

On course for sustainable material handling

# The future of the warehouse – for your success



 **JUNGHEINRICH**



Transformation from the inside out

# Sustainable material handling with Jungheinrich

At Jungheinrich, we have a holistic approach to sustainability: ecologically orientated, socially just and economically successful. Our understanding of sustainability is deeply rooted in our history as a family-owned company, while firmly focussed on the future.

We design our customers' warehouses to be efficient, circular-ready and safe. Our solutions facilitate sustainable material handling. In cooperation with our customers, we form part of the solution to a global challenge as a "sustainability enabler".

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## Approved sustainability: our rankings, ratings and certifications

We regularly put ourselves to the test and seek external confirmation of our sustainable approach. Our Ecovadis Platinum rating, for example, shows that we belong to the top 1% of companies worldwide in terms of sustainability.



Seize opportunities, minimise risks

# Now is the time to invest in sustainable material handling

## Increase efficiency

Sustainable solutions allow you to permanently increase your efficiency and reduce operating costs.

**30%**

increased productivity through automation solutions<sup>1</sup>

## Reduce emissions

Energy-efficient technologies make a decisive contribution to achieving your climate targets.

**20%**

emission reduction through lithium-ion technology<sup>2</sup>

## Secure competitive advantages

Fulfilling regulatory requirements and the expectations of customers, investors and employees gives you the edge.

**65%**

of B2B companies consider sustainability in procurement to be highly relevant<sup>3</sup>

## From “nice-to-have” to “licence to operate”

In spite of current perceptions and mood barometers, the social, political, and economic need for sustainable change in our industry persists. The efficient use of limited resources, the intelligent use of innovative technologies, and transparent and responsible corporate governance along the entire value chain help to minimise dependencies and risks, and are decisive for the future viability of companies.

<sup>1</sup> Customer reference DB Schenker | <sup>2</sup> <https://www.jungheinrich.co.uk/your-solutions/lithium-ion-technology> | <sup>3</sup> JARO Institut study 2023.

**For us, sustainability is more than just a vision – it is the compass for the transformation of material handling, combining ecological innovation, social responsibility and economic success.**



**Dr Lars Brzoska**  
Chairman of the Board of Management



**With Jungheinrich, the future  
of your warehouse becomes:**

**efficient**

Optimum utilisation of space and resources

**circular-ready**

Efficient use of materials and energy,  
promotion of reuse, and waste reduction

**safe**

All-round safety for your employees  
and sensitive goods

Products and solutions for the future of your warehouse

# Optimum use of space and resources





## Powered by electricity

Since our founding, we have invested heavily in electric drives for your benefit – and since 2023, all our trucks have been 100 % electric. We manufacture trucks, controls, software, batteries, and charging technology ourselves. This complete system ensures maximum efficiency for your low-emission warehouse operations.



Pioneer in lithium-ion technology:  
Our lithium-ion trucks produce on average around 10 % less CO<sub>2</sub> over their entire life cycle and consume around 20 % less energy in the utilisation phase compared to lead-acid batteries.<sup>1</sup>

Our compact li-ion trucks with integrated lithium-ion batteries increase your floor space productivity by 4 %.<sup>2</sup>



Transparency for informed decisions: We are calculating the product carbon footprint (PCF) for an increasing number of products to help you make sustainable decisions. If you would like more information, please send us an enquiry!



Our highly efficient chargers optimise energy use. The active load management also saves resources as it can be integrated into higher-level energy management systems and can eliminate the need to extend the electrical installation.

