Issue 02 | 2021

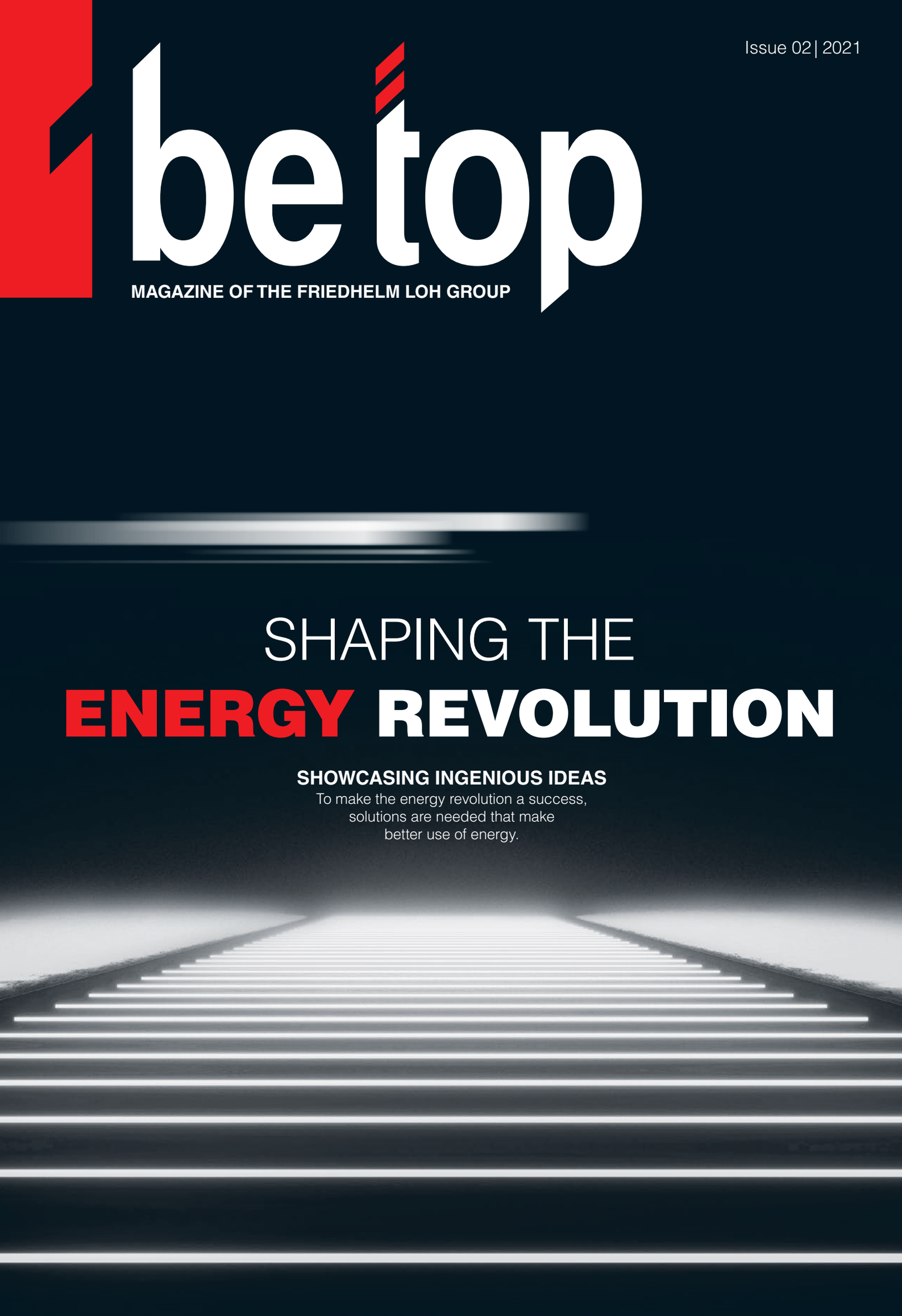
be top

MAGAZINE OF THE FRIEDHELM LOH GROUP

SHAPING THE ENERGY REVOLUTION

SHOWCASING INGENIOUS IDEAS

To make the energy revolution a success, solutions are needed that make better use of energy.



Up and running faster

Dear readers,

There are plenty of good ideas. Good intentions and strategies. In many cases, though, these ideas never really get off the ground. Doing something – taking action – is vital, especially where the key issue of energy is concerned.

When it comes to the energy revolution, there's no time to lose. Fast solutions are called for. It's crucial for the future that energy systems are converted rapidly. Industry needs solutions to reduce its carbon footprint as quickly as possible. At the same time, digitalisation is forging ahead.

The transformation of energy systems calls for solutions that can be implemented efficiently on a large scale – to create everything from energy storage systems and electromobility charging infrastructures to high-performance edge and cloud data centres.

The key lies in standardisation. If we are to transform energy systems faster, we need standardised system technology and value creation processes with data-driven, automated solutions. This approach has proved effective in enclosure technology – in all sectors of industry and in IT.

From energy generation and transmission to storage and consumption, Eplan and Rittal help you save time and money when designing, engineering and building systems that will transform our power supply solutions into the energy systems of the future.

To provide you with even more effective support along the way, Rittal has established the Energy & Power Solutions business unit. Pooling our product expertise and application experience in this way means we can offer system solutions across all energy sectors.

In this issue of be top, you can find out how we have joined forces with Mercedes-Benz Energy to develop state-of-the-art storage systems for Factory 56 and worked with Commeo to produce battery storage solutions for electric charging stations. You will also discover how thyssenkrupp Steel Europe is making its switchgear fit for the future with the VX25 RiPower system, how the RiMatrix NG IT platform ensures a reliable power supply for data centres, how Viega is lowering energy costs by 70 per cent using cutting-edge cooling unit technology, and much more besides.

Read on and allow yourself to be inspired!

Prof. Friedhelm Loh

Prof. Friedhelm Loh
Owner and CEO of the
Friedhelm Loh Group

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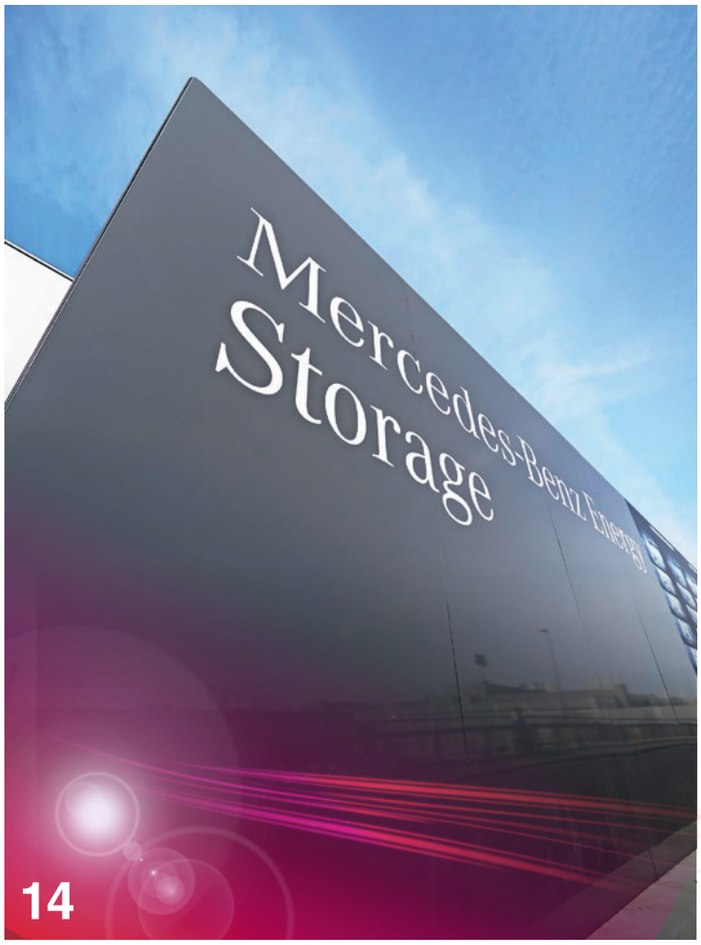


Dr Carola Hilbrand
Director Corporate Communications
Friedhelm Loh Group

What do you think of be top?

"What are we doing well and what could we make even better? Your opinion is important to us and we'd love to hear your ideas. Maybe you'd even like to see a fascinating article from your company featured in be top. The editorial team is looking forward to your feedback!"

Write to us at:
betop@friedhelm-loh-group.com

NEWS UPDATE

COVER STORY
ENERGY REVOLUTION

INNOVATION

EXPERIENCE

COMMITMENT

be top online

Check out the digital version of be top:

https://betop.friedhelm-loh-group.com

NEWS

AUGMENTED REALITY MAKES IT POSSIBLE

Using the digital twin to surprise customers

At my next customer meeting, can I simply get out my smartphone and project the **digital twin** of an enclosure onto the desk or make it suddenly appear in the production facility? It sounds like the stuff of fantasy, but it's already happening. When using the **new AR (augmented reality) add-on** for the Eplan eView Free cloud software in conjunction with the free Vuforia app from PTC, fully assembled enclosures can be placed anywhere in a virtual space. The 3D design can be displayed in any location using the end device's camera.

Design engineers can thus share the digital twin from Eplan Pro Panel with their business partners via the cloud. It's also easy to make changes – simply tap any enclosure component and the system opens the 2D view of the circuit diagram for fine-tuning using the redlining and greenlining functionality.

