currently neither financially possible for them to make the necessary investments nor to cope with the operational complexity. He sees the year 2030 as a realistic time horizon for implementing joint electrification concepts: *"We have to offer our*

subcontractors long-term assignments in order to make the investments feasible." Hammacher does not rule out the possibility of the NOSTA Group investing in the necessary vehicles itself.

Charging infrastructure

The three electric trucks are currently used for commuting between the company's own warehouse and a customer's production facility, and the charging infrastructure has been designed accordingly. The three charging points each have an output of 80 kW, which is due to the available grid connection power. Two of the charging points are located on the customer's factory premises, while the third is located in the company's own depot. Both the vehicles and the charging points are leased and are organized independently of the dispatching system due to the regular traffic. As there is no reason to expand the charging infrastructure with the current set-up and this would also entail a costly expansion of the grid connection capacity, there are currently no plans to further expand the charging infrastructure.

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Whether with or without funding, we need predictable framework conditions. [...] There has to be an understanding that we are talking about assets that have a useful life of around 4-7 years, plus a secondary market.

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Outlook and challenges

The NOSTA Group plans to set up a comprehensive electrification strategy in 2025 and 2026, based on the current delivery times of e-trucks. Hammacher sees the biggest challenges in terms of planning: *"Unfortunately, the reliability of delivery dates for e-trucks and charging infrastructure is not yet a given."* The operation of the e-trucks is also proving more difficult than expected, despite statements to the contrary from the vehicle manufacturers. *"There are problems both with the vehicles themselves and with communication between the vehicle and charging points. Even if the manufacturers say otherwise - we are definitely not yet at series quality."* Hammacher also describes the public funding processes as *"extremely complicated"*. In order to avoid this, the company's current procurement is carried out via its partner Greiwing Truck & Trailer, which also handles the funding issue in addition to renting the vehicles. *"The reality of applying for funding through approval and procurement does not fit in with the reality of logistics,"* adds Hammacher. In his opinion, the time horizons of the funding processes are too long, while the commissions of the customers often only last a few months. Hammacher sees a need for action on the part of politicians, as he believes that funding programs for the procurement of e-trucks are only start-up financing for manufacturers and do not promote the actual operation of e-trucks.

Conclusion

Hammacher once again emphasizes the importance of the time factor: *"Whether with or without funding, we need predictable framework conditions. [...] There must be an understanding that we are talking about assets that have a useful life of around 4-7 years, plus a secondary market."* Planning security should therefore cover at least the initial useful life of the vehicles. This is the only way to conclude contracts with customers - because unclear cost structures are only accepted by customers with whom there is a strong basis of trust.



4. Derivation of the push and pull factors

The electrification of truck fleets in the logistics industry is gaining momentum and a variety of different factors are increasingly incentivizing logistics companies to switch to electric powertrains. The drivers for logistics pioneers to electrify their fleets can be divided into two categories: Push factors, which are created by external pressure or regulatory requirements, and pull factors, which promote the switch to electric powertrains through incentives and economic benefits.

PUSH

- Internal company sustainability goals
- EU CO₂ fleet regulation for vehicle OEMs
- Tolls and taxation
- Expansion of ESG reporting obligations



PULL

- Tender and customer requirements
- Total Cost of Ownership
- Technological development
- Pioneering role and public image

Push factors

A key push factor is the **internal company sustainability goals**. Many logistics companies set themselves targets that are defined by the company's own motivation and corporate guidelines as part of sustainability reporting. Hugelshofer Logistik AG, for example, has set itself the goal of halving its CO₂ emissions by 2030 - a target that is to be achieved primarily through the electrification of its fleet. Another strong influencing factor is the current and future EU emissions regulations. The European Union is aiming for an overall reduction in emissions of 55 % by 2030 compared to 1990, which is to be achieved, among other things, through **CO₂ fleet regulation** for truck manufacturers: By 2030, CO₂ emissions from new trucks must be reduced by 45 % compared to 2019, and by 2040 this figure should reach 90 % ("CO₂ emission standards", European Commission, 2024). This obliges vehicle OEMs to offer more electric trucks and contributes to electrification in the logistics industry. The logistics companies surveyed by P3 want to be prepared for the stricter regulations as early as possible in order to successfully master the ramp-up of electric fleets and ensure that operations continue to run smoothly.