<sup>1</sup> <https://www.jungheinrich.co.uk/your-solutions/lithium-ion-technology>

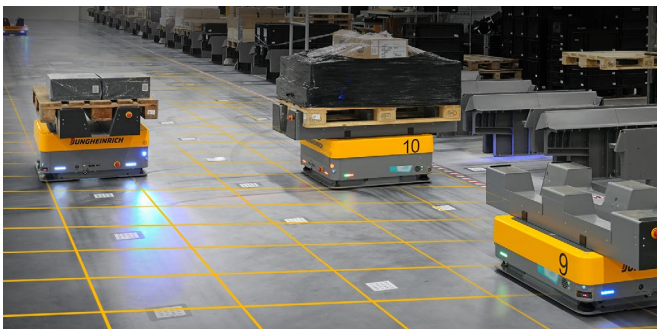
<sup>2</sup> <https://www.jungheinrich.co.uk/your-solutions/lithium-ion-technology/lithium-ion-trucks>



## Digital & automated

Digital and sustainable transformation go hand in hand. The complete end-to-end digitalisation of your warehouse makes processes transparent, allowing you to fully leverage efficiency potential and effectively utilise automation solutions.

Digital solutions such as the Jungheinrich WMS save paper and offer greater transparency for inventories, commissioning and transport, which makes material flow more efficient.



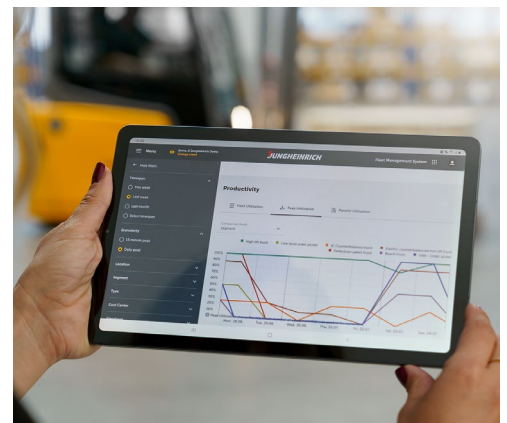
Automated in a connected overall system: Software solutions, ASRS and mobile robots optimise processes, reduce space requirements and energy consumption. They also reduce the risk of accidents to almost zero.



Some sustainable benefits:

- Errors are minimised, leading to savings in consumables, for example.
- Avoiding empty runs, traffic jams and detours saves energy.
- All resources are used optimally – from working hours to trucks, as well as space a.

Predictive fleet management: With the Jungheinrich FMS, you can monitor and optimise the productive use of your fleet.







Reduced energy consumption through automation

## New construction of the central warehouse of the furniture chain Bohus, Norway

### The challenge

Decentralised storage and the resulting long transport routes led to high emissions and significant costs for Norway's leading furniture and interior design chain Bohus. Continuous expansion of the inventory as well as different product categories and load sizes require flexibility for the future viability of the warehouse design.

### Our solution

In addition to a manually operated warehouse, a fully automated high-bay warehouse for containers, Euro and special pallets alongside lithium-ion trucks and storage and retrieval machines with energy recovery ensure efficient intralogistics.

# 17%

Sustainable success through  
17 % energy savings

Optimised goods flows ensure maximum storage capacity and reduced transport.

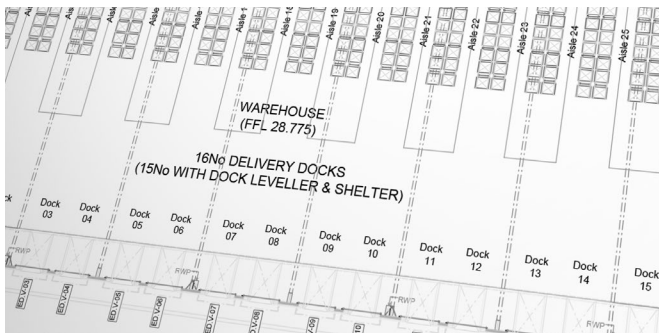


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on YouTube



## Holistic consulting

With our material flow and energy consulting, we support you in planning and optimising your sites for efficient operation with a reduced CO<sub>2</sub>e load. We help you get started and ensure optimised processes and technologies in the long term.



An intelligent, expandable warehouse layout minimises space requirements, thereby saving heating and cooling, as well as lighting costs.

[www.jungheinrich.com.sg/sustainablematerialflow#1](http://www.jungheinrich.com.sg/sustainablematerialflow#1)

Our local energy consultants provide tailored energy concepts and consulting on site.



