

DENKFABIK



NEW IDEAS FOR TOMORROW'S TRANSPORT

FEEL

ELECTRIC

Actively shaping the future

+ BEING LESS DEPENDENT

Energy self-sufficient thanks to PV: Hauliers go their own way
Page 08

+ GET ON AND RIDE

A conversation in the bumper car with haulier Hannes Voigt.
Page 24

+ CARRYING ON THE SPIRIT OF INNOVATION

Generation change at Ansorte Logistik
Page 30

WHAT ELEC TRIFIES YOU?



The Corona pandemic with its drastic restrictions showed how important social interaction is to people. While some only missed a coffee with good friends, others longed for the really big events. Psychologically speaking, it's no wonder: collective experiences create a sense of community and within no time you're right in the middle of a social hustle and bustle.

According to a survey, the most popular events in Germany are rock and pop concerts with a good 40 percent, followed by musicals with around 35 percent. In third place are stadium visits to the First and Second football national league just under 26 percent, closely followed by large folk festivals such as the Oktoberfest and other outstanding sporting events such as the Olympic Games and World Championships. Around 10 percent of Germans appreciate classical music festivals, film festivals and jazz festivals.

Source: [statista.com](https://www.statista.com)

Dear readers

Energy transition—the changeover to renewable energies—is intended to combine security of supply, environmental protection and economic success. In transport and logistics, we can contribute a lot to this and profit from it as an industry! You can discover solutions that bring the topic onto the road in this magazine: We show what the use of all technical possibilities, such as the electrically driven axle, can mean for the entire trailer ecosystem. We introduce hauliers who take energy generation into their own hands and make themselves energy self-sufficient as a business through photovoltaics and other sustainable technology. We discuss with entrepreneurs what prospects they see for propulsion by electricity or hydrogen. We show how the Krone Commercial Vehicle Group, together with innovative partners such as Trailer Dynamics, is making history in the field of electromobility in the commercial vehicle sector. And we explain the power of digital tools to make transport more environmentally friendly, efficient and economical.

The topical theme of this issue is “Feel Electric”: The industry is electrified, literally. The pressure to save CO₂ and to get goods from A to B in a more climate-friendly way is high. Many solutions for this still have to be found, many questions are still open: What can the path to complete electrification of commercial vehicles look like? Where does battery technology stand? And how can entrepreneurs integrate the available technologies into their fleets? We will find answers to these questions together with you.






Dr. Stefan Binnewies,
Chief Operating Officer
(COO), Management
Board of Krone Holding

Let this magazine inspire you!

Yours, Stefan Binnewies

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TITLE: KRONE PHOTOS: ADOBE STOCK/VALERIA KRONE

#05

Focus

Feel electric

02 Food for thought

03 Editorial

06 Blue Notes

+ COVER STORY

08 Charged-up

Being independent of the prices and availability of energy? The first hauliers are going their own way to supply themselves with electricity.

11 The "grey brick" turns colourful

Logistics real estate is discarding its bad image, by among other things employing good design, climate-friendly construction and green roofing. Thanks to photovoltaics and the like, they can even become energy power plants.

18 Which one has the most power?

An overview of current battery technology solutions and their potential.

20 Inquired

Professor Achim Kampker from the Chair of Production Engineering of E-Mobility Components (PEM) at RWTH Aachen University explains the strengths and weaknesses of batteries.



14 Two e-trucks is just the beginning

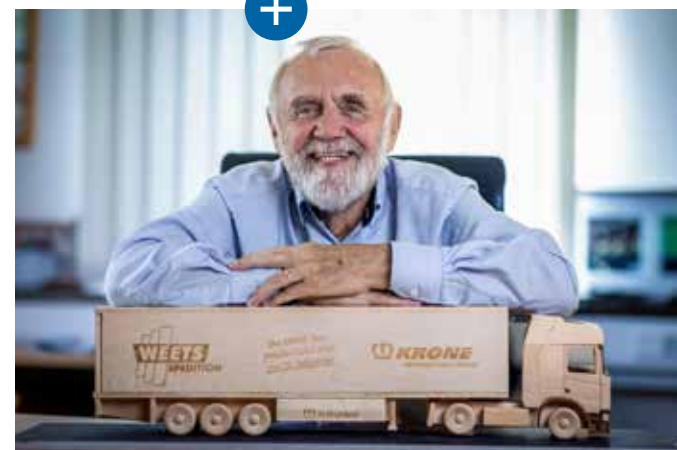
The Austrian transport company **Hofmann & Neffe** is exploring whether electric mobility fits into its daily routine. Two fully electric tractor units are the first of these.

17 Stage

The Ecosystem Trailer

21 Trucks for the car manufacturer

The VW plant in Emden, East Frisia, is to become a purely electric plant. The **Weets haulage company** transports batteries for the company's vehicles.



24 Heart of the matter

Frank Albers, Managing Director Sales and Marketing of Fahrzeugwerk Bernard Krone GmbH & Co. KG, met Hannes Voigt, Managing Partner of **Herbert Voigt GmbH & Co. KG**, in the bumper car at the Funfair Hamburger Sommerdom to talk about electromobility.



29 Impulses

More inspiration, tips and thoughts

30 Backstage

A new generation takes over at Ansoerge Logistik: Benedikt Roßmann succeeds Wolfgang Thoma as Managing Director. How does one pass on innovative strength?

32 Cold Passion

The demands on transport are increasing—the Nabuurs Group is responding to this, for example by greening its fleet and aiming to serve all customers in zero-emission zones by 2030.

35 Big Picture

At the „Mission Record Run“, the eTrailer from Krone and Trailer Dynamics showed how much power it can produce.

36 Let ideas grow

Simone Lode, Managing Director of HHLA Next, accompanies logistics business models from concept to independence.



39 Column

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Blue Notes

News from the world of Krone

ANNIVERSARY
50
years



Successful concept of the Coil Liner

50 years of the Coil Liner: At the IAA 1973 in Frankfurt, Krone presented this highly specialised vehicle—only two years after starting the production of commercial vehicles at the Werlte site. The trailer was designed for **transporting steel rolls** (coils) in the automotive industry: A special trough enables the safe transport of the coils—weighing several tonnes. The IAA premiere, 50 years ago, was a complete success and today Krone offers four basic types of vehicles: the Standard Coil Liner for up to 30 tonnes payload, the Coil Liner Ultra in lightweight construction with cross beams, the even lighter and shorter Coil Liner Compact, also up to 30 tonnes payload, and the Mega Liner Coil in cross beam construction. The Coil Liner Compact is secured with the Vario Coil System, for flexible use along the entire length of the coil trough. ↪

Partnership with the TIP Group

A partnership between Krone Trailer and the TIP Group enables instant, seamless data transfer from Krone's advanced telematics hardware to TIP Trailer Telematics applications. Thanks to this integrated solution, trailer data is automatically transferred between the two systems. Krone's main aim is to meet the requirements of **digital transformation**: Data standardisation, system interoperability and open interfaces. It is important to TIP Group to provide its customers and other stakeholders with meaningful data and thus offer a correspondingly good service. Krone's innovative telematics solution provides real-time analysis of trailer data, which is essential for offering connected services. ↪



New generation of tyres

With **Krone Trusted Tyre Comfort (KT231)**, a new generation of tyres "powered by Germany" has been on the market since summer 2023: with a load capacity of five tonnes, a robust underbody, a reinforced carcass and a widened tread, as well as a cost advantage of up to 35 percent. The rolling resistance label "B" stands for low rolling resistance, and at the same time the Krone KT231 is characterised by short braking distances and long durability. The tread depth of 18 millimetres ensures that the performance characteristics remain at a high level throughout the entire service life. The tyres are suitable for regional and long-distance traffic as well as for general distribution. They also demonstrate high performance potential in winter conditions. Krone Trusted Tyre Comfort represents a successful concept: The models introduced in 2012 have proven themselves, among other things, with an outstandingly low complaint rate of just 0.007 percent. ↪



Further growth

The Krone plant in **Tire, Turkey**, celebrates its **tenth anniversary** in 2023. In addition to Turkey itself, the site supplies 31 other countries in Europe, the Middle and Far East, Africa and South America. In 2022, 5,500 trailers were produced, in 2023 this figure is set to rise to 7,000 units and then 10,000 in 2026—in addition to the Profi Liner and Mega Liner platform semi-trailers, the dedicated Box Liner container chassis will also be produced. Krone has completely modernised its 5,000-square-metre production facility this year and has also commissioned a new 4,800-square-metre chassis production plant in May. ↪

PHOTOS: KRONE, J.P. BACHEM VERLAG

Logistics hidden object book

Discovering the world of logistics is highly exciting: this is also shown in this **colourfully illustrated 'hidden object' book**, which traces the supply chains behind things like smartphones from China and supermarket foods. Among other things, it follows the path of a teddy bear from production to the children's room. There is a lot for the young readers to see: from the point of order to final production, the various transport routes by ship, train, truck and plane, to delivery into the home. Little and big fans of the world of logistics will find many funny details and learn about many different professions and aspects of logistics. (Bachem-Verlag, 8 cardboard double pages, 14.95 euros) ↪



Charged-up

Energy costs are rising, supply is sometimes unstable: many haulage companies want to become independent of grid operators and public infrastructure and **are going their own way.**

PHOTOS: FREEPIK.COM/WIRESTOCK, SEIFERT LOGISTICS

A photovoltaic system that can supply up to 5.5 megawatt-peak electricity, a combined heat and power unit for heat supply and a modern ventilation system for controlled, energy-saving air exchange via heated-cooling ceilings: The equipment of the new logistics centre, which the Seifert Logistics Group inaugurated at the end of 2022, is consistently sustainable. With the building, which is within sight of the A 8 motorway just before the Ulm-West junction, Chairman of the Advisory Board Harry Seifert 2022 has fulfilled a lifelong dream. And it contributes to keeping the Seifert Logistics Group fit for the future—because the company wants to become energy self-sufficient: The photovoltaic system is to be used to supply the new building and to charge the e-trucks in the fleet. It is connected to a transformer station through which the electricity generated can be transported from the municipal utilities to a transformer station. Harry Seifert is convinced: “If it were technically and politically possible, we could use this energy for our own locations and be completely self-sufficient.”

Second “Eco Performance Award”

The Seifert Logistics Group has won the “Eco Performance Award” in 2023—for the second time. Ten years previously, the company had already received the award. The jury was convinced by the holistic sustainability strategy, which is “firmly anchored in the corporate strategy”. The new logistics center tells the story with its well thought-out design: the 50,000 square metres that have been created here for warehouses and offices have been planned and implemented in a particularly climate-friendly way. For example, the halls are also equipped with underfloor heating and LED light control. And the building is designed for future developments: The ramps can be controlled digitally and electric trucks can be charged.