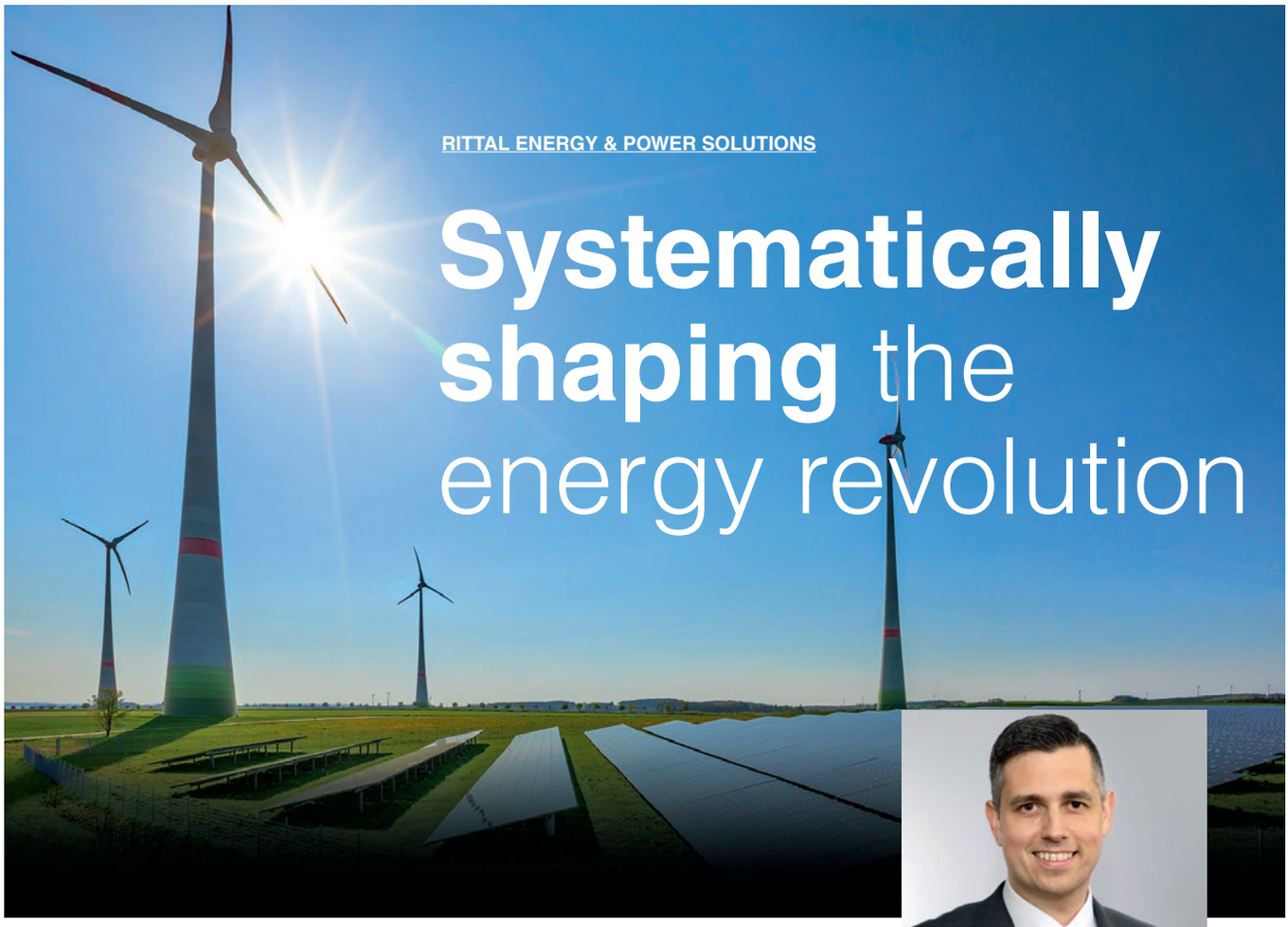
MORE ABOUT

RITTAL

New Managing Director Operations

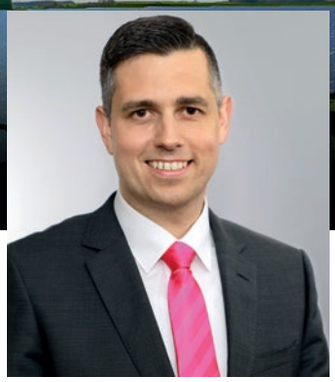
Production expert. Dr Marc Sesterhenn was appointed Managing Director Operations at Rittal on 1 October 2021. He is responsible for the company's national and international production facilities. Dr Sesterhenn has a great deal of operations experience and has been highly successful in this field. Before joining Rittal, he was Executive Vice President Operations and Member of the Executive Board at Rohde & Schwarz KG. Between 2003 and 2016, he held various operations-related management positions at MAN Truck & Bus – most recently Production Director at MAN Truck & Bus Austria, from 2012 to 2016.

Dr Sesterhenn studied mechanical engineering at RWTH Aachen University and the Massachusetts Institute of Technology (MIT). At RWTH Aachen, he also obtained a Master of Business and Engineering degree and a doctorate in engineering. "We're delighted to have recruited an experienced manager of Dr Sesterhenn's calibre. His production management expertise at internationally successful companies will be a vital factor in achieving our goals," says Rittal CEO Markus Asch.



RITTAL ENERGY & POWER SOLUTIONS

Systematically shaping the energy revolution



Raphael Görner took charge of the Energy & Power Solutions business unit at Rittal in July

Just over a year ago, in October 2020, Rittal launched a dedicated business unit for the energy market. In doing so, it laid the groundwork for further expanding the company's technical and sales activities in the growing energy sector. We spoke to Raphael Görner, who took over as the new Head of the Energy & Power Solutions business unit in July.

Mr. Görner, Rittal has been actively involved in power distribution for decades. What is new about the recently launched business unit, and is anything changing for our customers? Our RiLine and Ri4Power products for power distribution used to be simply a small part of the Industry business unit. In the new Energy & Power Solutions business unit, we have now combined these long-established solutions with application-oriented modules, that is to say solutions for renewable energies, conventional power plants, power transmission and distribution, battery storage systems, charging infrastructure and hydrogen-based applications.
By consulting us, our customers can now optimise their own solutions and bring them to market even faster.

What is the core competence of your business unit and what concrete contribution does it make to the transformation of energy systems? We combine our product know-how with our application experience, meaning we can offer system solutions across all sectors of the energy industry – from power generation using conventional power plants and renewable energies by way of power transmission and distribution all the way through to cutting-edge power infrastructures. The focus is on modular solutions for energy storage systems, the charging infrastructure for electromobility and the eco-efficient supply of power to data centres. Rittal actively helps plant engineering customers implement time-saving and cost-cutting measures throughout the entire value chain, from engineering and semi-automated plant construction to service operations. That means we are also playing an active role in shaping the transformation of power supply systems.

What are the specific focal points of your work over the coming months? In the months ahead, we will be expanding the dedicated team that advises on solutions and develops ready-made solutions in the various areas. We will also be extending our product portfolio over the next few years. This growth is not restricted to Germany. It will take place globally. After all, the energy revolution has long ceased to be just a national issue.

What relevant experience have you acquired in your previous roles?
I have spent the past 15 years working with power engineering systems in Germany and globally and, during the early part of my career, I worked for a small, family-run electrical engineering company. That has given me a comprehensive insight into the transformation of power supply systems – from high-voltage DC transmission to large substations and then small, high-performance semiconductors for power distribution. I am keen to use this expertise to help our customers make the transition to a sustainable energy industry.

Dr Norbert Schmid
Chief Sales Officer (CSO)
at German Edge Cloud

GERMAN EDGE CLOUD

New Chief Sales Officer

Sales expert. Dr Norbert Schmid took up the post of Chief Sales Officer (CSO) at German Edge Cloud (GEC) on 1 September. The seasoned sales expert was previously Executive Director at IBM Germany for the Robert Bosch, Siemens and subsidiaries sales units. "German Edge Cloud is a pioneer in the development and implementation of edge and cloud computing. My goals include the further expansion of the sales organisation around the strong product portfolio and the advancement of our sales partner management," he says.
"In Dr Norbert Schmid, we have recruited a strong CSO who will help our customers master their challenges by means of his expertise, broad technical knowledge and profound market insights," emphasises Dieter Meuser, CEO of Industrial Solutions at GEC.

"ONCITE powered by IBM" caters to the manufacturing industry's digitalisation needs.

GERMAN EDGE CLOUD

Data exchange in multi-clouds

German Edge Cloud uses **Red Hat OpenShift** in its "ONCITE powered by IBM" edge cloud solution for the intelligent analysis of production data and the networking of factories. Manufacturing companies can thus run their applications for Industry 4.0 scenarios on the industry-leading Kubernetes enterprise platform. ONCITE operates in conjunction with private clouds and can additionally use public clouds, e.g. for networking with other companies that utilise platforms of this kind to exchange data with their suppliers. The main advantage for users is that different cloud infrastructures can be combined in a controlled manner, in a multi/hybrid cloud model. Incorporating technology from IBM and Red Hat, the solution offers a demand-based IT infrastructure for this purpose.

NEW LOGISTICS PARTNER:
GEBRÜDER WEISS

Turbocharging Rittal logistics in the USA

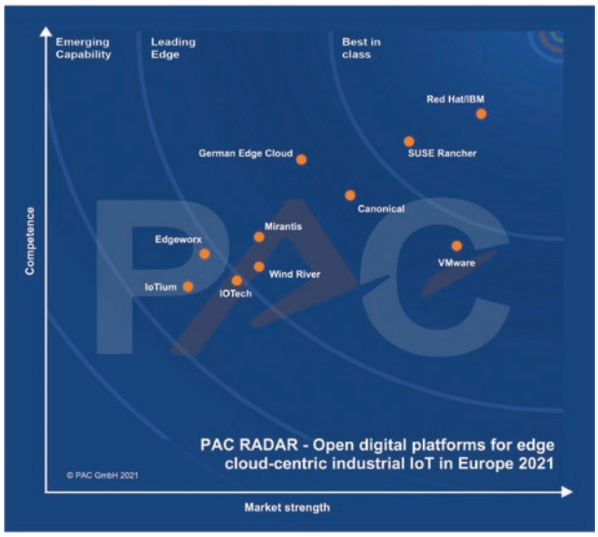
Rittal logistics. To provide more supply and service options for its customers in America's Midwest, Rittal USA is now working closely with the transport and logistics company Gebrüder Weiss. The global logistics expert from Austria, which has a great deal of experience in storing and transporting IT technology, is now operating **a new logistics warehouse in Des Moines, Illinois.** The advantage of this location is that customers – from data centre operators, integrators and OEMs to mechanical and plant engineering companies – are now getting their Rittal IT racks, enclosures and accessories delivered faster than before. "Thanks to the collaboration with Gebrüder Weiss, we can supply our high-quality products to our customers in America's Midwest even more effectively," says Mike Freund, CEO of Rittal USA.

Grand opening. Rittal is increasing its presence in the Midwest with the new Gebrüder Weiss logistics warehouse.

LKH KUNSTSTOFFWERK

Major automotive contract

LKH Kunststoffwerk in Heiligenroth has won a major automotive industry contract worth several million euros. Starting from 2022, the Friedhelm Loh Group company will be producing air spring components for a premium manufacturer over an eight-year period. The plastics expertise of LKH was already in evidence during the development of the highly complex components – from performing feasibility analyses to optimising costs. The high-tech components are manufactured using a hybrid process in fully automated and digitalized production cells at the Heiligenroth plant. "Together with our customer, we developed and implemented new technical solutions that involve highly sophisticated mould design and process simulation. Once again, LKH has demonstrated its expertise as a development partner for plastic components for the automotive industry," says Volker Hindermann, Managing Director of LKH.