Another important factor that makes the use of e-trucks attractive is the lower operating costs, partly due to reduced **toll and tax payments**. In many countries, zero-emission trucks only pay a fraction of the usual toll charges. In Germany, e-trucks are exempt from tolls until 2026, after which the toll will be calculated based on CO₂ emissions - a system that the Netherlands will also use from 2026 and Austria has been using since 2024 (Reform of the truck toll, Federal German government, 2023; Extension of the truck toll, German Federal Ministry for Climate Action, 2023; Legislation relating to the heavy goods vehicle charge,

Ministerie van infrastructuur en waterstaat, 2023). In Switzerland, e-trucks are exempt from tolls until 2030 (Leistungsabhängige Schwerverkehrsabgabe, BAZG, 2024), which gives companies such as Hugelshofer Logistik AG economic advantages, especially on long routes. From a cost perspective, e-trucks therefore make economic sense, even more so on long distances.

Finally, the **expansion of ESG reporting obligations** should also be seen as a push factor. Regulatory requirements such as the Corporate Sustainability Reporting Directive (CSRD) (Corporate Sustainability Reporting Directive, European Commission, 2023) oblige companies to comprehensively disclose their sustainable activities. These reporting obligations are gradually being extended to other companies: From 2026, companies with more than 250 employees, a balance sheet total of more than €25 million and net sales of more than €50 million will have to submit sustainability reports, provided they meet at least two of these three criteria. These requirements not only increase transparency for investors and customers, but also increase the pressure on the entire supply chain, as the logistics provider's clients are also bound by these reporting obligations. At the same time, sustainability ratings will influence the financing conditions of banks in the future, which will have a direct impact on the refinancing options of logistics companies.

Pull factors

In addition to the largely externally influenced push factors, there are also numerous pull factors that provide incentives for the electrification of truck fleets. One of the main factors are the **tender and customer requirements**, who are increasingly demanding emission-free deliveries. These requirements affect all of the pioneers surveyed, both in their collaboration with industrial

customers and with customers from the public sector, where partially or completely emission-free transportation is increasingly being demanded in tenders, for example.

Another important pull factor is the **total cost of ownership (TCO)** - i.e. the total costs over the lifetime of a vehicle. In contrast to privately used cars, vehicles for logistics companies are assets that are used to achieve the business purpose and are therefore viewed much more from an economic perspective. The switch to e-trucks is economically attractive if the TCO per kilometer driven is lower than that of a diesel vehicle - this calculation is particularly important in low-margin logistics. The first use cases have already reached this tipping point, which is further accelerating electrification. A study by the P3 Group on TCO shows that electric trucks can already be 4 % cheaper than their diesel counterparts in regional transport and 11 % cheaper in long-distance transport ("Total Cost of Ownership of Battery-Electric Heavy-Duty Trucks vs. Diesel Trucks", P3 Group, 2024). This means that the decision to switch can be independent of government support mechanisms, contrary to the opinion expressed by Mr. Hähnke in chapter two. The savings in the total cost calculation are primarily due to lower energy and maintenance costs as well as reduced toll costs. Energy costs can also be further reduced through in-house electricity generation, for example by means of photovoltaic systems.

Setting up your own charging infrastructure creates the additional possibility of new sources of income. Logistics companies can open up their charging points to partners and external freight forwarders in order to finance their previous investments. This gives logistics companies an additional role beyond their actual core competencies and allows them to act as charge point operators.

This is particularly profitable if energy management is scaled up: Generating your own electricity through photovoltaic systems in combination with battery storage systems and the use of dynamic electricity prices can lead to a reduction in energy costs. Thinking further, it is possible to optimize the entire energy management system and achieve "energy excellence", i.e. maximum energy cost optimization.

Technological advances, such as optimized battery systems and more efficient powertrains for electric trucks, are leading to increased ranges. New standards such as megawatt charging are also enabling shorter charging times. These two advances mean that fewer public charging points and shorter charging stops are required, thus reducing dependence on public charging infrastructure, which leads to a noticeable reduction in the overall costs of e-trucks due to lower charging costs. Improved battery management at low ambient temperatures also increases the usability of the vehicles in a wide range of scenarios. The increasing industrialization of e-truck production will reduce purchase and leasing prices in the future and also better meet special customer requirements, such as the use of hydraulic systems. The industrialization of e-trucks can benefit from developments in the passenger car sector, especially in the battery area. For example, today's battery technologies are designed to be extremely robust so that only a small loss of capacity occurs even with high mileage ("Batteriealterung in der Praxis" (PKW), P3 Group, 2024). Combined with the OEMs' high guarantees on their electric powertrains, the low ageing rate ensures the residual value of electric trucks, meaning that leasing rates will also be adjusted to this stable battery ageing in the future.

In addition, the switch to e-trucks offers an opportunity to position the company as a **pioneer** in the field of sustainable logistics and to strengthen its corporate image. This can not only promote customer loyalty but also serve as a marketing tool for acquiring new customers.