Seifert’s personal motivation for all these measures is to minimise the CO₂ footprint

and maintain the Seifert Logistics Group as a modern company. The opening of the new logistics center at the headquarters was celebrated on the 75th anniversary of the company. “It is a very good feeling to be optimally positioned right now,” says the chairman of the advisory board. “Now we can continue to expand and move on.” The well-being of the employees was also considered in the new building: the office area is designed as a modern open-space world, with flexible, ergonomic workstations and communication areas for meetings and the exchange of ideas. There is also the company restaurant “Franzl” and an in-house gym where the team can train free of charge.

“The balance must be right”

Technologically, Seifert is open to the path towards energy self-sufficiency: they are working on their own production of green hydrogen to be able to use it to power vehicles. “As an entrepreneur, I always want to move forward and use new technologies. But it has to pay off, the balance sheet has to be right. At the moment, electric tractor units still cost three to four times as much as diesel-powered ones—and if the subsidies are removed, it doesn’t pay off. That’s why I keep my options open, look at e-fuels, for example, and can always react flexibly and dynamically.” →

+ HARRY SEIFERT

Harry Seifert joined the family business in 1976, which today has around 4,000 employees in the Seifert Logistics Group. He rejuvenated the management team and handed over the management of the company to his companion Axel Frey at the beginning of 2022. Since then he has acted as Chairman of the Advisory Board.



The new warehouse of the Seifert Logistics Group offers climate protection and energy efficiency with photovoltaic systems. Among other things, a modern company restaurant and a fitness studio are available for the employees.



Dr. Jörg Mosolf, CEO and managing director of the Mosolf Group, is also aiming for energy self-sufficiency: “We want to make ourselves less dependent on the volatility of the markets in order to secure our energy supply.” He has already installed an 18-megawatt photovoltaic plant in Rackwitz near Leipzig, with 30 megawatts to follow in Kippenheim. A group-wide plan sets a target of 120 megawatts in total. “The big challenge is the connections to the energy suppliers,” says Mosolf. “And the seasonal fluctuations: At the moment, according to the plans, we would be assured of being able to supply ourselves with our own electricity from spring to autumn. In winter we still have to buy in.”

Calculable costs and secure supply

In addition to independence, the most important thing for Mosolf is that the costs become calculable—even with a larger e-truck fleet. “We are building this up piece by piece. Even though we are not yet sure what proportion of our fleet will be electrically powered vehicles, it is clear

+ DR. JÖRG MOSOLF

Dr. Jörg Mosolf is a trained forwarding merchant, studied in St. Gallen and earned his doctorate in Prague. He has been managing partner of the Mosolf Group since 2002. In April 2018, he became President of the German Transport Forum (DVF).



that some will run on electricity.” He and his team had their first thoughts about going in the direction of energy self-sufficiency long before the outbreak of the Ukraine war. “This event added the aspect of securing our supply; before that, our plans were primarily strategic. And part of that is that we want to be open to technology. That is why we are investing in renewable energies: In addition to solar power, we will also use wind energy, for example.”

Mosolf has put a lot of resources into the topic: “We have founded a separate department for it and bought in experts. Because in order to go down this path, you have to understand grid charges and energy suppliers, among other things, and acquire a lot of knowledge. But since we are pioneers, we also have a correspondingly steep learning curve and at the end we have the competence in-house. It’s a rocky road, but we expect it to pay off.” Turning electricity production into a business and selling surplus energy was never on Mosolf’s mind. “We are open to partnerships, but trading electricity is not our motivation.”

Establishing the logistics industry as a provider

Establishing the logistics industry as a provider—that was the aim of Kuno Neumeier, spokesman for the logistics real estate section of the Bundesvereinigung Logistik e.V. (BVL) and CEO of the Loginvest Group, when he launched the “Power of Logistics” initiative in October. After all, the logistics properties newly built between 2012 and 2022 alone, offer around 50 million square metres of roof space. Photovoltaic systems could be installed on about two-thirds of them, generating up to 2.5 terawatt hours →

PHOTOS: SEIFERT LOGISTICS, MOSOLF

Change of perspective

Developers of logistics real estate are rebutting criticism with **smart upgrades**: modern warehouses offer real added value.

The “grey brick” turns colourful

For a long time, the image of logistics real estate was not a good one: as large, usually not very attractive blocks, they take up valuable space but create few jobs. For this reason, logistics settlements often have a bad reaction from municipalities when they ask for space. But many developers and projects are now successfully showing that things can be done differently.

The warehouse is built in a particularly climate-friendly way and becomes an energy power plant with photovoltaics on the roof. Integrated office space is available for the employees. The internal spaces themselves are attractively designed and win design awards. Mixed settlements in cities offer public areas for leisure, sports and entertainment, for example when a bouldering hall has set up shop next door to an industrial plant. Honey is produced in beehives; green spaces create habitats for plants and animals as well as pleasant places to stay for the people who work in the buildings or live nearby. The settlements open up to everyone in the communities: Sometimes the canteen of a company can be visited freely, sometimes the charging stations at car parks for private cars may be used at night. What all these ideas have in common: Instead of being put down for their “grey image” and despairing, the sector has gone on the offensive, is changing and is setting its own positive agenda. This should increase acceptance and ensure long-term success. Because one thing is certain: without these areas, it won't work!

ILLUSTRATION: ADOBE STOCK/KEKO-KA, A DOBESTOCK/OLEKSANDR ROZHKOY

Facts & Figures

50 MILLION

square metres of roof space have been created on newly built logistics properties between 2012 and 2022.

The savings potential is

960,000 tonnes of CO₂.

This corresponds to the electricity demand of about

800.000 households.

On around 30 million square metres of roof surface, **2,5 terawatt hours** of solar electricity could be generated.

Source: Power of Logistics

of solar power, which would cover the annual electricity needs of 800,000 households. This would save 960,000 tonnes of CO₂ every year. An impressive calculation—"Power of Logistics" has taken up the cause of raising this potential.

To this end, the stakeholders of the logistics real estate industry—logistics service providers, developers of logistics real estate, energy companies and the Jade-Weser Port—have joined forces in the initiative. Together they want to promote the production and use of renewable energies. Among other things, they are looking for ways to support companies in the installation of photovoltaic systems. "These installations are complex projects for which you have to deal with statics, roof condition and grid connection," explains Tilo Nahrath, Managing Director of RE.source Projects GmbH and spokesperson for the initiative. The group develops checklists and instructions to help make such projects easier to accomplish.

+ RICHARD SCHNEIDER

Richard Schneider is managing director of the logistics construction company fabrikon GmbH. Previously, the trained bricklayer and graduate engineer worked for the construction company Goldbeck for 18 years, most recently as managing director of Goldbeck Süd GmbH.



+ TILO NAHRATH

Tilo Nahrath is managing director of RE.source Projects GmbH, which develops solar projects and markets the locally generated solar power. He also works as a consultant in his own company, which assists companies with complex restructuring processes in the Renewable Energy & Real Estate sector, among other things.



According to Nahrath, the investment is worthwhile in any case: "You save electricity costs to a great extent and, above all, you also gain the security of knowing that you can then calculate the expenses well in advance."

Logistics spaces become "energy power plants"

"Power of Logistics" motivates people not only to use the electricity themselves, but also to turn logistics and production facilities into an "energy power plant"—with an energy mix: in addition to photovoltaic systems on roofs, wind turbines and combined heat and power plants could also provide green energy in business parks, for example. At the same time, the energy demand of the buildings should be optimised. This requires data on their consumption. "These are often not recorded accurately. And even if they can be read out digitally in modern projects,

PHOTOS: FABRIKON, RE.SOURCE, LOGIVEST

information about what happens in the buildings is usually missing—so we can't tell how the consumption of the respective use is," explains Richard Schneider. The managing director of Fabrikon GmbH, which as a general contractor realises the construction of logistics real estate, is also the spokesperson for "Power of Logistics".

Additional measuring devices could help to create a usable database. "One could then calculate the effect of lowering the room temperature in a given premises, for example, and make suitable recommendations," says Schneider. "To do this, however, you have to know what exactly is achieved by which measure." Furthermore, a standardisation of cabling and infrastructure is necessary. Then logistics companies could also position themselves in a completely new way vis-à-vis the municipalities and present themselves as energy suppliers: they would find it easier to get hold of attractive plots of land and could build even more "logistics power plants": a win-win situation for all involved.

"The relevance of the topics of energy supply and energy efficiency is shown by the