Demand-orientated sizing avoids overcapacity, enables the maximisation of machine efficiency, and allows for the use of scalable solutions.



Transform together:

In our Green Site Guide, we share tips for the sustainable transformation of your sites.

[www.jungheinrich.com/en/greensiteguide#1](http://www.jungheinrich.com/en/greensiteguide#1)



Products and solutions for the future of your warehouse

# Preserve and use resources wisely

# circular-ready





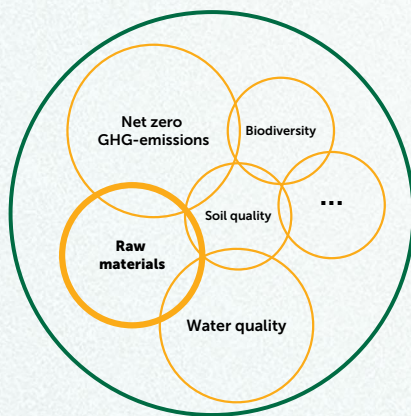
## Small steps to major transformation

# On the path to a circular future

Circular business models combine resource and energy efficiency, and offer great potential for the ecological, social and economically sustainable development of your company.

### Circular economy saves resources and reduces emissions

The principle of the circular economy makes it possible to decouple economic growth from the consumption of limited resources. In addition, energy consumption is reduced if products and materials can be kept in their original state within the cycle for as long as possible.



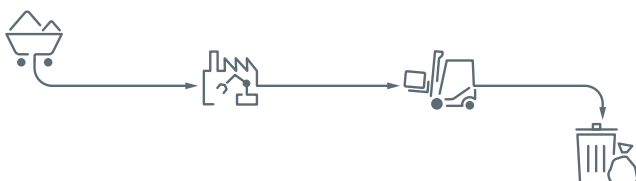
### Medium and long-term benefits for businesses

A more circular economy offers the opportunity for companies to increase their competitiveness, stimulate innovation, boost economic growth and, of course, create jobs.

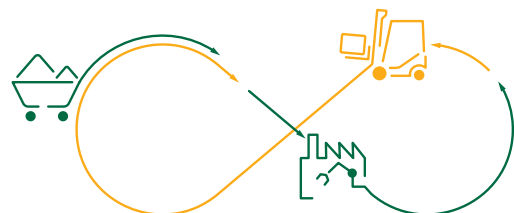
There are various reasons for this: For instance, the use of secondary materials can lead to cost reductions. Risks in the supply of materials are minimised due to the reduced dependence on primary materials and disruptions in global supply chains. And last but not least, high-quality remanufactured products can reach new customer groups and thus lead to an increase in sales and profits.



### Linear economy



### Circular economy



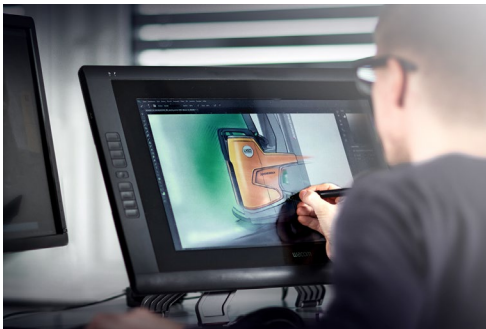
In contrast to the linear economy, the value of products, materials and other resources is retained for as long as possible in the circular economy.



## Well-thought-out & long-lasting

We think about the end of our the product life cycle at the very start of the design process – and ensure that it is as far away as possible. The longer products, components or raw materials are used, the more sustainable they are – both ecologically and economically. Whether new or refurbished, we offer the same quality promise for all our trucks.

The refurbishment process for our JUNGSTARS saves around 80 % CO<sub>2</sub>e compared to new production.<sup>1</sup>



Thanks to forward-looking product development, our used trucks achieve a reuse and recycling rate of up to 99 %.

Our customer service is increasingly going electric, actively contributing to maintenance, and thus extending the service life of your warehouse equipment.



Our vision for the battery life cycle: first use in new trucks, second use in used trucks, and then in stationary storage facilities, before cells are finally recycled.