In the short and medium term, P3 also sees the regulatory obligations of the AFIR (Alternative Fuels Infrastructure Regulation) of the European Union as an important pull factor, as this will ensure the expansion of an initial charging network for trucks on the main transport axes. This development is already being driven forward in Germany with the German network for truck fast-charging infrastructure (Startschuss für das Lkw-Schnellladenetz, Nationale Leitstelle, 2024).

Conclusion

Government subsidies and support programs play a subordinate role in the electrification of truck fleets. Although the companies surveyed regard these as important start-up funding, they would like to remain flexible in the long-term scaling of their fleets and manage their vehicles and charging infrastructure without restrictions. Nevertheless, the abrupt discontinuation of funding programs was perceived as negative, as this resulted in a loss of confidence in planning certainty.

The electrification of truck fleets in the logistics industry is driven by regulatory requirements as well as economic and customer incentives. While sustainability goals and emissions targets are currently the strongest push factors, pull factors such as the total cost of ownership and specific customer requirements are becoming increasingly important. The transition to zero-emission logistics is

therefore not just a question of external pressure, but also a strategic decision with long-term economic benefits.



5. Requirements of the logisticians to the stakeholders

The discussions with the four pioneers in the electrification of truck transport interviewed by P3 provided valuable insights. In order to accelerate the transformation towards sustainable logistics, key requirements for five key stakeholder groups were derived from the interviews: Politicians, grid operators, charging hardware manufacturers, vehicle OEMs and logistics customers.

Politicians: Create clear and long-term framework conditions

For many logistics companies, the lack of planning certainty is a major pain point. Abruptly ended funding programs, unclear forecasts on toll rates for zero-emission commercial vehicles and controversial political debates on electromobility make long-term decisions on vehicles and charging infrastructure difficult. Politicians should support the transport transition for logistics companies with clear and long-term framework conditions and present a predictable and reliable strategy for the future of logistics transport. This also includes pushing for the expansion of public charging infrastructure in order to ensure a comprehensive infrastructure supply for logistics companies outside of depots. An initial national charging network is being set up by means of tenders such as the German network for fast truck charging infrastructure. The development and expansion of the network by other players outside of the tender could be accelerated by speeding up the approval processes and simplifying building approval processes.

Grid operators: More efficient processes and better transparency

A key challenge when setting up your own charging infrastructure is the grid connection. Lengthy and complex processes and a lack of transparency in the event of capacity bottlenecks significantly delay installation. Legal requirements should be introduced for grid operators to set maximum processing times for grid connection requests. Early, digitally accessible information on available grid capacities at connection points could also facilitate the feasibility assessment.

Charging hardware manufacturers: Reliability and integration are key

A smooth charging process is crucial for the integration of electric commercial vehicles into everyday logistics operations. The charging hardware must function reliably, as the experiences of the logistics experts interviewed emphasize that long downtimes due to defective charging infrastructure are a significant disruptive factor. The compatibility of the charging hardware with existing energy and scheduling systems should also be ensured. It should be possible to smoothly integrate the time slots required for charging processes into the existing route planning, as well as the control and optimization of energy flows within the depot. In this way, the new role of the logistics provider as energy manager and charging station operator in the depot can be simplified.

Hardware manufacturers should also adapt their product range to the requirements of depots so that they can respond flexibly to the challenges faced by logistics companies. This means both ensuring continuously high charging performance and developing alternative hardware concepts specifically for depot applications. For example, ceiling or bridge mountings with suitable

cable management can also be used for charging processes in confined spaces at the loading ramp. Such an installation increases the flexibility of the layout for charging solutions in the depot and makes the charging infrastructure collision-proof.

In addition to their existing business area, manufacturers could offer comprehensive consulting services for logistics companies that facilitate the needs-based selection and implementation of hardware and thus simplify and improve the entry into electrification.

Vehicle OEMs: Confidence through comprehensive solutions

The high guaranteed mileages of batteries and powertrains have already given logistics companies confidence in the reliability of electric commercial vehicles. Nevertheless, further measures are needed to promote predictability and acceptance.

OEMs should at least maintain their mileage guarantees and provide reliable delivery commitments to enable logistics companies to plan better. At the same time, they could offer complete service packages which, in addition to vehicle deliveries, also include advice on charging infrastructure, operating concepts and financing solutions, as Daimler Trucks is aiming to do with TruckCharge, for example. Equally important, as Mr. Hähnke mentioned in chapter two, should be the development of knowledge for prospective e-truck drivers to ensure optimal driving behavior for e-trucks - also with regard to recuperation. Such complete service packages could make the transition much easier for logistics companies and at the same time increase acceptance of e-trucks.