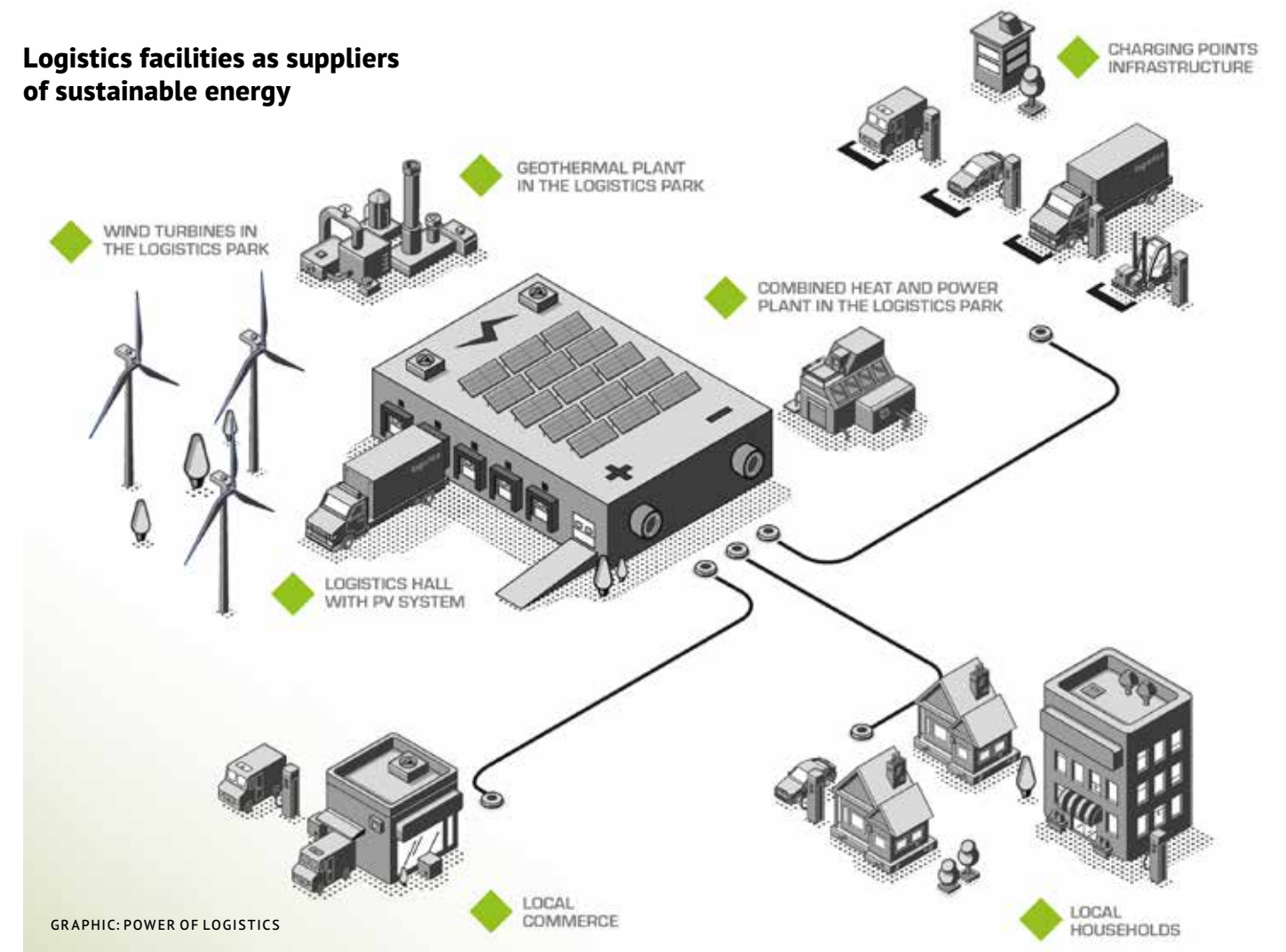
+ KUNO NEUMEIER

Kuno Neumeier is the founder and CEO of Logivest GmbH, a consulting company with a focus on logistics real estate and locations. He was previously managing director for medium-sized logistics service providers and part of the management team at Realogis, from 2006.



great popularity we are experiencing with Power of Logistics. When I think about the future idea of Power of Logistics, I see a municipal energy park that not only covers its own needs through integrated wind power and solar parks, geothermal energy and co, but also supplies the neighbouring municipality with electricity," says logistics real estate consultant Kuno Neumeier. ↪

Logistics facilities as suppliers of sustainable energy



GRAPHIC: POWER OF LOGISTICS



"We already have projects for up to 15 more e-trucks on the cards."
 Elisabeth Andrieux, Managing Director Hofmann & Neffe

The company has relied on Krone products for many years, especially on steel box swap bodies for food transport and on semi-trailers.

Two e-trucks is just the beginning

The transport company Hofmann & Neffe is focusing on **electromobility**: Two new all-electric tractor units in the fleet are laying the foundation for a low-emission fleet.

The Upper Austrian transport company Hofmann & Neffe relies on green energy - and independence from the public supply: in 2022, the photovoltaic system on the roofs of the company buildings was expanded on a large scale. At the end of 2023, the team will even commission its own transformer with a capacity of 1.5 megawatts, which on the one hand can feed the electricity from the photovoltaic system into the grid and on the other hand supply the electricity needed for the charging infrastructure for the e-trucks. Six charging points for e-trucks will be installed—two of them as Superchargers with 300 kilowatts. Therefore, everything is prepared for an increasingly low-emission fleet: two fully electric tractor units have recently been in use for the company—and they should only be the beginning. “We want to secure the stability of the grids ourselves,” explains Managing Director Elisabeth Andrieux, referring to the transformer facilities at the company site. “The public infrastructure has been poorly developed so far. Using our own charging stations, we can also charge our vehicles during the day and thus increase their range.”

Intense test drives

Andrieux and her team have been working intensively on the topic of alternative drive systems since the beginning of 2022. “It was clear to us that this was a good opportunity to accompany a change in our per se emissions-intensive industry.” Given the ranges that the company mainly serves, the choice was “electric”. The first all-electric tractor unit moved into Hofmann & Neffe in February 2023, followed by the second in July. Both were planned from the outset for specific customer operations, but were nevertheless tested intensively in other operations beforehand to gain experience along the route. “We already have projects

for up to 15 more e-trucks on the books,” says Elisabeth Andrieux. “Many customers are already asking about it and are willing to work together on new solutions. The timing for the purchase of more vehicles will depend on an appropriate funding landscape.”

Thus, the most important goal is first of all to gather their own experience with the technology. “We can only experience how the vehicles behave and prove themselves on our routes in everyday use. That will be interesting also for the vehicle manufacturers,” says the managing director. The topography of the country also plays a role. “Nevertheless, only practice will show whether the simulations of the vehicle manufacturers really reflect reality and what effects differences in gradients on the routes have on the range of the vehicles.” For example, it is decisive whether the vehicle is loaded or not on routes with strong climbs—and accordingly, whether it consumes more or less energy.

Significant player in Austria

Hofmann & Neffe is a family business. Elisabeth Andrieux took it over from her father in the fourth generation. Today, it employs around 220 people and its fleet comprises around 130 tractor units and 200 towed units—giving the company a significant size in the Austrian market. The industries it serves are diverse: from food to chemical products to building materials. It was through the transport of foodstuffs that the team got to know Krone. “We use the classic steel box swap bodies, where Krone is the number one in Europe, for dry goods,” says Paul Obernberger. Among other things, he is responsible for the technical area at Hofmann & Neffe and thus for the purchase of new vehicles. “Of course, we also have one or two semi-trailers with the Krone logo, for example single semi-trailers with steered axles—Krone is simply a reliable partner for us. In the past five years, we have purchased a lot of box bodies and are very satisfied with them.

Long-term customer relationships are important to the company: “We want to work together with our partners in a cooperative manner and be able to offer them additional →

"We have a great team who put a lot of heart and soul into their work."

ELISABETH ANDRIEUX



Together, the Hofmann & Neffe team puts a lot of heart and soul into its work.



services beyond pure transport,” explains Elisabeth Andrieux. The close cooperation has the advantage that the company knows the customers’ needs exactly and can respond to them fully. “In addition, our size allows us to be extremely flexible and if necessary, to provide replacement vehicles and staff, for example. And thanks to flat hierarchies, we maintain short decision-making channels.”

The broad-based vehicle fleet also contributes to flexibility: “We have vehicles with tanks, tarpaulins or the Krone swap bodies in our portfolio and can thus optimally support companies from the chemical sector, for example,” says Paul Obernberger. He has experienced how the company has grown with its customers: Obernberger has been working for Hofmann & Neffe for 39 years. For example, the company has been working with one of the world’s largest chemical wholesalers for even longer: “When I started here, we managed transport for this dealer on the free market. In the meantime, it has become a group for which we operate 19 vehicles throughout Austria that carry liquid and solid materials—from food additives to solvents. We have grown with it over the decades.”

Growing with customers

It was a similar story with a steel customer: “We grew with them, but also shrank in 2008 and were able to grow stronger again together after the crisis. Such customer relationships over decades are really no longer a matter of course today. But we cultivate it—in the opposite direction as well: we are also loyal to our suppliers.”

Customers benefit from stable supply security: “We always offer the right vehicle, in the best case with the exact driver. Of course, we face the challenge of finding well-qualified personnel just like all our competitors, but we are quite well positioned there, too.”

The personal touch is also important: “We have a great team that puts a lot of heart and soul into their work,” says Elisabeth Andrieux. “Every entrepreneur might say that about her people—but I can really attest to it for our staff. Everyone at our company has a genuine interest in ensuring that all tasks are completed in the best possible way. We find solutions to all the challenges we face all day long in this vibrant industry.” Paul Obernberger affirms: “We are there for our customers around the clock. I personally know very well that this is how it is lived: you are also sometimes woken up in the middle of the night if there is a problem. That’s part of it and drives the passion for our profession—then we go out, solve the problem and everything is running again.”

“We have vehicles with tanks, tarpaulins or the Krone swap bodies in the portfolio.”

**PAUL OBERNBERGER,
AUTHORIZED SIGNATORY**

PHOTOS: FOTOSTUDIO EDER

Brand new opportunities

Via the electrically driven axle, with which Trailer Dynamics turns the trailer into an **energy generator**, other components in the trailer can also be constantly supplied with power. Maximilian Birle, Head of Sales & Service Telematics and Digital Services at Krone, explains what this means for the trailer ecosystem.

What role does the trailer play in transport and what technologies does Krone support it with?

The trailer is an independent unit that operates in a very large ecosystem and assumes an enormously important function within it: It carries the goods. Firstly, it is extremely helpful to know its location and condition—technical solutions can provide us with this information. We therefore equip the trailer with 3D telematics, which provides the location of the vehicle as a basic 1D function. Furthermore, it can calculate when the trailer will arrive at its destination, and all upstream and downstream participants in the ecosystem can be better controlled and planned via this. Secondly, the temperatures of refrigerated goods, for example, need to be monitored: If the temperature report is passed on automatically, the subsequent processes can be optimally controlled. Thirdly, we use “Smart Capacity” to look inside the trailer: this system, developed by Krone and its partners, can provide information on whether the goods are still on board, remain secured, or have been damaged. And it can help to make the best possible use of the trailer’s capacity and avoid empty runs.

All this needs electricity, but where does it come from?

Directly from the truck—if the trailer is connected to it. Until now, a trailer has been a “non-power asset”—a unit that does not generate or carry any energy itself. It was clear to us that if we could change this, new possibilities would open up. The

concept of Trailer Dynamics, in which an electrically driven axle with battery is installed in the trailer, opens this path precisely.

Because it electrifies the trailer?

Yes, the system provides constant power and voltage and with it we can operate all sensors, actuators and components with a new approach: for example, keeping the camera live all the time or constantly sending the GPS position. Today, we are still careful with this and consider very carefully how often this information is passed on, because it consumes a given amount of energy each time.

What does this mean for the trailer ecosystem?

Electrification allows functions on and in the trailer that were previously not possible. For example, a wide range of security situations can be presented: Door sensors, for example are permanently monitored and every access can be detected.

... at the expense of range?

That is negligible, the smart functions usually need very little power. What is more important for the use of the technology is the constancy of the energy supply.

What does that enable for your work as an innovation driver?

We can think much further ahead. The limitations from reduced energy supply no longer restrict our planning. Therefore, we can act a lot more independently, put a lot more power into such systems and allow ourselves, to have, for example, artificial intelligence on board, which would otherwise simply not have been feasible. Energy-intensive evaluation of the systems is already possible within the vehicle and is thus available much faster for our customers. We are currently testing many options and will probably be able to publish the first results next year.