PAC INNOVATION RADAR

German Edge Cloud top edge provider

PAC has classed German Edge Cloud (GEC) as hidden Champion in Germany and Europe. Market researcher PAC evaluated 67 relevant platform providers for the PAC INNOVATION RADAR. German Edge Cloud – along with IBM/Red Hat and SUSE Rancher – made up the "Top 3" on the expertise scale in the "Open Digital Platforms for Edge Cloud-centric Industrial IoT" segment. GEC consequently achieved an overall ranking of "Leading Edge Vendor". PAC named German Edge Cloud as hidden champion for "edge cloud-centric industrial IoT" in Germany and Europe on account of its special expertise in production expertise. In addition, the company has the potential – as IBM/Red Hat's first strategic partner – to achieve the vision of a hybrid application platform with multi-cloud capabilities for the digital factory.

DB BROADBAND GMBH

DB fibre-optic network with technology from Rittal

Outdoor enclosures. Germany's state rail operator Deutsche Bahn is opening up its fibre-optic network to telecommunications suppliers and mobile communications companies. Running parallel to the rail network, it extends over 18,500 km and covers the length and breadth of Germany, including the remotest of stations. Communities and businesses nationwide will thus be able to benefit from cutting-edge fibre-optic connections with this "dark fibre" network. Rittal enclosure solutions for this application have been built at pilot locations in the regions of Harz and North Hesse. One of the project requirements was that a lightweight concrete base/plinth should be used to provide the necessary stability and approval was obtained following a structural inspection. The Rittal enclosure being used is the CS Toptec in Resistance Class 2 (RC 2). The project is scheduled to start at the end of 2021.

RITTAL COOLING UNITS

CO_2 emissions slashed

By the middle of 2022, some **3,500 enclosure cooling units** are set to be replaced by new units **with energy-efficient Blue e+ technology** at the engine and car plants of a well-known car manufacturer. A good 1,200 units have already been replaced at one of the company's other plants and the smooth, professional implementation of this work resulted in the new assignment.

Comparative measurements revealed **energy savings** of over **75 per cent.** Speed-controlled components and heat pipe technology give Blue e+ cooling units their high energy efficiency. This won over the responsible energy managers, which led to the automotive manufacturer giving the replacement project the green light. By saving energy and cutting CO_2 emissions, the Rittal Blue e+ units are contributing to the world-famous car and truck manufacturer's global strategy for achieving CO_2-free production. This project success represents the largest ever single Cooling & Service order for Rittal.

EPLAN AND RITTAL CANADA

COVID-19 – ventilator developed in record time

It took Valiant TMS less than a month to develop a ventilator for COVID-19 patients. The goal shortly after the outbreak of the pandemic was to provide hospitals with urgently needed equipment as quickly as possible. With this in mind, the Canadian automation expert developed a basic low-cost, user-friendly ventilator that is easy to make. The use of **Eplan engineering software,** which ensured quick and efficient preparation of the circuit diagram and parts lists, played a big part in getting the project off the ground. It also meant changes to the design could be implemented spontaneously at any time. The ventilators are installed in NEMA 4X **stainless steel wall-mounted enclosures from Rittal** that have been classified as suitable for medical applications. They have already received an Industry Leadership Honours nomination as the best concept from a Canadian company.

Saving lives: the ventilator that Valiant TMS developed using solutions from Eplan and Rittal.

Dr Friedhelm Loh (3rd from left), Markus Asch (1st from left) and Norbert Peter (6th from left) are delighted with the employees at the Rittal plant in Rittershausen.

RITTAL CELEBRATES ENCLOSURE SYSTEM

Rolling off the line in gold – **the millionth VX25**

How can the best be made even better? That was the question facing Rittal when it started developing the VX25 enclosure system. Now, just three years on from the market launch, there are a million VX25 enclosures being used by industrial and IT customers the world over.

They can be found, for example, in the production lines of well-known car manufacturers, in wind turbines situated in remote locations, on cruise ships and in the data centres of IT giants such as Facebook and Amazon. On 16 August, the millionth VX25 rolled off the production line at the Rittal factory in Rittershausen. It was gilded to mark the occasion and was celebrated by management and staff – a memorable moment for everyone involved.

SEVERAL THOUSAND LARGE ENCLOSURES EVERY DAY

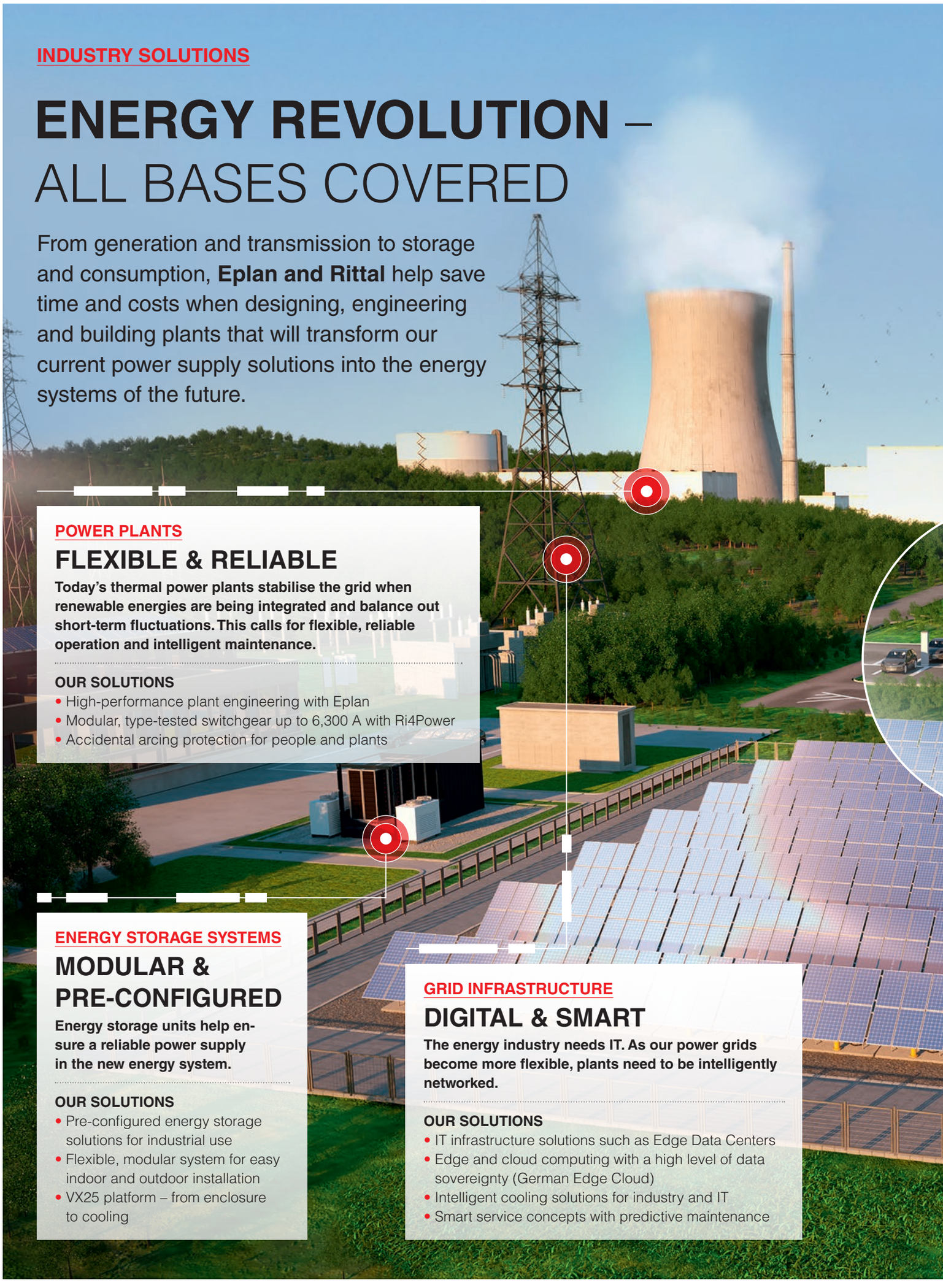
The company's manufacturing operations are no longer restricted to Germany. Enclosures are now also produced in China, India, the UK, Brazil and the USA. "Across the world, we manufacture several thousand large enclosures every day," said Prof. Friedhelm Loh in his speech. According to the owner and CEO of the Friedhelm Loh Group, one of the great strengths demonstrated by Rittal is that it repeatedly adopts approaches that go against the trend or help it get ahead of trends. One example, he explained, is the expansion of its portfolio – from enclosures to systems incorporating climate control and power distribution, and subsequently to IT infrastructures. Prof. Loh reminded his audience that Rittershausen was the birthplace not only of these large enclosures, but also of the company as a whole. "With the people of this region, we have developed a business model which has revolutionised the entire world of electrical engineering," he said.

Markus Asch, CEO of Rittal International, went on to emphasise the importance of the VX25 for Rittal customers: "The large enclosure is an expression of our expertise." He also revealed that the VX25 meets 90 per cent of all customer requirements in thousands of configurations worldwide. Together with Norbert Peter, Vice President Operations Germany and Plant Manager in Rittershausen, he presented a gilded enclosure key and a commemorative certificate to all 1,240 employees in recognition of all their hard work.

INDUSTRY SOLUTIONS

ENERGY REVOLUTION – ALL BASES COVERED

From generation and transmission to storage and consumption, **Eplan and Rittal** help save time and costs when designing, engineering and building plants that will transform our current power supply solutions into the energy systems of the future.



POWER PLANTS

FLEXIBLE & RELIABLE

Today's thermal power plants stabilise the grid when renewable energies are being integrated and balance out short-term fluctuations. This calls for flexible, reliable operation and intelligent maintenance.

OUR SOLUTIONS

- High-performance plant engineering with Eplan
- Modular, type-tested switchgear up to 6,300 A with Ri4Power
- Accidental arcing protection for people and plants

ENERGY STORAGE SYSTEMS

MODULAR & PRE-CONFIGURED

Energy storage units help ensure a reliable power supply in the new energy system.