Logistics customers: Partner in the transformation

The introduction of e-trucks at logistics companies is associated with higher initial costs than with diesel vehicles. This is mainly due to the higher acquisition costs of the vehicles and the installation of charging infrastructure. In order to promote the transformation of their logistics partners, logistics customers can provide support in various ways. One option would be to show a higher willingness to pay for sustainable transport services, although this is not considered very realistic in the low-margin logistics sector.

Alternatively, clients could offer logistics companies more planning security through longer-term purchase guarantees for transportation services. This would ensure that the profitability of the e-trucks can be achieved over the agreed terms. Another option for logistics customers would be to operate their own charging infrastructure and make it available to their transport partners. The installation of charging points at loading ramps or in car parks would be particularly useful. This would allow e-truck routes to be planned reliably and independently of public charging infrastructure or allow the vehicles to be charged during the loading time, eliminating delays caused by separate charging breaks. Furthermore the customers could tap into an additional source of income by selling charging power at their locations.

Conclusion

For a comprehensive implementation, politicians, manufacturers and other stakeholders must take the specific needs of the industry more into account. Close cooperation, practical solutions and long-term strategies are crucial to transforming logistics sustainably and achieving climate targets.

For logistics companies that are just starting to electrify their fleet, the interviewees were able to make recommendations for a successful transition based on their experience. For example, a key lever for reducing costs is to set up their own charging infrastructure, ideally in conjunction with generating their own electricity, particularly through photovoltaic systems. The combination of self-generation, **intelligent energy management systems** and flexible electricity purchasing could significantly reduce energy costs at the depot. In addition, battery buffer storage could help to make the self-generated or cheaply purchased electricity usable outside of production and tour times, for example at night.

The exchange and cooperation within the industry opens up further advantages: Partnerships between logistics companies or between logistics companies and their clients for the joint use of charging infrastructure can reduce dependence on public charging infrastructure and at the same time reduce charging costs.

The logistics experts interviewed also recommend contacting local network operators as early as possible in order to avoid long lead times for the required network connection.





6. P3 expert assessment

Sebastian Gieschen, partner and expert in the field of intelligent software solutions for logistics:

"The pioneers of the report show what energy excellence can look like. Everyone has understood that it will be important to manage energy flows themselves in the future. In addition to their actual core competencies, logistics companies will also become energy managers, i.e. operators of charging infrastructure for their own and external vehicles."

The resulting competitive advantage is based not only on hardware and vehicles, but increasingly also on intelligent software. The pioneers are already working on combining data from WMS³, RMS⁴ and EMS⁵ to enable intelligent charging planning, the optimization of electricity purchases and the allocation of 'charging slots' to carriers or partners using a reservation system."

³ Warehouse management system

⁴ Route management system

⁵ Energy management system

Bonjad Satvat, Senior Consultant and expert in the field of electric commercial vehicles and charging infrastructure:

"The interviews clearly showed that the electrification of trucks is a significantly economic consideration. As soon as the total cost calculation is positive in favor of electric powertrains, the fleet will be converted. The logistics partners show that this point has already been reached for some regional and long-distance transport applications. This will lead to a stronger surge in demand over the next few years."

The increased charging capacities and thus reduced charging times reinforce the challenges on the supply side already familiar from the passenger car market, such as network capacity restrictions and the reliability of the charging hardware. Additional requirements such as integration into dispatching systems show that the charging infrastructure for trucks has specific requirements. In-depth industry knowledge is required to adapt the product landscape accordingly."

7. Summary and outlook

The **P3 Energy Excellence /Trucks Report** points out that e-mobility has not only arrived in the logistics sector but that the industry is in the midst of a fundamental transformation.. The interview with Sascha Hähnke from REMONDIS shows that the technological development of e-trucks is progressing rapidly and that numerous areas of application are already being covered with e-trucks today without any restrictions. The interviews with the pioneers Elflein Holding GmbH, Hermes Germany GmbH, Hugelshofer Logistik AG and NOSTA Group also indicate that the motivation for the transition to sustainable logistics can be multifaceted: It ranges from intrinsic motivation, climate protection, and strengthening a pioneering role through to cost optimization.

In the first half of 2024, e-trucks accounted for just 1.6 % of new registrations ("New commercial vehicle registrations", ACEA, July 2024). This low market share will have to increase significantly in the coming years in light of national and European **sustainability targets** and the CO₂ reduction targets for truck OEMs. Sustainability targets not only affect logistics companies or OEMs directly but are also increasingly being passed on to the logistics sector by other industries. One example of this is the European Union's European Supply Chain Directive. This will oblige large companies from all sectors in Germany to fulfill due diligence obligations - including for the transport sector - from July 2026, even if they do not carry out the transport themselves (Corporate sustainability due diligence directive (CSDDD), BMUV, Mai 2024). Logistics companies that offer

sustainable transport solutions can thus further expand their competitive advantages.