What does all this do to the trailer?

It becomes more reliable and even safer to operate. The electrified trailer enables our customers to operate the vehicle in a more environmentally friendly way, saves fuel, emissions and costs—and in addition, completely new digital applications become feasible.

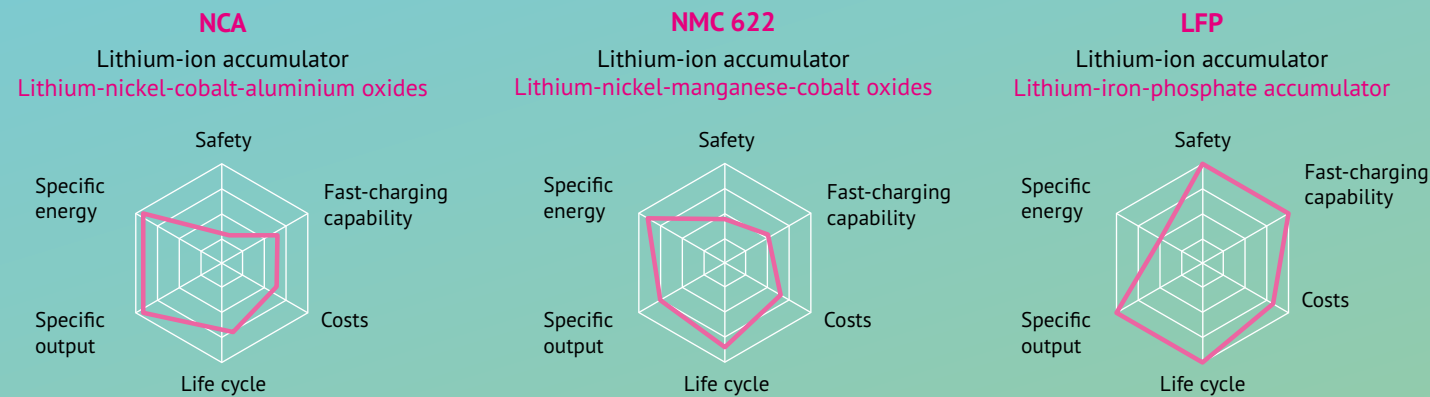


PHOTO: KRONE

Which one has the most power?

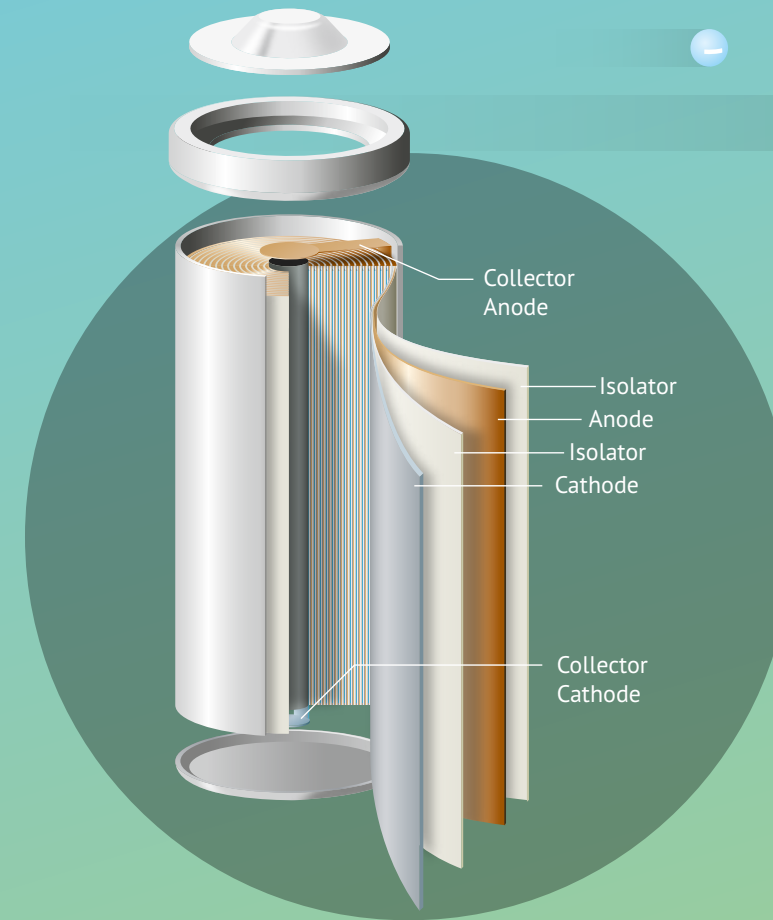
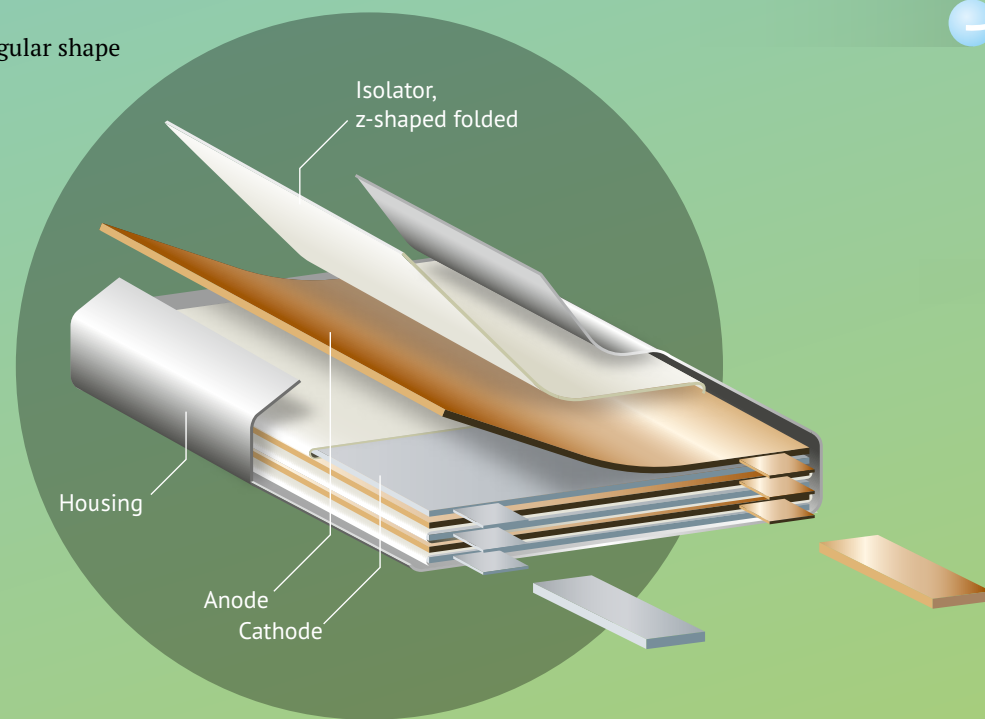
Battery technology is developing so rapidly that electromobility can maintain its place among the most relevant alternative drives—even if there is still a lot of potential for optimisation in terms of range, safety, charging times, costs, service life and raw materials. Lithium-ion cells are currently the predominant technology, packaged in different formats: rectangular (pouch), round cell and prismatic cell.

Cell chemistry
Cell chemistry is a central building block of a battery and is defined depending on the application.



Pouch Cell

- + requires the fewest components and materials
- variable design/variable formats
- efficient use of space due to rectangular shape
- good surface-to-volume ratio
- efficient temperature control
- unstable housing
- swelling under pressure
- sealing very complex
- stacking challenges

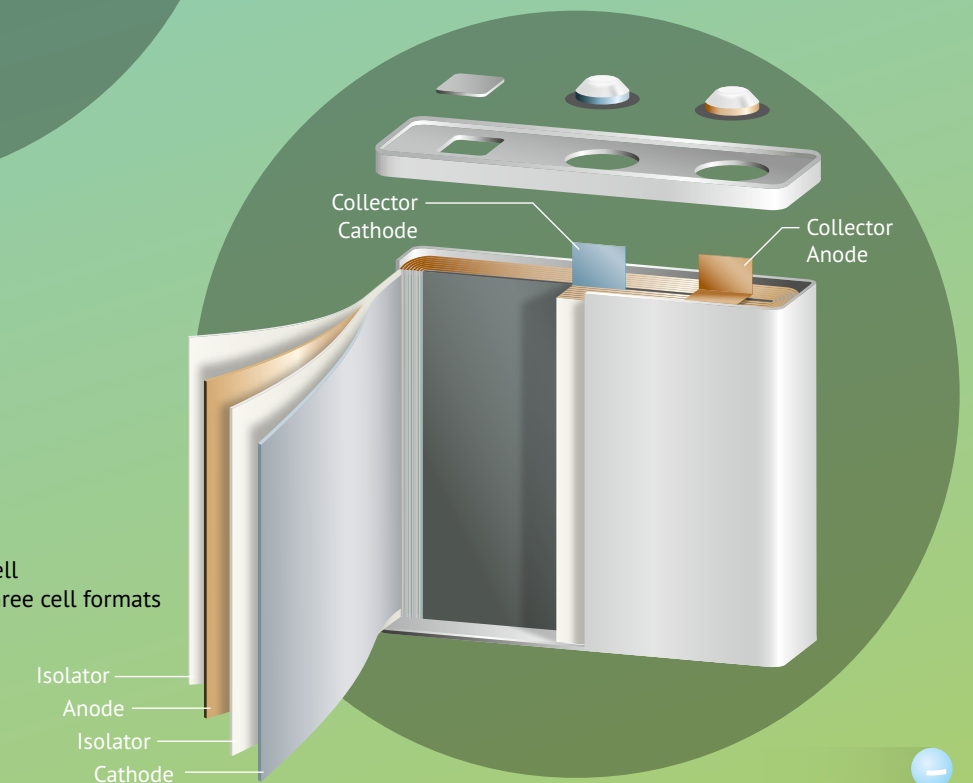


Round cell

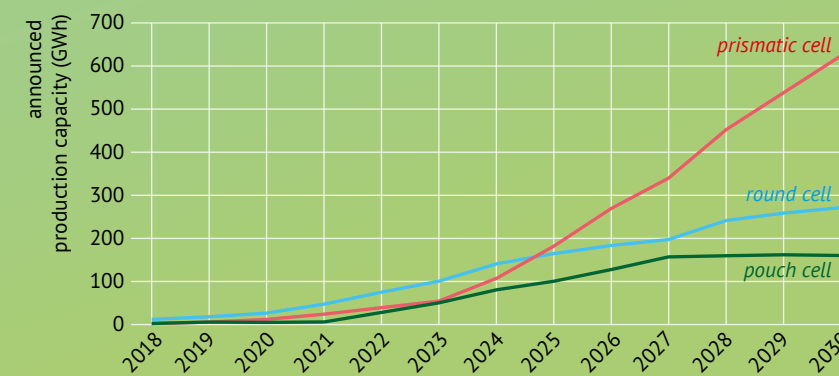
- + currently highest energy density at cell level
- high density and stiffness
- mechanically robust
- resistant to internal pressure due to degassing
- extensive experience in the production process
- low manufacturing costs
- low heat dissipation/complex cooling channels
- heat-conducting surface
- inefficient use of space
- low packing density at module level

Prismatic cell

- + efficient packing of the cell composite
- high density and stiffness
- high volume compared to the surface
- heat-conducting surface
- less variety than pouch cell
- lower mechanical stability than round cell
- currently lowest energy density of the three cell formats



SOURCE: PEM RWTH AACHEN ILLUSTRATOR: ARTEGRAPH/RAINER GÖTZE



Market share

The choice of format is a matter of faith. All formats have advantages and disadvantages and must be considered specifically in terms of their requirements. Currently, the prismatic cell still has the largest market share, but some manufacturers are also switching to the cylindrical cell, so the market share will probably shift there. Technological developments and innovation can strongly influence the relative share of the different cell formats in the market. However, there is no evidence of a dominant or strictly preferred format.