OUR SOLUTIONS

- Pre-configured energy storage solutions for industrial use
- Flexible, modular system for easy indoor and outdoor installation
- VX25 platform – from enclosure to cooling

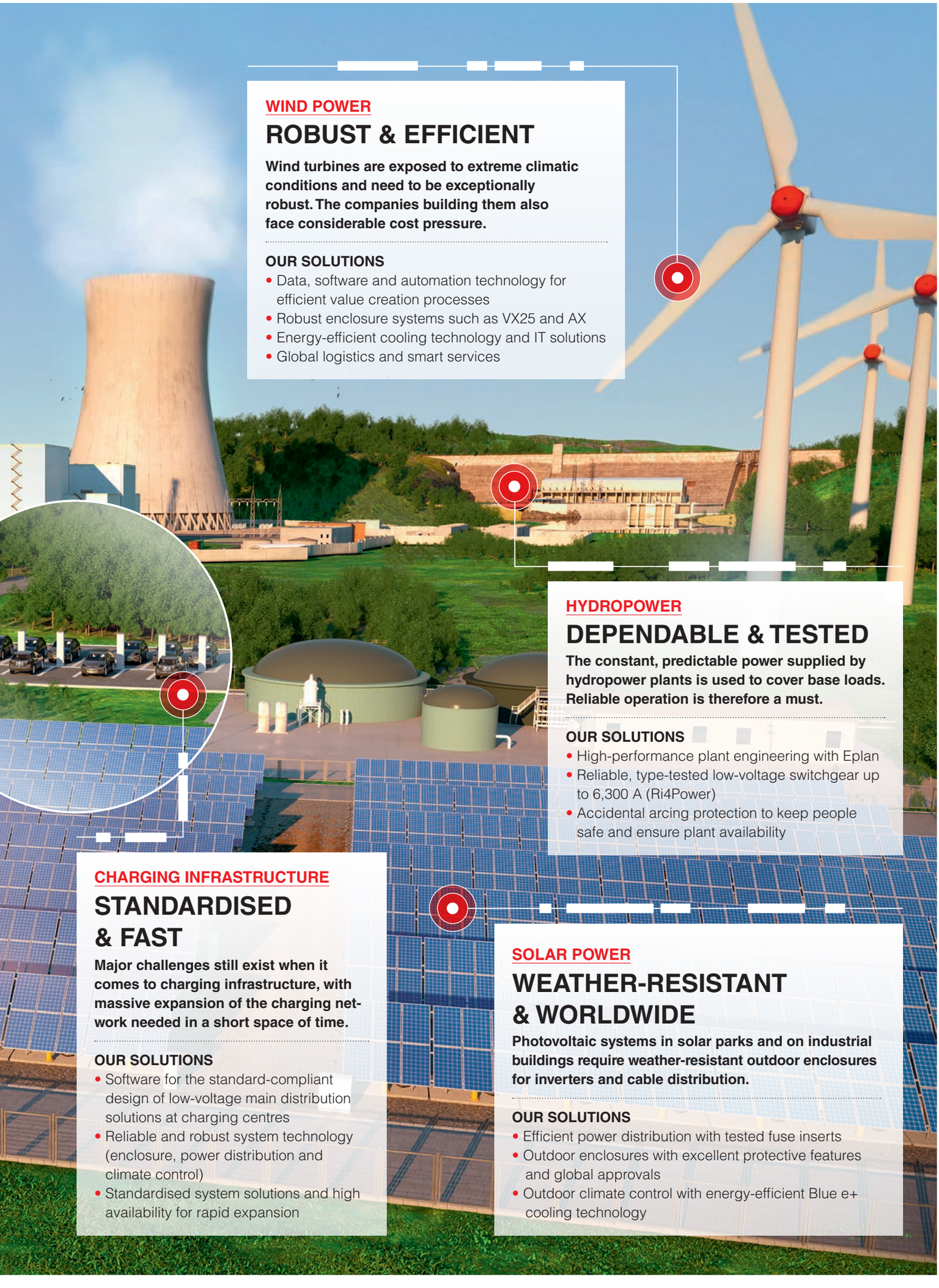
GRID INFRASTRUCTURE

DIGITAL & SMART

The energy industry needs IT. As our power grids become more flexible, plants need to be intelligently networked.

OUR SOLUTIONS

- IT infrastructure solutions such as Edge Data Centers
- Edge and cloud computing with a high level of data sovereignty (German Edge Cloud)
- Intelligent cooling solutions for industry and IT
- Smart service concepts with predictive maintenance



WIND POWER

ROBUST & EFFICIENT

Wind turbines are exposed to extreme climatic conditions and need to be exceptionally robust. The companies building them also face considerable cost pressure.

OUR SOLUTIONS

- Data, software and automation technology for efficient value creation processes
- Robust enclosure systems such as VX25 and AX
- Energy-efficient cooling technology and IT solutions
- Global logistics and smart services

HYDROPOWER

DEPENDABLE & TESTED

The constant, predictable power supplied by hydropower plants is used to cover base loads. Reliable operation is therefore a must.

OUR SOLUTIONS

- High-performance plant engineering with Eplan
- Reliable, type-tested low-voltage switchgear up to 6,300 A (Ri4Power)
- Accidental arcing protection to keep people safe and ensure plant availability

CHARGING INFRASTRUCTURE

STANDARDISED & FAST

Major challenges still exist when it comes to charging infrastructure, with massive expansion of the charging network needed in a short space of time.

OUR SOLUTIONS

- Software for the standard-compliant design of low-voltage main distribution solutions at charging centres
- Reliable and robust system technology (enclosure, power distribution and climate control)
- Standardised system solutions and high availability for rapid expansion

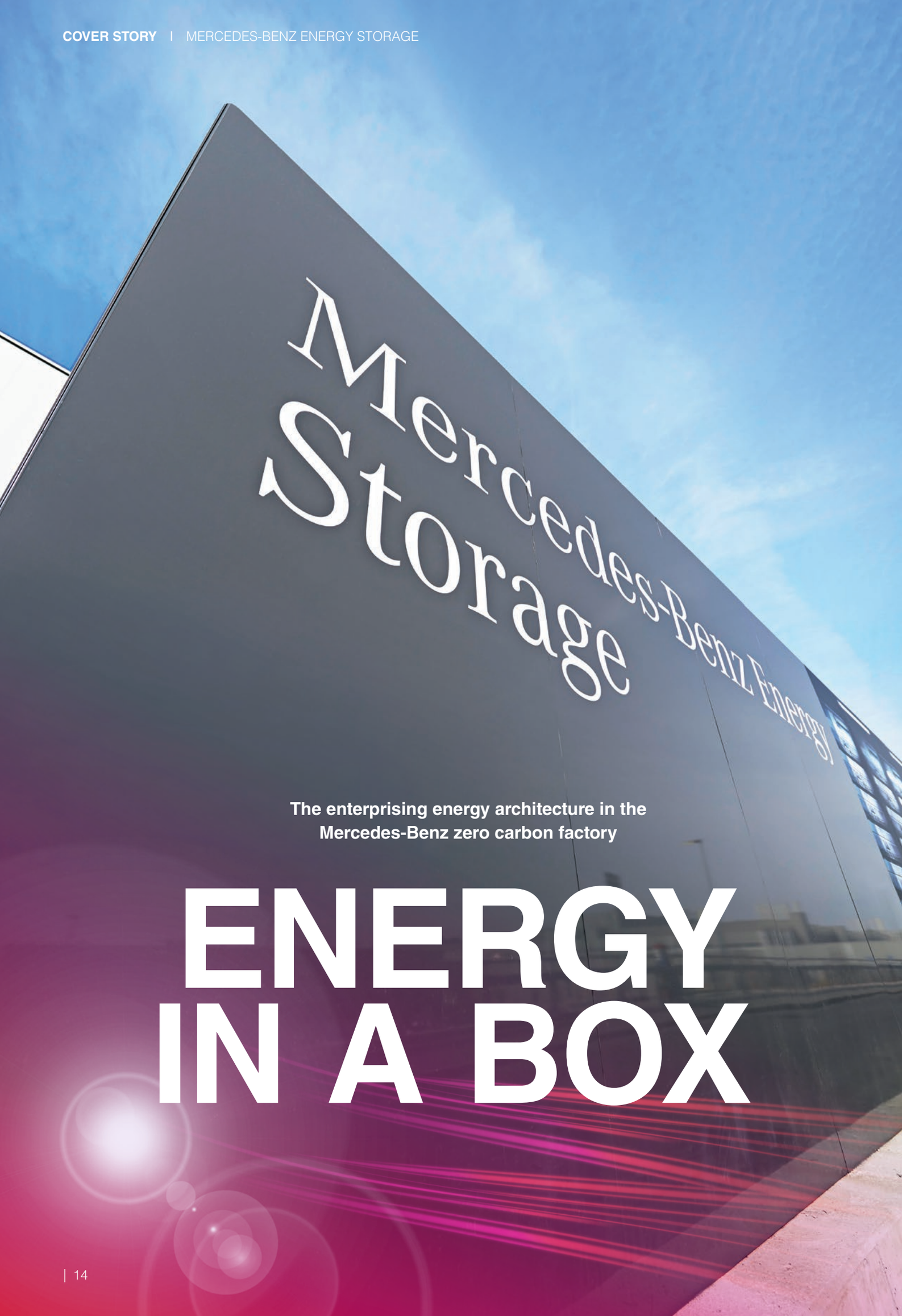
SOLAR POWER

WEATHER-RESISTANT & WORLDWIDE

Photovoltaic systems in solar parks and on industrial buildings require weather-resistant outdoor enclosures for inverters and cable distribution.

OUR SOLUTIONS

- Efficient power distribution with tested fuse inserts
- Outdoor enclosures with excellent protective features and global approvals
- Outdoor climate control with energy-efficient Blue e+ cooling technology



The enterprising energy architecture in the Mercedes-Benz zero carbon factory

ENERGY IN A BOX

"By creating stationary energy storage systems, Mercedes-Benz Energy is taking electric car batteries from vehicles to the grid, as it were."

Gordon Gassmann
CEO of Mercedes-Benz Energy

Mercedes-Benz Factory 56 started operating in September 2020. The company's new S-Class Saloon is among the vehicles being manufactured at this showcase factory in Sindelfingen – and all on a zero carbon basis from the outset. Overall, Factory 56 consumes a quarter less energy than other assembly plants. How does it achieve this? The answer lies in the use of DC technology in two energy storage systems **powered by Mercedes-Benz Energy and Rittal**.

Author: Ulrich Kläsener

25 %

Overall, Factory 56 consumes a quarter less energy than other assembly plants.