Over the next few years, the attractiveness of using e-trucks on long journeys will continue to increase significantly as a result of **product developments**. For example, Daimler Truck and Volvo have announced new e-trucks with ranges of 500 km. The EU member states are also obliged by the regulatory requirements of the EU Alternative Fuels Infrastructure Regulation (AFIR) to promote the expansion of charging infrastructure on main transport routes for heavy goods vehicles (Alternative Fuels Infrastructure Regulation, European Commission, 2023). These two development trends thus create an essential basis for electrification, including in long-distance transport. In addition to technological advances, the ongoing **industrialization of e-truck production**, combined with scaling effects and falling battery costs, will further reduce the acquisition costs of e-trucks in the future. This will increase their cost-effectiveness compared to conventional diesel vehicles in terms of total cost of ownership (TCO). A positive TCO is a key prerequisite for the electrification of the mass market in logistics transport. Initial use cases are already showing cost benefits that open up potential for broader electrification and could make new areas of application economically attractive in the future.

Whether and how electrification can be implemented in individual depots depends largely on the **expansion of the electricity grids**. Grid bottlenecks could prevent the development of sufficient charging infrastructure, especially if large parts of the fleets are electrified. Solutions such as intelligent energy management systems and self-generation through photovoltaic systems will

become increasingly important. Logistics depots could thus not only cover their own requirements, but also act in a grid-friendly manner through controlled charging management. This integration of logistics depots into the energy market is one aspect of the emerging new roles of logistics companies resulting from the comprehensive electrification of fleets. The self-generation and marketing of electricity, including participation in the electricity and capacity market, will also pose a challenge. Some logistics companies will also take on the role of charging infrastructure operators and tap into the potential for additional revenue by selling electricity to subcontractors or external vehicles. A decisive factor here will be that logistics companies are supported in these new roles by operator- and user-friendly product and software solutions, for example to make energy management at their locations more efficient or to smoothly carry out the billing of charging processes for third-party vehicles. Suitable full-service offers for charging infrastructure with the right software and energy management can reduce the complexity for logistics companies.

In the coming years, the electrification of the logistics sector will also increasingly influence the **used truck market**. In particular, similar to the used car market, the emergence of the first lease returns could lead to uncertainties regarding the battery condition (state of health) and the resulting residual values. However, advances in battery management and the development of precise analysis and diagnostic methods offer the potential to minimize these uncertainties. Such an improvement in transparency as well as long term guarantees from truck OEMs on the electric powertrain could make a significant contribution to the stable development of the secondary market for e-trucks and also ensure more attractive leasing rates in the medium term.

The companies surveyed by P3 are convinced that early electrification will pay off and are optimistic about upcoming developments. The logistics industry shows an impressive openness to exchange and cooperation, as a successful transition to sustainable powertrains can only be achieved together. The consensus is clear: early dialog between all parties involved - from network operators and hardware manufacturers to logistics subcontractors - is the key to successful electrification. This willingness to work together not only promotes the transformation process, but also creates innovative and forward-looking partnerships that will have a lasting impact on the industry.



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About the P3 Energy Excellence Report

The **P3 Energy Excellence Report** is a series of reports on the topic of e-mobility in logistics. While this first edition focused on the electrification experiences of logistics companies with mainly heavy trucks, further reports will also shed light on other perspectives. These include, for example, the stakeholders listed in chapter five: Logistics customers, network operators, charging hardware manufacturers, vehicle OEMs and policymakers. In addition, innovative hardware and software solutions, processes and system integration could also be topics that are highlighted in future **P3 Energy Excellence Reports**.

Cooperation

Are you a logistics company or one of the listed stakeholders and would like to participate in the next P3 Energy Excellence Report 2025? Feel free to contact P3. We look forward to hearing from you!



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About P3

The P3 Group is a leading international consulting and engineering company with a growing team of over 1,800 experts in various industries. Since its foundation in 1996, P3 has supported its clients in the transformation of business processes, technological innovations and software solutions.

With a wide-ranging portfolio of services and solutions for various industries, P3 is excellently positioned in both the automotive and energy sectors, including e-mobility.

As part of this, P3 also develops state-of-the-art software solutions for customers. To seamlessly digitize and optimize business processes, P3 has developed a wide range of software solutions - including various products for logistics companies.

P3's software products



Fleet & Delivery



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