Finding collaborative solutions

Achim Kampker is a professor at the Faculty of Mechanical Engineering at RWTH Aachen University, where he founded the Chair for Production Engineering of E-Mobility Components (PEM). In this interview he explains the strengths and weaknesses of batteries.

Which battery technology is currently the most important?

Achim Kampker: Lithium-ion technology is well established and can currently be considered the standard technology: It can be used in multiple applications. In parallel, there are exciting developments in solid-state batteries and sodium-ion batteries—they could replace lithium-ion batteries in whole or part. At the same time, great technological leaps are still possible with the latter: while optimization of around ten per cent can be generated with internal combustion engines, we are talking about improvements of 30, 40 per cent or even more with lithium-ion technology—several times in a row. This shows that we are still at the very beginning of development.

How do such developments become possible?

How do such developments become reality? There is a lot of investment in battery technology worldwide, and when more people are involved with a topic, more ideas usually come up. For example, the power density is increased when more energy is packed into a cell and thus the installation space can be used with increasing efficiency. At the same time, developments are not always driven purely by technology: Sodium, for example, is much easier to obtain as a raw material and is available in larger quantities than lithium.

What are you mainly researching?

On process technology - the procedures with which batteries are produced and assembled. I am convinced that we can score points as a centre through integrated product and process planning. It can generate synergies and perhaps also give Germany an edge over Asia—again as a centre of technology.

Electromobility has long been seen as an interim solution. How do you see that?

From my point of view, this view has largely dissipated because we have already massively reduced the challenges of “low range” and “long charging times”. And also, in a few years, I don’t think anyone will have to talk about a lack of charging infrastructure.

Interchangeable systems have not yet become established. Do you still see a role for this?

I don’t consider them to be purposeful because the technology surrounding fast charging is developing so rapidly. I can only imagine them for closed systems, i.e. fixed logistics circuits. Alternating systems require a very high degree of standardisation, and you have to keep a lot of batteries on hand, which causes high costs.

Entrepreneurs have to weigh investment decisions very carefully. What would you advise in terms of batteries?

The current lithium-ion technology will be around for the next ten or 20 years. So, it makes sense to look at it and invest in it. Other technologies will come along, but they are not yet fully developed, therefore I see them as complimentary. In heavy-duty vehicles, synthetic fuels, hydrogen and battery-electric drives will coexist and complement each other.

What advice would you give to freight forwarders at the moment?

We have to get more active. Playing technologies off against each other is not expedient. And you shouldn’t wait for politicians to create the right framework conditions, but become active yourself. I think networks are very important: sustainability must also make economic sense, and I think we can find solutions together. ↩

+ ABOUT ACHIM KAMPKER

Achim Kampker, born in 1976, is a university professor at the Faculty of Mechanical Engineering at RWTH Aachen University, where he is chair of the **Production Engineering of E-Mobility Components (PEM)** which he founded in 2014. In 2010 he co-founded StreetScooter GmbH, which developed the Streetscooter electric vehicle.



Trucks for the car manufacturer

The fate of the city of Emden is closely linked to Volkswagen. The plant in East Frisia is to become a purely electric factory. The **Weets haulage company** already transports batteries for the company’s vehicles—and not always without complications.



“All containers that arrive in Bremerhaven, Hamburg or Wilhelmshaven for VW pass through our hands.”

Jakob Weets, Managing Director Spedition Weets

Emden's economy is dominated by a monoculture. Ever since the first Beetle rolled off the production line in East Frisia at the end of 1964, the fate of the city has been closely linked to the Volkswagen Group. More than half of the 34,000 jobs in Emden can be traced back to VW. The car manufacturer also plays a major role in Jakob Weets' company. "Fifty per cent of our business is connected to VW," says the 72-year-old. Weets started his own business with one truck almost 38 years ago. For more than 35 years, the freight forwarder has handled overseas transport for the Wolfsburg-based company.

"And suddenly we are transporting twelve 40-foot containers a week."

JAKOB WEETS

"All containers that arrive in Bremerhaven, Hamburg or Wilhelmshaven for VW pass through our hands," the managing director reports. This connects Weets closely with Volkswagen, but unlike the city, the fate of the company does not depend on the Emden plant.

At the age of 72, Weets still sits in his own office in Emden's industrial harbour. On an asphalted surface in front of the window, new cars are waiting to be shipped. Behind him hang pictures from the early days of his company. The trucks have become far more modern, and Weets' full beard is now greyer. While others have long since retired, he has switched to part-time work, he jokes: "Twelve hours is enough, too." His three children have already joined the business. Each of them looks after his own area. In addition to transport and storage for VW and other customers, Weets has also been assembling individual components for the car manufacturer for several years.

Battery insurance is more complicated

For some years now, a special form of goods has been passing through the hands of its employees. It is stored in solid grey steel racks inside the blue trailers: battery modules that are installed in the group's hybrid cars. The freight is not entirely uncomplicated. Weets noticed this above all when he not only moved the batteries, but also stored them temporarily. Until recently, there were about 2,000 modules in one

of the buildings on the company premises. "We were not allowed to deposit more than that," Weets explains. "The insurance company had some headaches because this was new territory for them—just like for us." The temperature of all the accumulators was checked three times a day, additional extraction systems had to be installed. "And we set up a container with water," says Weets. In the case of a fire, the batteries would have been submerged immediately. Because once the batteries burn, they are difficult to extinguish.

Currently, the batteries no longer leave the trucks at Weets, but are sent directly to VW. "There are no requirements of this kind," the entrepreneur explains. The batteries themselves are safe in the steel racks. Nevertheless, the batteries are still dangerous goods. And his drivers are trained for such cases anyway.

Weets is convinced that transport will continue to increase in the future. Because even if sales of electric vehicles are currently lagging behind expectations in some cases, the future is electric. After 2035, only cars that do not run on diesel or petrol may be newly registered in the EU states. "At the end of the day, the manufacturers have no choice," Weets sums up.

Weets has always adapted

However, this should not be a problem for the Emden-based company. Over the past four decades, Weets has repeatedly adapted and opened up new fields of activity. In the meantime, the company is no longer a pure forwarding agency. The employees work directly at the VW plant in Emden, and car parts are also assembled in the company's own facilities. Sills, A-pillars, B-pillars—Weets' employees manufacture important parts for VW. This also saves CO₂. "Formerly, the parts were welded together 400 kilometres away and then driven to the plants by 15 trucks," says Weets.

In an unremarkable room in a storage facility, boxes of interior lamps are piled up; next door, an employee is putting the parts together. "This has been much more than just a lamp for a long time," explains Weets. Besides the LEDs and the control elements, microphones are also built in. Weets transports the individual components to Emden, assembles them and then delivers them to the car manufacturers. It works similarly with other parts. "Most of it started out very small, sometimes with one pallet," Weets recalls. "And suddenly we're transporting twelve 40-foot containers a week." When Weets sees an opportunity, he takes it. He actually only bought a nearby warehouse so that no competitor could get hold of it. But it has never →

been empty. "We have even extended it by 11,000 square metres," says Weets.

From carrier to machine builder

"Most of it has been added bit by bit," explains Weets. In the meantime, the company also owns a mechanical engineering company. When Besser GmbH filed for insolvency in 2013, Weets acquired Omag Maschinenbau GmbH. The once struggling company, which manufactures equipment for the production of concrete blocks, is now once again present on the world market.

The company already has a foothold in the offshore energy sector as well. The market has potential. "And we want a piece of the pie there, too." Weets is already working with a transmission grid operator, and stores spare parts for power lines in a 30,000 square metres facility.

In Soltau, 2018, the company opened a transshipment centre for rail transport. "I was smiled at for it," Weets recalls. "Today we do a fantastic transshipment job, using five trains a week." Twelve trains a week go to Kassel and four more to Ingolstadt. "That's 600 containers. I couldn't send out that many trucks."

Started as a one-man business

Currently, around 550 people work for Weets. That, too, has grown gradually, recalls the



No desire to retire: Even at the age of 72 Jakob Weets is still in the office every day.

+ PROFILE

Originally a one-man business, Spedition Weets GmbH is now a medium-sized transport service provider with around 550 employees and subsidiaries in mechanical engineering and logistics. The company was founded in 1985 by Jakob Weets, who is still the managing director today. There are now branches in Hamburg, Soltau and Wolfsburg.



Krone has been there from the very beginning. Weets' very first semi-trailer came from Emsland.

PHOTOS: ANDREAS BURMANN



"The energy issue will remain a challenge."
Hannes Voigt, Managing Partner of
Herbert Voigt GmbH & Co. KG

Let's go electric!

Lights, music, electricity: in the bumper cars you can feel electric driving very closely. Frank Albers, Managing Director Sales and Marketing of Krone, met Hannes Voigt, Managing Partner of **Herbert Voigt GmbH & Co. KG**, to talk about the topic of electric mobility—and to do a few laps.

Frank Albers: *Mr Voigt, as an entrepreneur, how does electromobility feel to you?*

Hannes Voigt: It feels good, and we need it in the future, but in the truck sector, I honestly feel that the technology is still relatively far apart from practice. We have just put the first hydrogen truck into operation, which has an electric drive through the fuel cell. I have already driven the vehicle and it felt "typically electric": fast, agile, quiet. It was fun! But for our fleet, this alternative drive doesn't really make sense at the moment because the ranges aren't long enough and the infrastructure is lacking. We asked our municipal utilities if we could connect one or two vehicles, and the answer was that it would overload the grid.