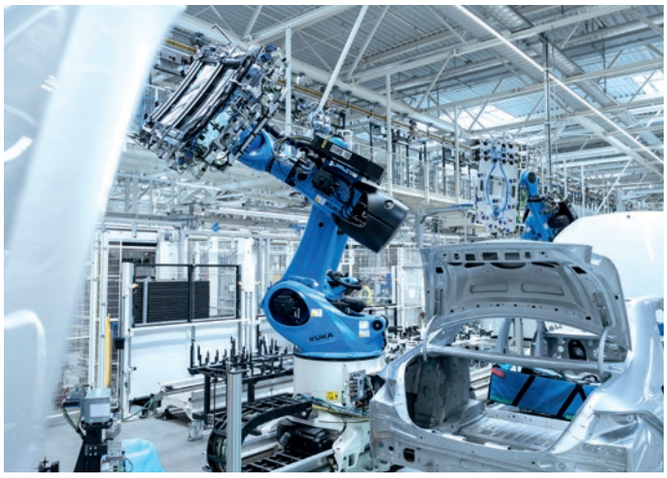
Being in the thick of the action is different to standing on the sidelines. The two energy storage systems fit in perfectly next to the factory building. They would almost go unnoticed, were it not for the "Mercedes-Benz Energy Storage" in big, bold lettering on the outside – and this is one instance where the system in question certainly does exactly what it says on the box. The stationary energy storage system has a total capacity of 1,400 kWh and is supplied with green electricity from the factory's own photovoltaic system via a DC grid. The energy is actually stored by second-life batteries. These plug-in hybrid batteries were previously used in Mercedes-Benz electric test vehicles. During their second life, they will spend an estimated ten further years storing surplus solar power.

FASCINATING REALITY

The combination of photovoltaic system, DC grid and battery storage system has moved on from its former showcase or lighthouse project status. In the here and now, it is supplying up to 30 per cent of the energy needed for production – from solar power that is generated in-house. The 12,000 modules of the photovoltaic system on the production plant's roof have an annual output of around 5,000 MWh. The aim is to use this directly and efficiently in-house for building services, intralogistics and production technology. Any energy that is to be stored on a temporary basis is transferred to the Mercedes-Benz Energy battery storage system.

"Energy storage systems are a key component in energy flexibility – not just in smart homes, but also in industry."

Michael Scholl
Key Account Manager
Automotive International at Rittal



Hallmarks of Factory 56: IoT-enabled robotics, automated guided vehicles, 5G and integration into the MO360 digital ecosystem.

THE KEY ELEMENTS

Michael Scholl, Key Account Manager Automotive International at Rittal, explains what the stored energy is used for: "Energy storage systems are a key component in energy flexibility – not just in smart homes, but also in industry. They provide the technology to postpone energy consumption, balance load peaks and safeguard the emergency power supply if necessary. In the medium term, smart factories with energy storage systems will supply power to the grid and help stabilise our European power supply system." Like anything to do with renewable energies, however, what sounds extremely simple and logical in fact requires a great deal of hard work at the development stage to make it happen. "Here at Rittal, we also provide key services for integrating energy storage systems, such as research and development, planning and project management," continues Scholl.

Elements of the new energy architecture: Vehicle batteries installed in enclosures to create an energy storage system powered by Mercedes-Benz Energy and Rittal

Green electricity direct from Factory 56's roof: 12,000 photovoltaic modules generate 5,000 MWh of power that is put to direct use, stored or fed into the public grid.

This is important, because energy storage solutions in particular depend on intelligent and efficient cooperation between numerous components – from batteries, power distribution and climate control to monitoring and controlling the entire system.

Even before it was commissioned to work on the two energy storage systems for Mercedes-Benz Energy in 2018 and 2019, Rittal was part of a development consortium at the Mercedes-Benz site in ▸

9 GW / 17 GWH

was stored in large storage systems with installed battery systems worldwide in 2018.

1,095 GW / 2,850 GWH

is set to be stored in large storage systems with installed battery systems worldwide by 2040.

Source: Bloomberg New Energy Finance (BNEF) 2019

INTERVIEW

Energy storage – the key to success

An interview with Jens Liebold, Business Development Manager at Mercedes-Benz Energy in Kamenz, about battery storage systems and their industrial use.

"Day in, day out, we're working on getting the most out of a battery."

Jens Liebold
Business Development Manager
at Mercedes-Benz Energy

Everyone is talking about electromobility and the circular economy. What exact approach is Mercedes-Benz Energy taking?
Making smart use of automotive battery systems is an important approach when it comes to handling resources efficiently. The aim of Mercedes-Benz Energy is to make the most of a battery's potential by turning it into an energy storage system to extend its life cycle. It's essential to closely interlink the energy and automotive industries as we pursue carbon neutrality.

So Mercedes-Benz Energy is a kind of bridge between the two industries?
The stationary storage solutions from Mercedes-Benz Energy can be used for everything from balancing load peaks to black starts and uninterruptible power supplies – UPSs. The energy revolution is making load peak balancing in particular increasingly important. For example, our storage systems help balance out the volatile generation of power from renewable energies and keep the voltage in grids constant. In the energy industry, this is referred to as the operating reserve. The large storage systems we have already installed in Germany provide an operating reserve of around 40 megawatts, which accounts for just under ten per cent of the total operating reserve required.

Is load peak balancing of this kind also suitable for other applications?
Industry, too, is showing a growing interest in the battery storage systems from Kamenz. After all, vehicle batteries can optimise load management and therefore costs wherever energy-intensive processes are taking place. Industrial customers pay a demand-based charge that remains the same throughout the year and relates to the peak demand. Storage systems reduce consumption peaks by feeding in energy at the appropriate time, so investing in a stationary storage system quickly pays off for many companies.

You mention raw material efficiency as an important factor. What exactly does that involve? Once lithium-ion batteries have served their purpose in a vehicle, if they can be used and marketed for another ten years by being integrated into a large energy storage system, for instance, then their economic value is doubled. At the same time, this extended period of use improves the batteries' eco credentials, because their valuable raw materials remain in circulation. Only at the very end of their life cycle are they recycled. We want to make the entire Group and also our customers more aware of this. Batteries may no longer be able to meet the original requirements after operating for a certain period and may not therefore be suitable for the spare parts market, but they definitely have the potential to be put to good use in a stationary storage system. Small losses of capacity aren't as much of an issue in a stationary storage system, so it's more a case of **"keeping batteries fit"**. Regularly charging and discharging batteries acts as a kind of live-cell therapy.

Do particular prerequisites need to be met when using a stationary energy storage system?
The ambition of many companies is to make their production completely carbon neutral, and lithium-ion batteries could play a key role in this. A large number of industrial customers need direct current – also referred to as DC current – to power items such as electric motors, electronic control units, computers and LED lights. Consequently, alternating current – or AC current – from the grid is converted, sometimes in several stages, and energy is lost during this process. A DC power supply eliminates at least one conversion stage and is therefore clearly more efficient, especially if plants are supplied with direct current from a local photovoltaic system to start with.

Perfectly protected. Rittal enclosure systems ensure not only the safe accommodation of batteries, but also safe control and power supply technology, as well as power electronics.

Sindelfingen, along with a number of other high-profile companies. The basic idea is to operate an efficient DC grid to supply production facilities with green electricity, some of which will be recovered and stored.

"The fact is, smart DC grid and energy storage applications that are currently being implemented in the field at companies such as Mercedes-Benz are becoming game-changers. Given that sustainability and profitability now go hand in hand, it's evident that industry is willing and able to actively drive the transformation from fossil fuels to renewable energy," says Scholl.

INSIGHT INTO A BATTERY STORAGE SYSTEM

Details of the components Rittal installed in the pre-assembled energy storage systems at Mercedes-Benz in its role as system supplier are classed as ▸

FIND OUT MORE

Video

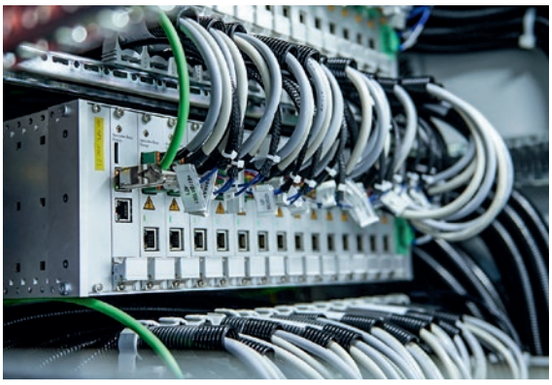
The energy revolution and energy storage systems

The energy revolution is impossible without energy storage systems. The reason for this is very simple. A continuous, stable power supply depends on intermediate storage, because green electricity is generated from the sun and wind, that is to say on a discontinuous basis. Development work in this field is focusing on everything from widely available button cells and lithium-ion batteries for electric vehicles to new buffer technologies in the form of artificial atolls, concrete spheres and limestone mountains. Gigantic liquid batteries are even currently being built in underground caves in the far north-western corner of Germany. But it's when structural and procedural engineering – that is to say new materials, new production processes and new digitalization methods – come together in a holistic approach that things get really smart, as in the case of pioneering Mercedes-Benz at its long-standing site in Sindelfingen.

The new Factory 56 is establishing the age of carbon-neutral automobile production thanks to enterprising energy architecture. It is demonstrating that energy storage systems will provide more than just a storage function in the future. They will also play a key role in smart networking with decentralised energy generation facilities. Only if photovoltaic systems, wind farms, micro-CHP plants and other energy generators, consumers and storage systems are linked and controlled digitally is it possible to perfectly synchronise energy consumption and generation in households, commercial enterprises and industry.

Everything under control: The battery storage system's performance data finds its way into the globally available MO360 digital ecosystem – a series of software applications that are connected via interfaces.

Role model: Factory 56's pre-assembled energy containers are a blueprint for Mercedes-Benz plants worldwide.



Reliably networked: Rack systems are also used for the secure and compact installation of network technology.

a trade secret. However, it almost goes without saying that energy storage solutions of this kind need a climate-proof steel enclosure, rack systems with heavy-duty shelves to hold the batteries securely, raised floors for problem-free cable laying, robust power distribution and intelligent, in this case, entirely DC-based climate control.

Anyone looking for a conventional power socket will be disappointed, though. Why would one be needed? All the power electronics are located in the adjacent container. In the future, it will naturally also be possible to store the battery storage system's performance data in the cloud for processing in the MO360 digital ecosystem – a family of software applications that are connected to interfaces and a standardised user interface. The system incorporates information from the most important production processes and IT systems of Mercedes-Benz plants around the world. ■

INTERVIEW

"IT needs energy and energy needs IT"

What will be the "hottest game in town" during the 2020s? That's the million dollar question. Will it be comprehensive digitalization focusing on Industry 4.0? Will it be the development of the healthcare market? Or could it be transforming the way we generate, store and distribute power? Uwe Scharf, Managing Director Business Units and Marketing at Rittal, discusses this issue.

"Rittal offers the ideal system solutions for any storage application."