<sup>1</sup> <https://www.jungheinrich.co.uk/products/used-forklifts>





Maximum efficiency and flexibility thanks to lithium-ion technology

## Fleet optimisation at plastics expert Orafol, Germany

### The challenge

After more than a decade of challenging two- and three-shift operations, Orafol's fleet of over 250 industrial trucks needed to be modernised in order to reduce downtime and costs. The three-day inspection and the replacement of the vehicles had to be carried out without interrupting operations.

### Our solution

A mix of rental and purchase options for 100 industrial trucks with lithium-ion technology enables a more flexible and efficient fleet organisation. A full-service concept with on-site battery service and the on-site Jungheinrich workshop ensures short downtimes and a long truck service life, while our digital fleet management optimises efficiency and the sensible use of resources.



**Sustainable success:**  
heading for the future with "Repair & Rental".

Long-term rental concept for lithium-ion trucks and on-site customer service are the first steps towards a circular-ready warehouse.



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on YouTube





## Designed to meet demand

Keeping only what is truly necessary in your inventory helps conserve natural and financial resources. Our short- and long-term rental and leasing models offer you flexibility to optimally adjust and utilise your fleet. Additionally, the product carbon footprint of the rented trucks has only a proportional impact on your CO<sub>2</sub>e balance.



95 % of our refurbished trucks come from our rental fleet and thus contribute to a circular business model.

Over 150 rental locations worldwide ensure a comprehensive distribution network and short transport routes.



Our rental fleet includes particularly energy-efficient trucks, around 30 % of which are equipped with lithium-ion technology.

We offer solutions for every use case with models such as our Full Flex Rental “forklift subscription” or the flexible rental of an entire fleet with Rental Fleet Management.





Products and solutions for the future of your warehouse

# Protection of people and goods



## A safe warehouse is a sustainable warehouse

Examining the three dimensions of sustainability reveals that social factors also play an important role alongside ecological and economic aspects. The topic of safety can be found in all three areas: we offer you products and solutions that increase safety for people and the environment, while also guaranteeing safety in an economic sense.



# All-round protection

Our safety solutions protect employees, materials and goods, fulfil the requirements of fast processes and automated warehouses, while at the same time promoting an ergonomic, healthy workplace design.



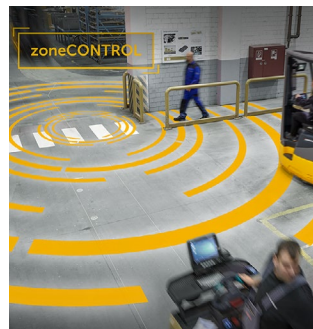
Assistance systems regulate driving and lifting speed, increase stability when navigating bends, and prevent collisions.



360° personal protection thanks to safety sensors in our mobile robots.



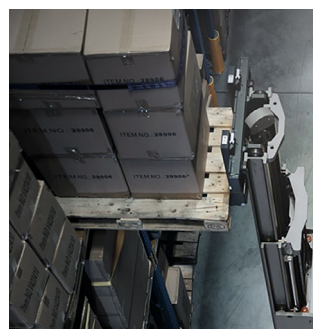
AI reversing camera for pedestrian detection – a clear view even in tight spaces.



Intelligent danger zone management with the radio-based assistance system zoneCONTROL.



Safety is not just digital: Robust components, good visibility, and ergonomic design are a matter of course.



Less impact damage thanks to (semi-)automatic journeys with our connected assistance systems.

## Tested & optimised

Safety first: Proactive damage prevention and safety measures reduce accidents and damage while increasing efficiency through lower downtime. Investing in a safe work environment also strengthens your employer brand and demonstrates appreciation for your employees.



The Jungheinrich FMS increases safety in the warehouse through the pre-operational check, reporting of shock events, and an access control system that regulates driver authorisation and truck speed.

With SAFEwalk, you can systematically enhance warehouse safety by inspecting all areas during a walkthrough – from truck operators and material handling equipment to the overall warehouse environment.