The energy issue will remain a challenge, also because many areas of society are switching to electric, such as heat pumps for heating.

Frank Albers: *There should not be competitive situations, as with biodiesel. There has been a discussion here about whether the production of food for the plate has priority over its use as fuel. If we look at the subject of electricity, transport could be played off against supplying the population with heat. I think electricity has to be available for all segments.*

Hannes Voigt: Right, and the demand is gigantic. But we are prepared: in 2018, we built a completely new freight forwarding terminal—the largest in Schleswig-Holstein. →



Connections have been made to the loading ramps everywhere, so that we could potentially install charging facilities and supply trucks with electricity tomorrow.

Frank Albers: *Protecting the climate more effectively is unquestionably a must. At the same time, it is clear for entrepreneurs like you—and for us as a vehicle manufacturer—that not everything can be changed at once and that Germany must not be compromised as an industrial location. A lot was forgotten in the past, and we can't easily make up for that now. The technologies are available - that's where our strength as an engineering nation comes into play. But it is important that the political framework is also designed correctly—pragmatically and not ideologically. Logistics can then make a significant contribution to climate change. However, companies must have investment security. How do you decide in your company which technologies to invest in?*

Hannes Voigt: We have a separate department for innovation, which is closely linked to IT because many projects are implemented there. For example, we have converted our transport management system (TMS) and are currently still doing so with our warehouse management system so that we can work more economically and sustainably: The TMS enables us, for example, to plan much better and therefore to save empty kilometres so that we can utilise the vehicles even better. But one thing is clear: every investment in a new technology means a risk for us as a transport company. We have always wanted to be pioneers and that's why we constantly look into new possibilities at an

early stage. For example, we bought the long trailer with dolly axles from Krone and tested it together with Hellmann in pilot operations in Germany. A lot of potential was also attributed to biodiesel, also because it was supposed to be toll-free. When this was reversed a short time later, we had already modified a filling station. Fortunately, we only bought two of the LNG trucks—which were then standing in our company yard after the costs for LNG had drastically increased. That made the vehicles completely unprofitable. And then the road toll was added. Now, of course, we hope that we have made the right choice with hydrogen or electricity and that not only the ecological but also the economic aspects are right. You have to think in terms of vehicle life cycles, because we don't buy a hydrogen vehicle today to replace it with an electric one tomorrow. A truck like this is in use for four to eight years.

Frank Albers: *It's the same with trailers: the investment interval for them is six to eight years—then they are usually replaced and put on the used vehicle market. This would be different with the new technology, because the trailer would only have one life with its first owner. I think the trend is towards transport companies getting a full-service contract for the use of vehicles with alternative engines, so that they can count on fixed costs, calculate the freight accordingly and act economically.*

Hannes Voigt: Yes, I agree with that. With our hydrogen vehicle, we also have to say that it is currently not profitable at all. The vehicle itself costs at least two and a half times more than a conventional one, and the operating

“Protecting the climate more effectively is unquestionably a must.”

FRANK ALBERS

costs are also 30 to 40 percent higher than those of a diesel vehicle. It does help a little that it is supposed to be toll-free—but from 2025 this will no longer apply. Such volatility costs entrepreneurs a lot of money.

Frank Albers: *And the shipper must also play along and be prepared to support the switch to green technology by paying more for transport kilometres.*

Hannes Voigt: When we talked about the fact that we are now going to get a hydrogen truck, various customers actually approached us and asked if they could use the vehicle exclusively. I didn't expect that! So, we can pass on some of the additional costs. But we are also talking about a pilot project here. The important aspect is that it becomes economically profitable in the long run.

Frank Albers: *Together with the start-up Trailer Dynamics, we are currently implementing a very exciting concept and electrifying the trailer. In this case, an electric drive axle is installed that supports the tractor unit. This means that the trailer is lighter, so to say, and the tractor doesn't have to pull as much.*

Hannes Voigt: That sounds really innovative. The axle is powered by a battery?

Frank Albers: *Exactly. There are two battery sizes to choose from depending on the desired range. The system can save up to 40 percent fuel on the diesel tractor, because this energy comes as electrical energy from the trailer. There are 2.3 million diesel-powered tractors in Europe, which could thus be decarbonised very quickly. Entrepreneurs would have the advantage that they would not have to convert their entire fleet overnight. In addition, it is also possible to extend the range of battery-electric tractors up to 1,000 kilometres.*

Hannes Voigt: That sounds very interesting! When will Trailer Dynamics hit the road?

Frank Albers: *The response on the market is really good. We presented the project for the*

first time at the IAA 2022 and are now pushing it further. There are currently ten prototypes that are being tested in practice to record characteristic data and further develop the system. Market entry is planned for 2025/2026. We need this time for industrial production: High-voltage batteries will be used, which requires appropriately trained employees and a service network that can carry out repairs if necessary. In any case, there is a lot of interest in the market.

Hannes Voigt: Does the weight of the battery influence the payload?

Frank Albers: *According to the current state of battery technology, the system has a total additional weight of about 2.8 to 4 tonnes. We are in talks with the Ministry of Transport to see whether an exemption is possible, analogous to combined transport, where a GVW of 44 tonnes is permitted. What would you say you still need as an entrepreneur to make greater use of electromobility as one of the technologies of the future?*

Hannes Voigt: In addition to incentives on the part of politicians to ensure investments are not only ecologically but also economically sustainable, the energy grid must become correspondingly efficient and vehicle manufacturers must provide sufficient numbers. I assume that the electric drive will remain the technology for local transport in the near future. Therefore, we need vehicles with a range of at least 400 kilometres. In addition, the charging infrastructure must be built.

Frank Albers: *With hydrogen, you even create them yourself. You have built your own filling station, right?* →



+ ABOUT THE PERSON

Hannes Voigt has been Managing Partner of **Herbert Voigt GmbH & Co. KG** since February 2023. He completed a dual study programme in cooperation with DHL Freight and most recently worked at the digital freight forwarding start-up Forto before taking over the family business in its fourth generation. The Voigt Group, headquartered in Neumünster, offers holistic logistics solutions from a single source by combining transport and warehousing services with its own fleet of vehicles and state-of-the-art IT.



Hannes Voigt: Exactly, with a consortium of various partners we have built a large hydrogen filling station opposite our company premises. Furthermore, we have installed photovoltaic panels on the roof of our new bulk terminal, which is self-sufficient in energy on sunny days. For more sustainability, we have also completely converted our industrial trucks to lithium-ion batteries, converted buildings to the latest LED technology and also created the infrastructure for electric cars. As soon as sufficient green electricity is available, we can lay the cables and get started. What is happening at Krone with regard to climate protection?
Frank Albers: We are doing a lot to make transport and logistics more efficient and ecological, and to reduce CO₂ emissions throughout the entire process, from production to use.
Hannes Voigt: And Krone, like us, is a family-owned company that also reflects sustainability and has been successful in the market for a long time.

Frank Albers: *How do you deal with the issue of drivers: Do you find enough staff?*

Hannes Voigt: It is becoming more and more difficult, but at the moment we are fortunate to still find staff thanks to good working conditions: with us, the drivers are allowed to choose a vehicle and are given a budget with which they can equip it. In addition, we operate in conditions where they swap trailers in the evening, drive back again and are home the next morning. But of course, our workforce is also getting older and it is difficult to find new blood. We currently have 46 trainees, 12 of whom want to become professional drivers, and hopefully we can keep them. We feel the shortage of skilled workers in general and

increasingly—we have to automate and digitalise. And we do this not only to save costs, but also to remain competitive.

Frank Albers: *At the beginning of this year, you took over the company as managing director in the fourth generation. What are your plans, what are your priorities?*

Hannes Voigt: I want to ensure that our company remains a driver of innovation. Digitalisation is crucial for this, and it often leads to a win-win situation: if I save costs, I usually also become more sustainable. Telematics also enables many improvements. In the next step, we want to use it to measure and record our customers' consignments so that we can plan even better and play 3D Tetris in the software. Personally, I've settled into my new job very well. It fills me with pride to come to the family company every morning, just like my father and grandfather did. I see lots of familiar faces there: many of the employees have been with the company as long as I have been on Earth. Joining the company has felt like coming home. And I want to make sure that our customers continue to experience the safety, reliability and innovative strength they know us for.

Frank Albers: *We are also a fourth-generation family company and ultimately we have grown up through our absolute customer orientation. For almost 120 years, we have been facing the market, always finding solutions to new challenges, also throwing up questions ourselves and bringing innovation to the market so that our customers can be more commercially successful. I think this has worked very well, especially in the past few years, and we are doing everything we can to further expand this potential.* ↵



PHOTOS: DANIEL REINHARDT

What continues to move us

More inspiration, tips and thoughts

Soundful games

This innovative collection of games consists of 20 'sound squares' that are equipped with an NFC (near field communication) chip. When you hold them up to your smartphone, the corresponding app plays a short sequence of sounds. As with a memory game, you have to find the matching sequence of sounds hidden in another square. Klang² is infinitely expandable.

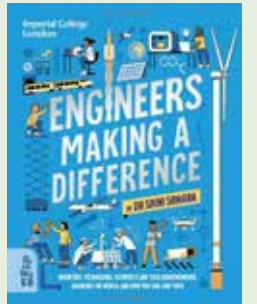
www.klang2.com



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Quiz

Do you know in which elections 16-year-olds nationwide are already allowed to vote? And where the gingerbread comes from? In the daily knowledge quiz on Zeit Online, eight questions (updated daily) can be answered, to provide bite-size general knowledge seven days a week.

www.zeit.de/spiele/quiz/index

Electronics first hand

The age of electronics has fundamentally changed our society. In the Electronics exhibition, the Deutsches Museum in Munich shows the development of electronic technologies over the last 100 years—including their impact on the environment and people. Free (pre-)guided tours, shows and hands-on programmes take place every day.

www.deutsches-museum.de





Continuing the spirit of innovation

Ansorge Logistik is known as a very modern forwarding company that always moves with the times. In the spring of 2023, Benedikt Roßmann took the helm as Managing Director, his predecessor Wolfgang Thoma launched the Elias electric tractor unit, among other things. How does one pass on this innovative strength to the next generation?

Mr Thoma, after more than 38 years in the company, you will retire at the end of 2024. How did you approach the topic of succession?