Uwe Scharf
Managing Director Business Units and Marketing at Rittal

So, Mr. Scharf, which "blockbuster" will it be? Here at Rittal, we like to look at the bigger picture. After all, the digital and energy transformations in particular go hand in hand.

Is that why Rittal created its new Energy & Power Solutions business unit in 2020? IT needs energy and the energy industry needs IT. The one is now inconceivable without the other. Even turning energy systems into a smart grid requires intelligent networking between the various facilities. Having said that, the energy sector on its own is a highly attractive growth sector. The aim of our new business unit is to further develop and improve solutions in dialogue with our customers, and to bring them to market even faster.

So we've got power and data, and both need to be securely housed. What is the extent of the Rittal portfolio for energy storage? Let's put it like this, Rittal offers the ideal integration solution for any storage application. After all, our portfolio includes a whole host of standard products that are tried and tested in industry. These include bayed enclosure systems, standardised containers, distribution enclosures, climate control equipment – from fan-and-filter units to chillers – and monitoring solutions, all perfectly coordinated and combined in each individual case.

What does your new business unit contribute to this? We have many years of expertise in the energy market and a well-developed range of products and services – from enclosure, power distribution and climate control technology to IT infrastructure solutions and Eplan software solutions for system planning. We also offer a global service. Consequently, we already cover countless applications, and we're embracing the challenge of breaking new ground and making our climate control units part of an efficient smart DC grid. As part of the EU's AREUS research project, for example, we converted our Blue e+ series of cooling units – which already consume 75 per cent less energy than conventional products – to DC operation. The patented hybrid process is the only one of its kind anywhere in the world.

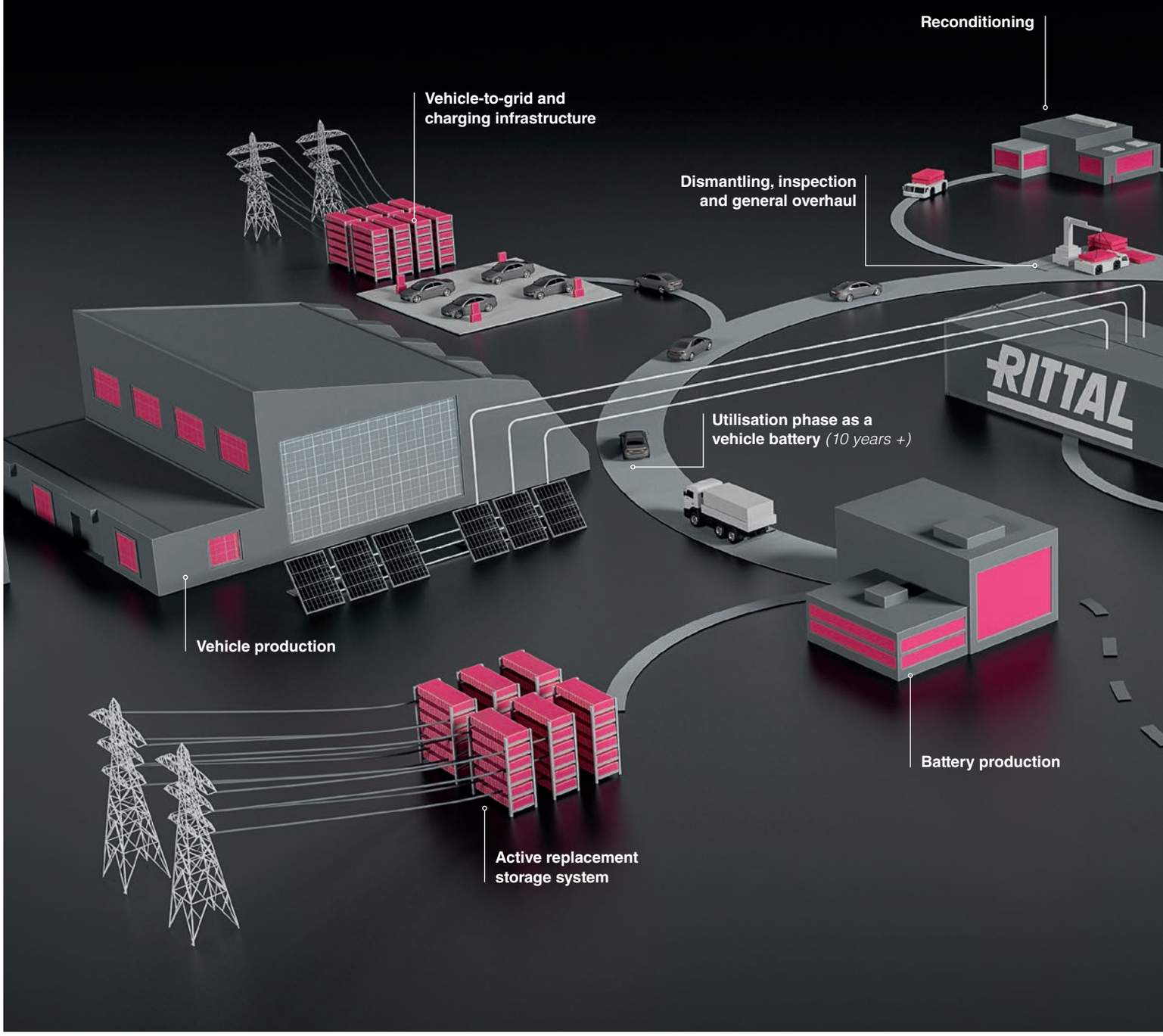
Not many people are aware of this, but Rittal is also a world market leader in enclosure technology for wind turbines, isn't it? That's right. However, our solutions can be found in all kinds of power generation plants, in substations, in low-voltage switchgear in the charging infrastructure for electric vehicles and in energy storage applications.

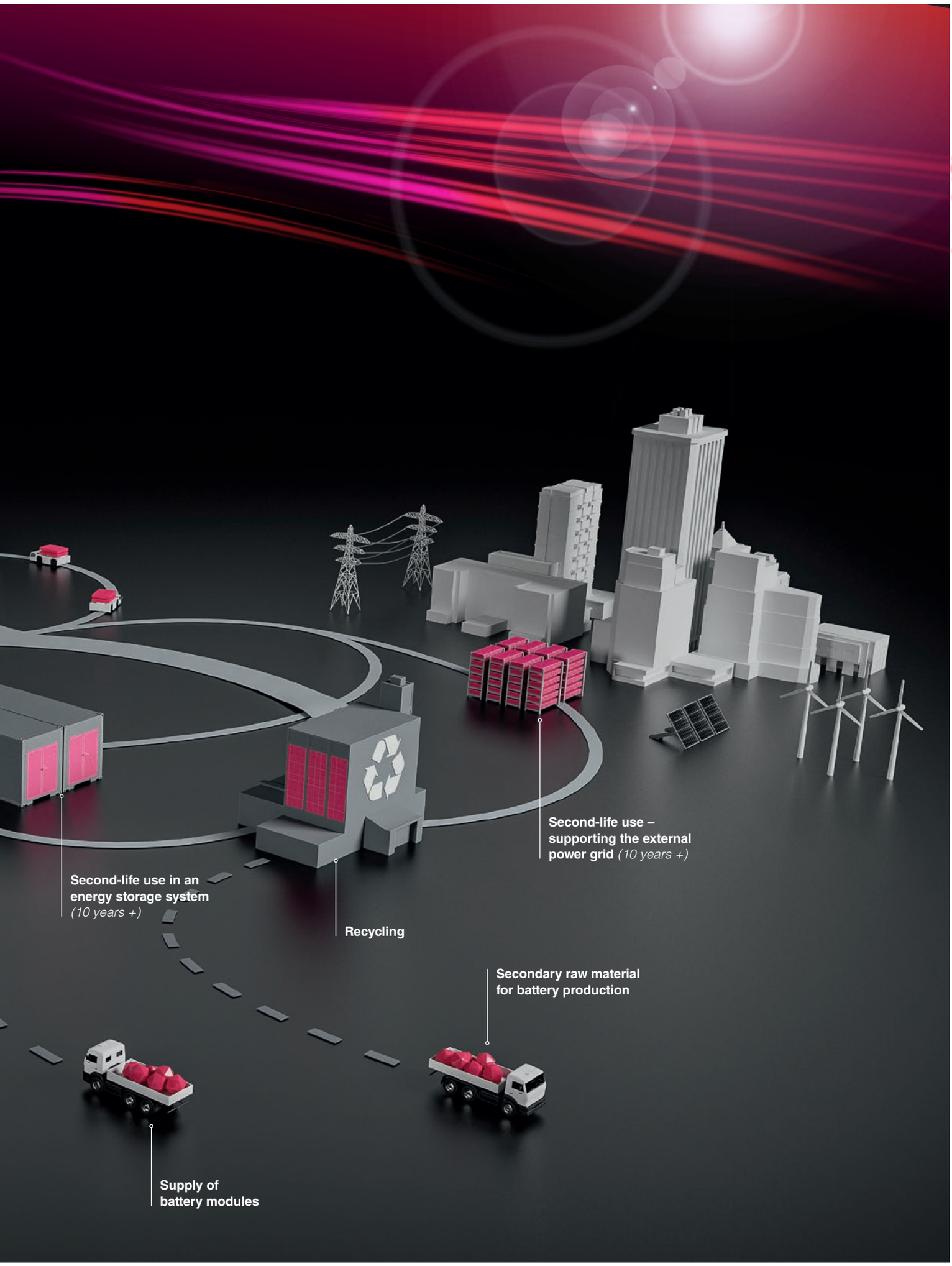
FIND OUT MORE

DC voltage supply in automotive engineering

Product life cycle of a battery

Multiple use meets zero waste concept – a true circular economy breaks the link between growth and resource consumption in battery management. The second-life use of batteries in energy storage systems for the intermediate storage of green electricity is an integral part of this.




Second-life use – supporting the external power grid *(10 years +)*
Second-life use in an energy storage system *(10 years +)*
Recycling
Secondary raw material for battery production
Supply of battery modules

Battery storage systems for electric charging stations

RAPID CHARGING MADE EASY

The automotive industry is making the switch. From Audi and Volvo to Fiat and Vauxhall, ever more manufacturers are committing themselves to a date for saying goodbye to internal combustion engine technology. However, there are still a number of obstacles to overcome on the path to **electromobility**. One of these is rapid charging. **Commeo, Schulz Systemtechnik and Rittal** are demonstrating how **battery storage systems** are the answer.