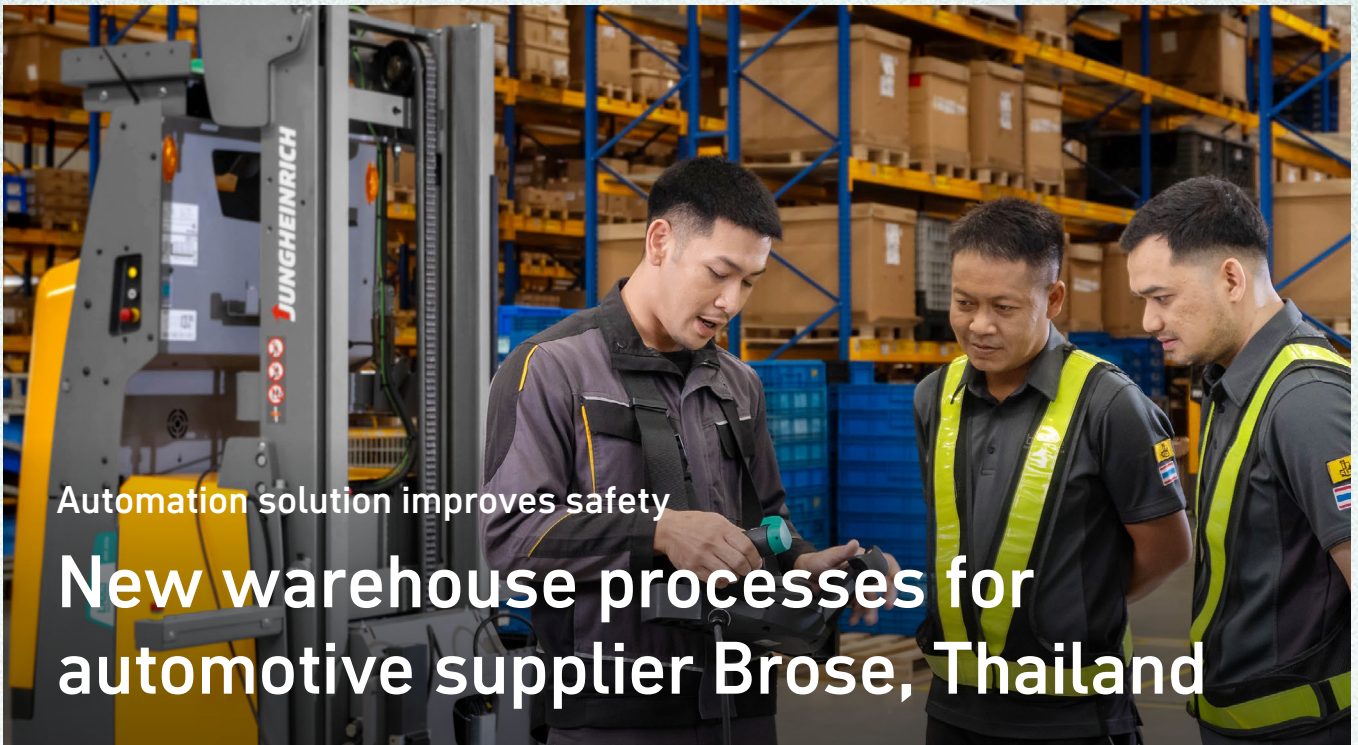


Significantly fewer incidents of damage thanks to qualified rack inspections in compliance with ISO EN 15635, conducted by our certified inspectors.



Thanks to regular testing and optimisation in accordance with a standardised checklist, the number of safety incidents experienced by our customer Hellmann has been reduced to zero.





Automation solution improves safety

## New warehouse processes for automotive supplier Brose, Thailand

### The challenge

In order to accommodate an increasing order volume and the future viability of the warehouse, Brose's warehouse processes in Chonburi, Thailand, had to be sustainably developed and optimised. A further focus was placed on reducing warehousing errors.