Wolfgang Thoma: It has been a major issue for me personally for about 15 years, because I have experienced time and again in various associated activities that companies have failed because of the succession issue. It was important to me that this should not happen with us. Ansorge should remain in family hands: With Benedikt Roßmann, the grandson of our company founder, we found the right person. He said early on that he could imagine taking over, and so we worked intensively towards this.

What role does innovation play at Ansorge?

Wolfgang Thoma: A very big one: We are always setting ourselves new challenges in order to secure the future of the company. For example, we were already thinking in the direction of combined transport in the mid-1980s and at the beginning of the 1990s, as a medium-sized company, we built a fully automatic high-bay warehouse for one of the largest food companies. Incidentally, we still operate the latter today. Furthermore, in 2012 we were the first company in Germany to use the long truck and in 2016 we ventured proactively into e-mobility—with Elias, an electric tractor unit that we developed and built

PHOTO: ANSORGE LOGISTIK

together with partners. We were early at that time, but urgently wanted to find answers to the CO₂ problem for our customers.

How can you transfer the spirit of innovation to the next generation?

Wolfgang Thoma: Benedikt and I have been working together intensively for five years and there is a lively exchange between the experience of age, which I represent, and the dynamism of youth, which he stands for. We have strategic meetings in a larger circle and these door-to-door talks—both are important. But we always put a lot of emphasis on short, quick information channels and then quick decisions. The fluid handover, in which we both contribute our experience, was intended that way, and I am really pleased that it has worked.

Benedikt Roßmann: As the new Managing Director, I do not rely on disruption, but on gradual innovation: we keep what is good and welcome new things into the company if they are promising and fit in with us.

What defines innovation for you personally?

Benedikt Roßmann: The term sounds very glamorous. But in my opinion, 10 percent of innovation is an idea or vision and 90 percent is hard work. We have been working on electromobility for almost a decade. Nevertheless, we are still learning every day. While you can almost put a tick in the box on the subject of vehicles, because the commercial vehicles are now gradually available on the market in standard production, the focus is now on the charging infrastructure, including a suitable energy management system. Finding solutions for your own company is hard work.

Where do you get the inspiration for new paths and opportunities in the company?

Wolfgang Thoma: Above all, we go through the world with our eyes open and maintain contact not only with our own staff, but also with other colleagues—for example through our involvement in associations and politics. A good network can be very supportive here. In addition, there is input from outside: I try to regularly get involved with things that are completely unrelated to my field in order to think outside the box. This can be, for example, a visit to a concrete processing plant, from which we also take away ideas for logistics processes at the end of the day. The Krone Denkfabrik also takes an interesting

approach—here people from the industry meet to initiate thought processes that then become reality. In addition, there are of course empirical values that help to assess trends in the industry and in the economy as a whole, at an early stage. And you have to be quick: By the time we react to developments, it is almost too late. The best thing is to be able to anticipate them, devise the right strategy and set off early. As the saying goes, “It is not the big that chase the small, but the fast that chase the slow.”

Benedikt Roßmann: When we talk about innovation, it is also a fact that the feeling of being at the forefront triggers something and has an effect on the culture of the company. This is particularly relevant in times of skills shortages: It is appealing to work in a company that thinks about the future. As a company, we want to provide answers to questions like “What do you use to inspire people today?” or “How can ecological change shape supply chains?”. That is what makes us strong. To ensure our future viability, we also pay attention to the heterogeneous age structure of our staff: our team is made up of great people in their twenties to sixties, who all bring different ideas with them. When we want to fill management positions, we have a broad selection. A family businessman once said that his company should be “capable of being conceived”. We also cultivate this intergenerational aspiration, which is typical for medium-sized companies—with consistency and at the same time with constant further development.

Ansorge was a pioneer in the field of electromobility: What is the future of this topic?

Wolfgang Thoma: The enthusiasm for it is still visible—from the management level to all employees and partners. We experience time and again that our commitment keeps us competitive and that we are in demand as an innovative company in mobility. Drivers appreciate the good driving experience—silently gliding along with relatively high torque. We now have six e-vehicles in our fleet, and by the end of 2023 there will be eleven. What we lack is good political support, especially the ability to plan political measures. The subsidy quota for e-trucks of 80 percent of the additional costs is great—but when the payment for 2026 is announced in response to an application from 2022, that is effectively a reduction in the quote. This is more than annoying, but of course we are not discouraged by it. ↩

PROFILE

Benedikt Roßmann studied Business Administration as well as Business Management and worked, among other things, as Business Development Manager at Fiege before joining **Ansorge Logistik** in 2018. Since spring 2023, he has led the company as Managing Director.

On route to emission-free refrigerated transport



"Customers are placing ever higher demands on the transport of their products."
Dolf Hubertus, Fleet Manager

When it comes to fast-moving consumer goods, the requirements for sustainability and quality are becoming increasingly stringent. The **Nabuurs Group** is responding to this by, among other things, greening its fleet of semi-trailers and refrigerated trailers. By 2030, the company will be able to serve all its customers in zero-emission zones. Long-term partnerships with clients and suppliers play an important role in this.

Nabuurs works for companies in the food industry, including major Fast Moving Consumer Goods (FMCG) brands that supply the Dutch retail sector, as well as several well-known breweries and factories in and around Land van Cuijk. These customers are placing increasingly high demands on the transport of their products, which, among other things, have to be transported at a constant temperature. Mars' chocolate products, for example, require a transport temperature of at least 15 to a maximum of 20 degrees. Deviating temperatures can have a negative effect on the quality of the chocolate. "That's why we expanded our fleet a few years ago with temperature-resistant, insulated trailers from Krone," says Dolf Hubertus, fleet manager at Nabuurs. "This keeps the products fresh without having to actively refrigerate them. Besides the extra costs, a refrigeration engine also means higher CO₂ emissions, which is not compatible with our sustainability policy."

PHOTOS: NABUURS

On the way to zero emissions

In order to reduce the company's ecological footprint, Nabuurs' employees have been working for years to make processes and organisation more sustainable. This spring, for example, the company opened a future-proof distribution centre and headquarters in Haps. The building was constructed with sustainable materials and has received the Breeam certification "very good". "Our fleet is also becoming greener. For example, we conducted intensive tests on our first electric truck more than ten years ago. Today we are driving four electric trucks and in the next two years we plan to add 23 more. By 2030, we will be able to serve all our customers in the inner cities without emissions," Hubertus reports, not without pride.

Achieving sustainable aims together

As an alternative to the usual fossil fuels, Nabuurs not only relies on e-trucks, but also on HVO (Hydrotreated Vegetable Oil). In the long

term, hydrogen could also be added. "It will probably become a mix of alternative fuels and power," says Hubertus. "This is our response to climate change. We are also already working on the implementation of the European CSRD legislation—the directive on corporate sustainability reporting. This is not only important for us, but also in the interest of our customers, who also need to make their supply chain, of which we are a part, more sustainable. Together with them, we develop sustainable transport solutions. One of our customers, who is one of the largest beer brewers in the world, allows us to use electric vehicles. Because of his own sustainability strategy, he is willing to pay the price difference between a diesel and an e-truck. You only advance if you work together.

Experiment and experience

In order to make transport more sustainable, Nabuurs tests everything that is currently available on the market in terms of new →

Dolf Hubertus has been fleet manager at Nabuurs Logistics for over ten years. Under his leadership, the company is working hard to make its fleet more sustainable.



technology. The group conducts in-house tests to experience first-hand what each technology has to offer. Hubertus describes the strategy as follows: “We expect the range of sustainable vehicles to increase significantly in the coming years. Just as there are vehicles with diesel engines in all kinds of models and designs, this will also be the case with electric trucks in a few years. At the moment, the choice is still limited. As the supply increases, we will eventually probably only buy electric vehicles. Krone is also actively working on appropriate vehicles and technologies. We are currently looking at the eCool-Liner trailers with battery pack together with Robert Assink from Krone. The braking energy that is recovered here through recuperation while driving is used for cooling. This could be interesting for us to further increase energy efficiency.”

Digital temperature control

When it comes to fast-moving consumer goods, temperature control has become increasingly

important in recent years and Nabuurs’ customers also have high demands in this regard. To manage temperature control, the company uses Krone telematics, which allows it to remotely monitor and report on the temperature in its refrigerated trucks. In 2019, Freight Frame, a wholly owned subsidiary of Nabuurs, bought its first trailers with Krone Telematics. They will be used on routes from the Benelux countries to Scandinavia and the Baltic States and are equipped with intelligent telematics. Nabuurs’ planning department can remotely track the trailer and the load in real time via Krone’s online environment and adjust certain criteria if necessary. “Digitalisation has become extremely important for us. Krone’s telematics fits this,” says Hubertus.

Automatic locking

In addition to a branch in the Netherlands, Freight Frame also has a location in Tampere, Finland. From there, all aspects of transport within Finland are handled. As a rule, the trailers go onto the ferry unaccompanied. They are then taken to their destination by Finnish drivers. “We use Krone telematics in combination with a remote-controlled opening and closing system. After loading the trailers with often high-value goods, the doors are fitted with an electronic lock. When the trailers arrive at their destination, our planning department can unlock the doors remotely. This works very well. With a supplier like Krone, we can provide our customers with safe, high-quality and sustainable transport.”



+ PROFILE

Family-owned Nabuurs, based in Haps, the Netherlands, was originally a poultry transport company. Since its foundation in 1928, Nabuurs has developed into a provider of complete supply chain solutions for fast-moving consumer goods. Core activities include transport and distribution, warehousing and co-packing. With 20 branches, 350 tractor units, 1,000 employees and an annual turnover of around 120 million euros, the Nabuurs Group is one of the 25 largest logistics service providers in the Netherlands. The main focus is on cost control, service, quality and sustainability. At the moment, Nabuurs has four electric trucks in operation, twelve will be added in 2024 and another eleven will be added to the fleet in 2025.

RECORD RACE FOR THE ELECTRIC TRAILER

The race track at the Nürburgring is legendary—this is where the automotive “Who’s Who” competes. The eTrailer from Krone and Trailer Dynamics got the chance to show how much power it has on this track. The vehicle went quietly, cleanly and rapidly to the start in races of the Goodyear FIA European Truck Racing Championship 2023 series for the “Mission Record Run”, after Misano in Italy, Poznan in Poland and Nürburg. Abdullah Jaber, Managing Director of Trailer Dynamics, sat behind the wheel himself, pushed hard on the accelerator and set fastest times. The entire team learned even more about the vehicle and how it performs under extraordinary conditions—insights that will flow into the further development of the eTrailer.



PHOTO: KRONE



Allowing ideas to grow

Simone Lode, Managing Director of HHLA Next, accompanies business models in the logistics world from the initial idea to the path to independence. In doing so, she combines “asset heavy” with modern digital tools and methods.