Text: Dr Jörg Lantzsch and Hans-Robert Koch

It takes just a few minutes at a conventional filling station. Your car soon has a full tank again and can cover several hundred more miles before it needs to be refuelled. Electric vehicles now have an acceptable range, and progress is also being made with high-speed charging technology. With the current battery technology, charging equipment and cables, around half an hour's rapid charging is sufficient for a range of a few hundred miles. However, major challenges still exist when it comes to building the charging infrastructure. In many cases, for example, distribution grids are not designed to provide the capacity required for rapid charging.

MAINS CONNECTIONS ARE OFTEN INADEQUATE

Domestic power outlets provide charging capacities of between 10 kW and 35 kW per residential unit, which means typical garage wallboxes for charging electric vehicles have a maximum capacity of 11 kW. That may work for a single vehicle sitting

in the garage of a family home overnight, but if several vehicles need to be charged at the same time in a larger residential complex – in an underground car park, for instance – the available capacity is inadequate in most cases. Rapid charging in particular is impossible with conventional mains connections. Even industrial properties have their limits. Unless they have their own medium-voltage connection, the available capacity is barely adequate for rapid charging.

BATTERY STORAGE SYSTEMS ARE THE ANSWER

Expanding distribution grids is an extremely costly and time-consuming business, but one solution to this problem is to use battery storage systems that are installed along with charging columns. These can store power from the grid to make the charging process much faster. Provided there is no electric vehicle at the charging station, the batteries store the electrical power from the grid. If a vehicle then needs to be charged quickly, the battery system can boost the capacity.

Schulz Systemtechnik GmbH has set up a charging station based on this principle at its headquarters in Wallenhorst. The company develops automation solutions, adopting a multidisciplinary approach that encompasses everything from mechanical and electrical engineering to IT expertise. Besides covering the entire charging infrastructure, it also skilfully combines different energy solutions to create one efficient system. In Wallenhorst, the plant specialist has developed a charging station with a charging capacity of 150 kW that is available to visitors and the public for rapid charging. "Given that our mains connection at the site has a reserve of just 110 kW and expanding the grid with a new medium-voltage transformer would have required a huge investment, we decided on the alternative of a battery storage system," explains Tobias Schulz, CEO of Schulz Systemtechnik GmbH.

The project was successfully implemented in collaboration with Commeo and Rittal. Commeo GmbH supplied the battery storage system and Rittal the necessary outdoor enclosures and system technology. Commeo and Rittal have been working together on energy storage projects for a number of years now. "Our battery storage systems are based on lithium-ion technology. They need ambient conditions to stay within an optimum range, especially when a permanent discharge capacity of over 4C is required, as is possible with our power systems," says Michael Schnakenberg, CEO of Commeo. If batteries are forced to operate at excessively low or excessively high temperatures, the storage system suffers. System technology from Rittal creates the basis for compact storage systems where the batteries can work under optimum ambient conditions.

These batteries are housed in a double-walled outdoor enclosure with a

"Our energy storage systems are a benchmark with the 'Made in Germany' hallmark."

Michael Schnakenberg
CEO of Commeo GmbH

Making life easy is the answer: Charging works just like refuelling at a conventional filling station. Commeo's battery storage solution is located right next to the electric charging column, securely housed in an outdoor enclosure from Rittal (right).

365,300 electric cars were licenced in Germany in April 2021

Germany currently has 23,300 charging stations

Dream team: The charging infrastructure consists of an electric charging column and a battery system in an outdoor enclosure from Rittal (at the rear).

robust surface that is resistant to sunlight, rain and corrosion. The equipment inside is also protected against vandalism and slight knocks when cars are parking up.

PERFECT CONDITIONS FOR THE BATTERIES

The system is equipped with enclosure heating and an energy-efficient cooling unit from the Blue e+ series. Whatever the weather, this means the temperature of the batteries always stays within the optimum operating range of between +5 °C and +35 °C. The outdoor enclosure also reliably protects against moisture, because the double-walled design means there is virtually no internal condensation. “Unlike other suppliers, we don’t use water to cool the energy storage blocks, meaning they require absolutely no maintenance and can be used far more flexibly,” explains Schnakenberg. The individual blocks themselves have cooling fins on the side of their casing only, with thermal management taken care of by the enclosure’s climate control. “The availability of four different cell chemistries, systematic modularisation and the currently unparalleled level of safety make our energy storage systems a benchmark for industrial and commercial applications – all with the ‘Made in Germany’ hallmark,” continues Schnakenberg. Using industry-proven components such as plug-in connectors and enclosures makes the Commeo systems far, far easier to build and extend.

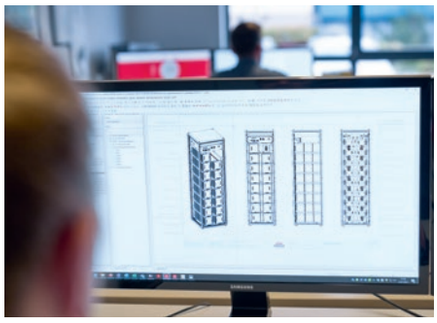
“Clever combinations can create an ideal and, most importantly, reliable charging infrastructure.”

Tobias Schulz
CEO of Schulz Systemtechnik

VX25 – THE PLATFORM FOR BATTERY STORAGE SYSTEMS

The VX25 framework from Rittal serves as the mechanical basis for the systems. Commeo sees this solution’s suitability for industrial use as a key advantage. Excellent frame stability thanks to a load-carrying capacity of 1,500 N means heavy battery systems can be installed without any problems – even in a flexible arrangement between enclosures. A total of 45 battery blocks, each with a capacity of 1.5 kWh, are snugly housed in a single rack in the battery storage system enclosure, which is only around 70 cm wide. The remaining space can be used for control technology from Commeo, climate control and further installed equipment.

The modular system from Rittal includes all necessary components – from enclosure lighting and climate control to monitoring systems for temperature and humidity. At the engineering stage, Schulz



Reliable protection: The climate-controlled outdoor enclosure keeps the battery storage systems working to optimum effect (above). **Efficient planning:** 3D design planning with Eplan Pro Panel generates the system's digital twin.

Easy as anything: The VX25 enclosure system accommodates Commeo's heavy battery systems without any problem.

1,000,000

public charging points is the European Green Deal target for 2025

287,000

public charging points are currently available in Europe

Systemtechnik also benefited from the Eplan Data Portal, which includes all relevant data for electrical and design planning – not just for Rittal modular system components, but also for the Commeo battery blocks. Using this data simplifies both electrical planning in Eplan Electric P8 and 3D design planning in Eplan Pro Panel, during which a digital twin of the system is generated. Commeo also supplies the charging station's energy management system, which monitors and controls all components – from grid feed-in and the battery storage system to the actual charging technology, including the billing system. The enclosure monitoring technology is connected, too, along with the activation system for climate control.

RAPID CHARGING IS POSSIBLE

The charging system built by Schulz Systemtechnik demonstrates how battery technology enables rapid charging, even if the capacity of the mains connection is actually inadequate. "Combining energy storage technology from Commeo with system technology and outdoor enclosures from Rittal creates an ideal and, most importantly, reliable charging infrastructure," says Schulz with conviction. ■

FIND OUT MORE

Charging infrastructure
www.rittal.com/emobility

SCHULZ SYSTEMTECHNIK
www.schulz.st/en

commeo energy storage solutions
www.commeo.com/en

NEWS

THE NEW VX25 TOPTHERM CHILLERS FROM RITTAL

Powerful cooling with a small footprint

Precision needs a cool head – and that doesn't just apply to people. Machine tools, for example, need exact temperature control with liquid cooling for precise metalworking. The new **Rittal TopTherm chillers in the VX25** enclosure offer exactly that – and all with a minimised footprint for the benefit of both the shop floor and the environment. Suitable for baying flexibly within the VX25 system, their space-saving design has a footprint that is 34 per cent smaller. New fan technology, optimised software and better heat exchangers **reduce the carbon footprint** by up to 35 per cent. Thanks to microchannel technology, these chillers operate at full power with 40 per cent less refrigerant.

The new chillers are available in four output categories ranging from 8 to 20 kW. Precise temperature control, total temperature precision, integral safety functions and monitoring all ensure safety. The new VX25 TopTherm chillers are available ex-stock and can be delivered quickly.

Eplan eManage

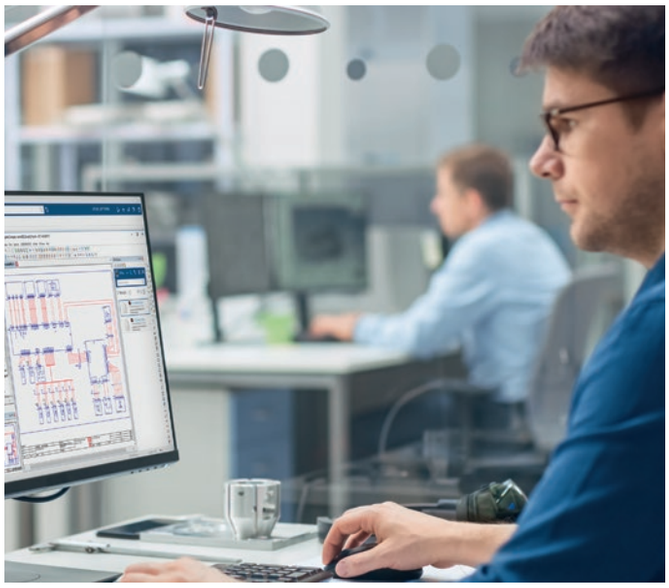
Now available as a full version too

In addition to the free version of **Eplan eManage**, a full version is now also available to purchase. The **cloud-based software** makes it possible to collaborate across different projects and locations – data can be shared quickly and securely with colleagues, suppliers and clients, and projects can be uploaded from the Eplan Platform or the web browser to the Eplan cloud environment. The full version offers a number of benefits – it backs up project data, including data in earlier Eplan versions, makes Eplan Platform 2022 master data available and offers greater data storage. What's more, the people involved in the project now have access to important accompanying documents as well.

RITTAL SUPPORT ARM SYSTEMS

Longer and more convenient

Human/machine. Support arm systems are used wherever machine operator units and terminals need to be positioned flexibly and be moveable. By extending its range of **height-adjustable support sections**, Rittal is now offering even more flexible working conditions for day-to-day activities in production. Designed to carry up to 60 kg, these support sections can be precisely adjusted to suit the operator's height and field of activity. The new support section has a system length of 1,100 mm, while its lifting height is almost 400 mm more than that of the two existing support sections. It is therefore an ideal addition to the support sections measuring 741 mm and 790 mm in length.



Searching for, finding and creating projects has just got easier thanks to the new PLM data bridge.