### Our solution

A flexible software system with automated process optimisation now ensures greater safety and damage-free handling. The innovative use of the automated Mobile Robot EKS 215a with lithium-ion technology enables an additional increase in efficiency and safety.



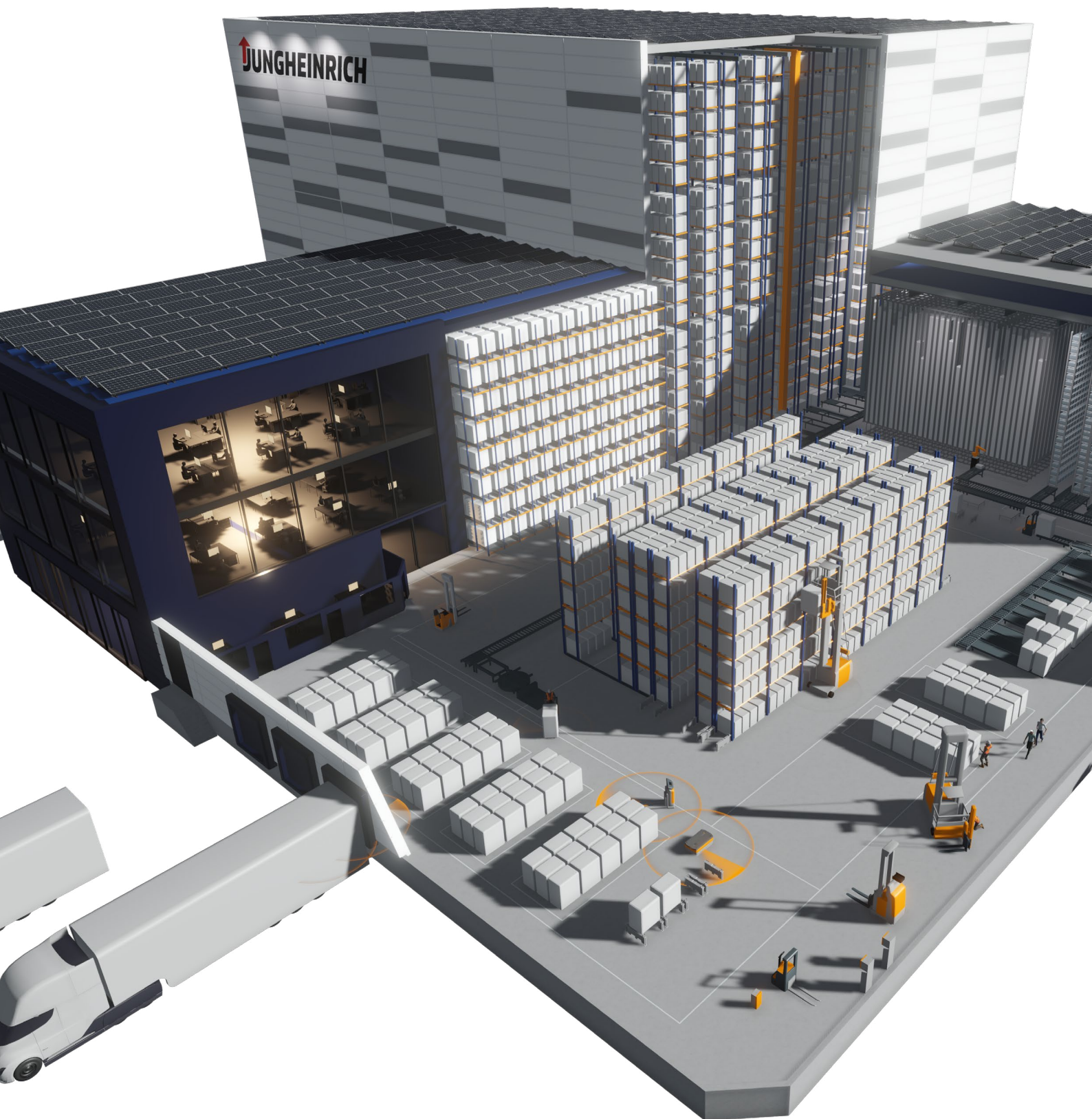
**Sustainable success:**  
Innovative technologies increase safety and offer potential savings.