The offices of HHLA Next in Hamburg’s Speicherstadt are strikingly green, many walls here are densely covered with plants: „With us, innovative ideas for the logistics world are given the space to grow,” explains Managing Director Simone Lode. The company is the „venture building and investment“ unit of Hamburger Hafen und Logistik Aktiengesellschaft (HHLA). „We invest in innovative companies or develop ideas into independent business models, spin them off and accompany them through the entire process until they become independent.“ After less than two years, HHLA Next can already look back on six portfolio companies in which it has invested. In addition, there are four proprietary developments that are currently being driven forward.

Discovering new things and making them successful

Simone Lode is an idea accelerator: “I am driven by discovering new things and making them successful,” she says. HHLA is one of Europe’s leading logistics companies and focuses on port handling, hinterland transport and container services. The company, which has grown for centuries to become a group, impresses with its sector expertise, industry knowledge, access to customers and market know-how. “We want to bring these strengths together with the flexibility and agility of start-ups, in tandem with their determination to

approach new customers,” reports Lode. HHLA decided to set up its own company, HHLA Next, to cooperate with start-ups. “I affectionately refer to it as a ‘disc function’ that we take on there: We speak the language of an established company and also understand well how a very young company works.”

At her former employer Deutsche Post Adress, a joint venture between Bertelmann and Deutsche Post, Lode got to know postal distribution centres, got a taste of logistics and gained insights into supply chain management. At the same time, the company’s business model was strongly digital and data-driven: “This allowed me to get to know many aspects of logistics in a corporation.” She wanted to use her digital skills more to find ways to use data more efficiently and optimise processes. “In times of multi-crisis like we have experienced in recent years, everyone has experienced first-hand that logistics is one of the most important industries. If it gets stuck, it can affect any of us.” Lode wants to play a part in ensuring that logistics remains efficient and masters new challenges.

In-house development saves up to 14 per cent CO₂

“The industry is not facing major upheavals, but is right in the middle of them,” Lode is convinced. For her, digitalisation and the desire for more sustainability are the most important influencing factors. “Accordingly, digital business models that place great value →

+ SIMONE LODE

An expert in the fields of strategy, innovation and M&A, economist Simone Lode began her career at Deutsche Post Adress GmbH & Co. KG, a joint venture between Deutsche Post and Bertelsmann. Within just five years, she rose to become a member of the management board. After another five years at the Bremen-based energy supplier swb, she moved to HHLA in 2021.

Simone Lode appreciates the pleasant atmosphere in the offices, which promotes communication and well-being among the staff.



on sustainability are of interest to us at HHLA Next.” One example of this is the in-house development Heyport, which aims to synchronise and better coordinate port calls. Until now, when a ship wants to enter the port, it often reports information such as arrival time or number of loaded containers to its terminal by telephone, and e-mail or fax are also used. “Such media disruptions greatly slow down efficiency and can quickly lead to disagreements between the parties involved,” says Lode.

Sophisticated ports like the one in Hamburg have solved the problem by letting independent companies take over the coordination. “But by no means all ports already work digitally.” Heyport is now a platform where all parties involved can see when a place is free at the quay for the next ship. “A nice side effect is that the shipowner knows that he doesn’t have to travel at full speed from Rotterdam to Hamburg at all. We have calculated that using Heyport could save up to 14 per cent CO₂ on average.”

Electrification also plays a major role in the Port of Hamburg, according to Lode. The HHLA Container Terminal Altenwerder is the first climate-neutral certified facility of its kind in the world. Here, electrified storage and rail cranes were installed early on and automatically controlled vehicles are in operation. HHLA Next has also invested in Fernride: The start-up, which has a partnership with Krone, aims to support truck drivers with autonomous technology, thereby enabling automated, sustainable logistics. “It’s a perfect match for us because we solve several problems at once,” explains Simone Lode. “We can counteract the driver shortage, drive the decarbonisation of heavy haulage and increase the efficiency of our terminals.” Furthermore, HHLA Next is currently working on a charging infrastructure for

e-trucks in the port area—in combination with a platform that links the charging status in the truck with information regarding the location of the next charging station which can then be booked directly.

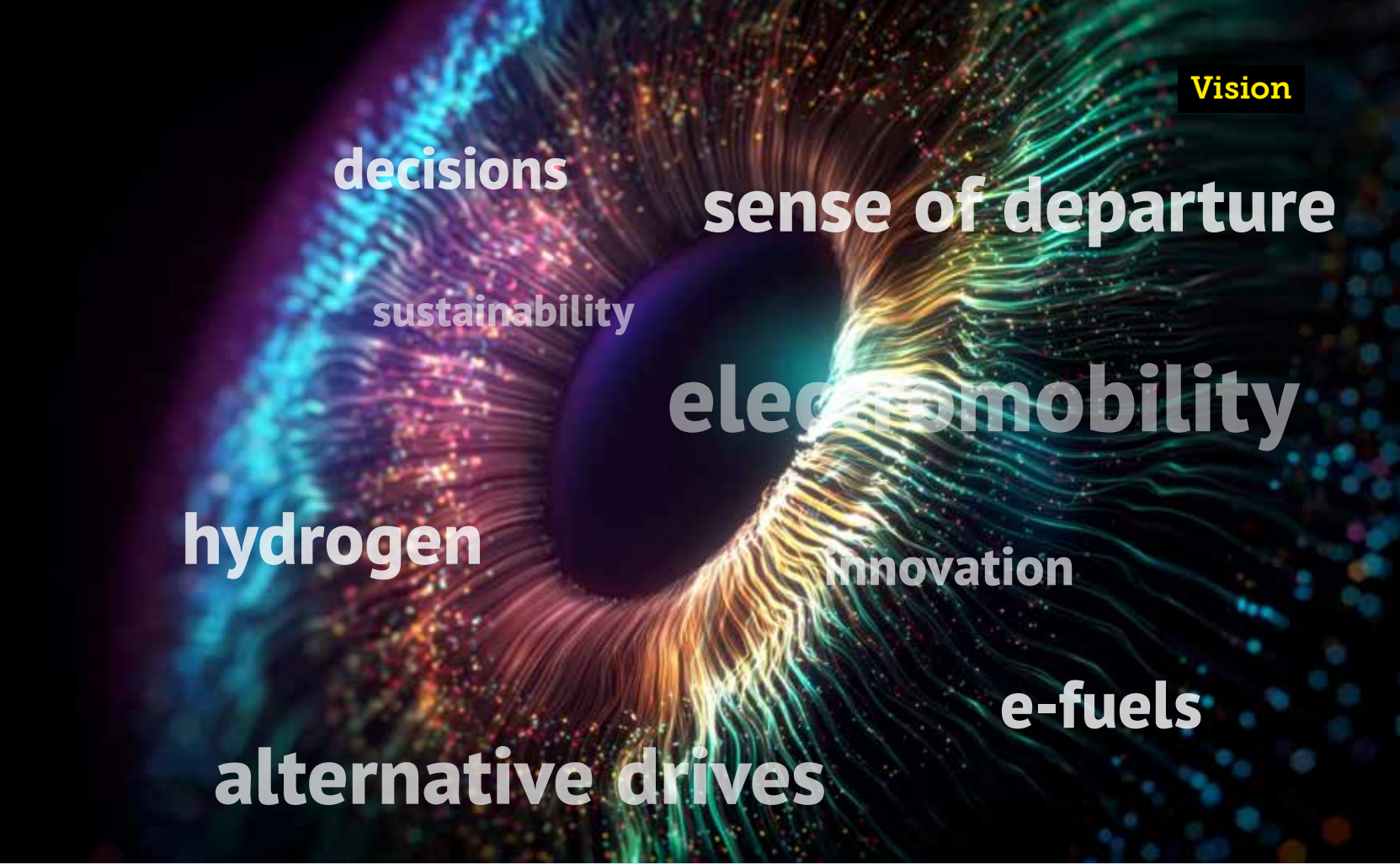
Group-wide innovation process

HHLA Next pursues three forms of approach: Firstly, the company monitors the development of more than 2,000 start-ups operating worldwide and checks where there is still potential for its own developments, or it invests in promising young companies. The second approach is networking! “We go out and talk to people in start-ups and other innovative companies to exchange knowledge and talk about problems in operational business—for which we can then look for solutions if necessary.” Thirdly, HHLA Next naturally cooperates with HHLA: a group-wide innovation management process has been set up. It provides for employees from all divisions to propose ideas for business models that can be scaled externally. If a suggestion is deemed promising, the person behind it is given a budget and is allowed to use 20 percent of his or her working time for eight weeks to develop the idea.

One of Simone Lode’s heartfelt topics is good human resources development. “You can have a great product, but it only works if the people who are the face of the company are convincing. Team and organisational development are among the most important factors for success.” Simone Lode completed coaching training a few years ago in order to fill her leadership responsibilities well. “I look at every single person in the company, I want to identify strengths and promote them. I believe that supporting what a person is really good at and teasing out their passions is very effective in bringing out excellence.”

What Lode also likes about her job is that she can “always have her finger on the pulse” when it comes to trends and technologies: “That quenches my thirst for knowledge.” She appreciates the great freedom of action that HHLA Next enjoys: “We are allowed to decide for ourselves in which approaches we invest and then also take operational responsibility for them. You don’t often get this chance. It allows you to change a lot of things in a positive way—and I find that very appealing.” She recommends a job in logistics to anyone who “wants to drive change”. There is so much to shape, she says, and that can only motivate people who like change. “If you have a soft spot for a business that is asset heavy—it only works with machines—and at the same time has a lot of intelligence, it’s exactly the right thing.”

PHOTOS: HHLA NEXT



A column by Bernard Krone

Fuel for Change



In this issue of DENKFABRIK, we have explored the question of what constitutes electromobility, how it is developing—and also how it feels. After all, business decisions are shaped by facts such as budgets, order numbers and customer requirements. Of course, personal experiences as well as impressions also play a role. For me, the topic of alternative drives is currently associated above all with a sense of departure. While there was a long discussion about which concepts would prevail, it is now clear that all of them—from hydrogen to e-fuels to electromobility—will find their place. So, it’s all about concrete implementation, and that releases completely new energies.

Innovation always represents fuel for change. And at the same time, change is fuel

For me, the topic of alternative drives is currently associated above all with a sense of departure.

for innovation: Especially when we as an industry are faced with such complex challenges as we are at present, new ideas and solutions are required. These, in turn, make a new beginning possible—to move forward, to think ahead, to act in a new way. We are thinking ahead together with you, our customers: What solutions do you see for transport of the future?



 **KRONE**