**Automated processes reduce the risks for employees and minimise picking errors.**



Watch the report  
on YouTube





**Whether it's an individual order or an all-round carefree package: we make your warehouse more sustainable**

Our products are driving the transformation of your warehouse and our industry. After all, sustainability is not just something we live by within the company, it is also put into practice with our products and solutions. In particular, we support high-emission industries in reducing emissions. And not just in the warehouse: our powertrain solutions are also electrifying other industries.



Future alignment made easy

# Our products and solutions



## New products

In line with eco-design, we take energy efficiency and material recycling into account right from the development stage.



## Energy solutions

Compared to lead-acid batteries, our lithium-ion technology consumes around 20 % less energy in the utilisation phase.



## Rental

Our rental models improve our customers' carbon footprint and promote the circular economy. Our rental fleets supply 95 % of our used equipment.



## Customer service

Our first-class service extends truck life, reduces new purchases, and cuts emissions by electrifying the service fleet.



## Used trucks

Our JUNGSTARS save up to 80 % CO<sub>2</sub>e through refurbishment compared to new production.



## Consulting services

Advice on energy efficiency and optimal warehouse design.



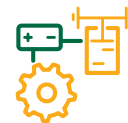
## Digital solutions

Efficient and secure flow of goods and use of resources with digital products.



## Automation

Automated systems increase safety in the warehouse and can reduce energy consumption by up to 17 % during operation.



## Powertrain solutions

We are also electrifying other sectors – such as agriculture – with our drive solutions.

# 2030+ STRATEGY

Global expansion

Automation

Portfolio expansion

Transformation

## ESG

### Environment

With our products, solutions and projects, we promote environmentally friendly and circular material handling while counteracting climate change.

### Social

We promote a safe, inclusive working environment, fair conditions, respect for human rights, and support for local communities.

### Governance

We integrate sustainability into our processes and objectives and work on the transparency of our supply chain.

As a central element of our 2030+ corporate strategy, we aim to continue developing our core business in a way that combines productivity and sustainability in the “Transformation” field of action. Our sustainability strategy is largely based on the principles of the internationally recognised ESG model.



Strategically anchored

# Our sustainability targets

Our vision is to become one of the most sustainable companies in the world. We are committed to a future in which our products and solutions conserve resources, actively promote climate protection and, at the same time, strengthen fair working conditions, human rights and local communities worldwide. Together with our employees, partners and customers, we are developing circular-ready and future-proof business models that combine ecological, social and economic sustainability.



## Our part to combat climate change

By 2030: Net zero emissions in Scopes 1 and 2.  
By 2050 in Scopes 1 to 3  
Reduction targets in accordance with SBTi.  
No severe climate-related business interruptions.



## Reduce resource consumption

By 2025: no landfill waste in German plants and reducing the global share by one-third.  
By 2030: 0 % at sites with recycling systems.  
Maintaining the high reuse and recycling rates.



## Creating a safe and fair working environment for our team members

By 2025: Improve the accident rate (LTIR) to 12.5.  
By 2025: 14 % women in management positions.  
Securing employability and personal development.



## Ensuring transparent and sustainable procurement

By 2025: 80 % of the relevant global purchasing volume is Sustainable Spend.



## Providing our customers with sustainable products and solutions

Designing our customers' warehouses to be efficient, circular-ready and safe  
Increased safety for customers, e.g., through the growing use of assistance systems.



## Strengthening value-oriented corporate governance

Strategically relevant top ratings from EcoVadis, CDP, Sustainalytics, and ISS ESG.  
No fines for data protection violations.



Certified information security ISO/IEC 27001:  
The highest security standards apply to  
the development and operation of our digital  
solutions to protect your information.

**ISO 9001**  
**ISO 14001**

The German production facilities  
in Norderstedt, Moosburg, Landsberg  
and Kaltenkirchen are certified.



Jungheinrich trucks conform  
to the European Safety  
Requirements.

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