NEW PLM DATA BRIDGE

Routine processes made easier

Eplan has developed a new standard integration to the Dassault Systèmes Product Life Management (PLM) platform – the **PLM 3DExperience Connector (3DX).** The integration seamlessly embeds Eplan Platform solutions into the PLM environment. Consequently, product data management as part of end-to-end PLM processes from engineering to production becomes even more efficient and the automation of routine processes in particular makes everyday work easier for users. Traditional tasks such as searching for, finding and creating projects, checking in and out, or exporting CAE projects in a neutral format can all be carried out much more efficiently via the new PLM data bridge. During the interaction, Eplan and 3DX communicate bidirectionally with one another. Checking in CAE projects in 3DX is automated, as is opening projects in the PLM software.

Important descriptive PDM attributes, such as information for the drawing header, can be added in 3DX and are then automatically available in Eplan. Furthermore, the software also supports traditional PDM functionalities, including the release or transfer of documents to manufacturing. Another advantage is that users can control all work steps from their familiar working environment.

FIND OUT MORE

www.eplan.co.uk/company/press/plm-data-bridge-for-bi-directional-exchange/

NEW RITTAL SCAN & SERVICE APP

Transferring device data faster

An easy way to save time! The new Rittal Scan & Service app saves you time by establishing a connection between your smartphone and a climate control unit via NFC for transferring all device data and parameters. This really speeds up the commissioning process and much less time is needed for configuration. Furthermore, a fast copy function means that all settings on one climate control unit can be transferred to as many other climate control units as you like. The app can also be used to scan the QR code on almost any Rittal rating plate to see all relevant product information such as technical details, instructions or tutorials.

Download the **Rittal Scan & Service** app now:

GET IT ON Google Play

Download on the App Store

EPLAN AND MACHINEERING

Bringing mechatronics to life

Virtual commissioning is becoming more and more important in machine and plant engineering. Eplan and Machineering have therefore developed a bidirectional interface to enable **comprehensive simulation at any time,** ranging from PLC assignment and all inputs and outputs to detailed planning in the enclosure and the graphic display of all mechanical components. “This is mechatronics brought to life,” says Christian Klaus, International Partner Manager Strategy & Corporate Program at Eplan.

RiMatrix Next Generation guards against

DATA CENTRE BLACKOUTS

A power failure is a nightmare for any data centre operator. It results in unscheduled downtime with unforeseeable consequential costs that, in the worst-case scenario, can threaten a company's very existence. Such outages can be caused by system faults, human error or natural disasters, but what can data centre operators do about it? They need IT infrastructure solutions that ensure a reliable energy supply with high availability – step forward **RiMatrix NG from Rittal**.

Text: Petra Adamik and Hans-Robert Koch

"RiMatrix NG offers our customers an ingenious modular system in large-scale series production quality to create custom data centre solutions with a high level of scalability."

Jörg Kreiling
Director Energy & Power at Rittal

Power failures in data centres have dire consequences for business, industry and people's everyday lives. In August 2020, for instance, a power blackout caused data centres throughout Europe to stop working. Internet services immediately went down, with Virgin Media, Equinix, Microsoft and Cloudflare just a few of the big-name companies whose infrastructure was hit by the outage. Complex technologies such as edge and cloud computing, and new applications for smart factories and smart cities are also increasing the risks.

What issues should data centre operators consider when it comes to making their IT future-proof and how does the new RiMatrix Next Generation IT infrastructure platform from Rittal help?

1. COORDINATED SYSTEMS

To ensure the high availability of a data centre, server systems must be stable and reliable in terms of operation. Perfectly coordinated infrastructure solutions – from rack and power to climate and monitoring – are the basic prerequisite for this. More specifically, solutions are needed for the mechanical protection of servers, reliable, high-quality power supplies, load-controlled, efficient cooling systems for an optimum energy balance and, last but not least, intelligent monitoring systems that have an overview of and control all key status parameters.

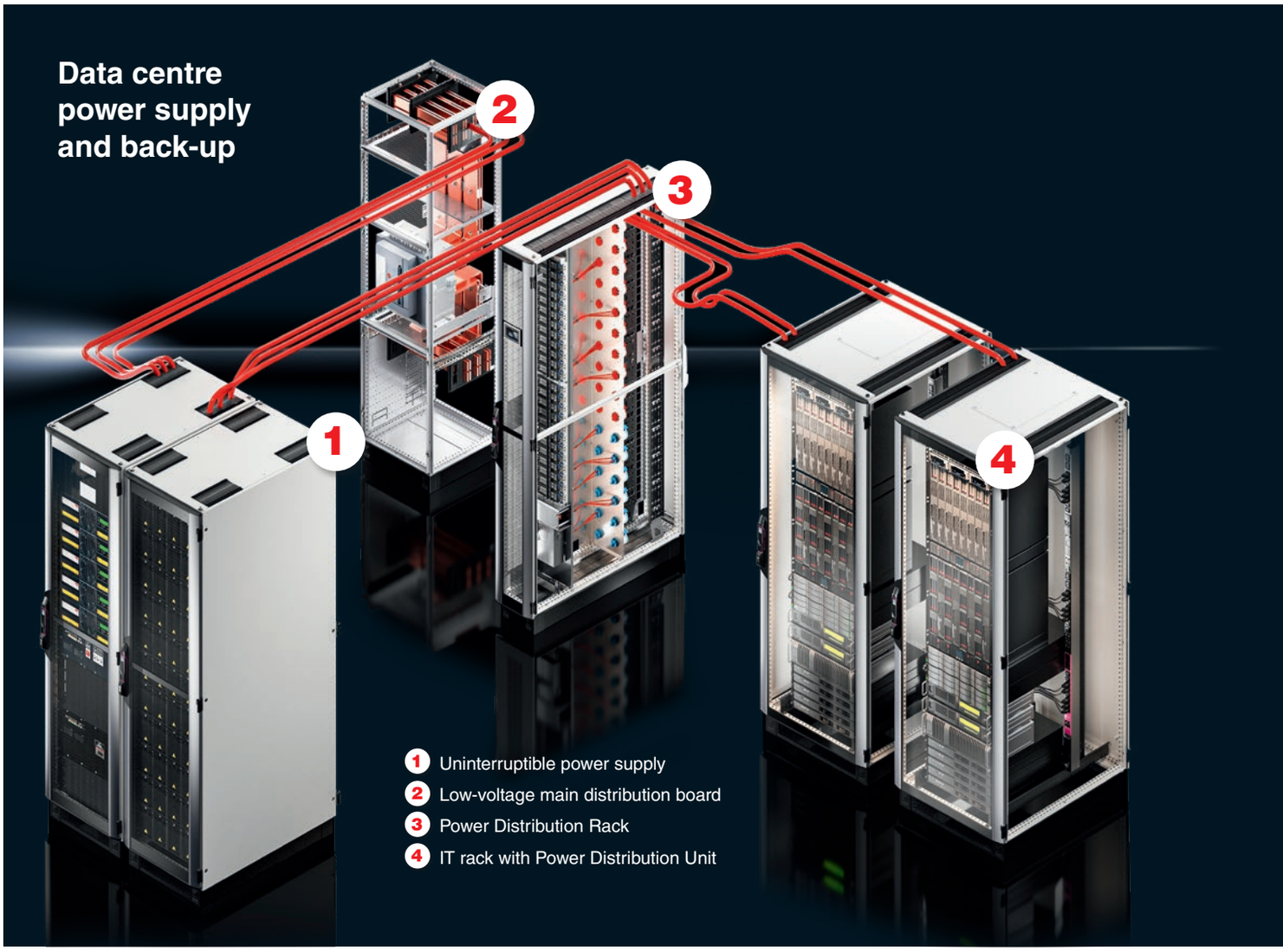
Modular system technology can grow in line with the requirements and therefore plays a key role in ensuring reliable power supplies and back-up. For this very purpose, Rittal developed the RiMatrix Next Generation (NG) modular system platform, which also covers all aspects of the power supply in data centres. "RiMatrix NG offers our customers an ingenious modular system in large-scale series production quality to create custom data centre solutions with a high level of scalability," says Jörg Kreiling, Director Energy & Power at Rittal. The system also supports the redundancy concept that data centre operators increasingly need to implement in their infrastructure's power supply.

The low-voltage main distribution board (LVDB) is the data centre's power supply hub. Besides coordinating the grid and generator power supplies – switching from generator to grid and vice versa – and the service bypass, it also supplies power to the compact downstream sub-distributors, which are called Power Distribution Racks (PDRs) and are just 300 mm wide. Switching processes are buffered via the UPS (uninterruptible power supply), which ensures the permanent availability of all components. The LVDB is therefore an important link in the data centre's energy chain.

Rittal recommends a combination of Ri4Power and RiLine60 for the modular low-voltage main distribution board. The power distribution system is based on the VX25 rack platform with its modular front design. The configuration can be varied. Standard solutions from various ACB/MCCB manufacturers can be installed thanks to ACB isolators. Combining the enclosure system with the 60 mm busbar system RiLine60 turns it into a modular low-voltage distributor.

2. RELIABLE POWER SUPPLY WITH HIGH AVAILABILITY AND BUILT-IN REDUNDANCY

To handle the problem of power failures, data centre operators should back up their critical infrastructure as appropriate.



This includes ensuring supply redundancy by obtaining power from two different energy suppliers or, if that is impossible, from different substations, transformers with a redundant design and low-voltage main distribution boards (LVDBs).

A UPS is a further must in a professional energy supply and back-up concept for data centres so as to reliably bridge unscheduled power outages. “UPS systems run permanently in parallel in a data centre environment and ensure the continuous availability of components if the power supply fluctuates or fails,” explains Kreiling.

The UPS operates with a DC intermediate circuit. The alternating current supplied at its input is subsequently “chopped” in the UPS itself and converted into direct current. This is converted again at the output, creating a completely new, “cleaned” alternating current. The input and output are independent of each other. By eliminating disruptions, the intermediate circuit ensures a fault-free power supply for the grid and its IT components. Via its partner ABB, Rittal offers online UPSs in the form of UPS racks in the RiMatrix Next Generation portfolio. These 3-phase UPS systems combine rack-mounted modularity with a compact design and an efficiency of up to 96 per cent in double conversion mode. Output classes ranging from 10 kW to 200 kW per rack are available. If necessary, modules can be replaced without having to interrupt operations. In the event of a failure, only the affected module needs to be switched. Data centres benefit from both the redundant design and the efficiency of this UPS concept.

3. MAXIMUM TRANSPARENCY

Power Distribution Units (PDUs) ensure maximum energy transparency. They can measure the distributed electrical parameters, but also switch loads and identify environmental influences. This gives administrators an in-depth insight into the conditions in the rack, which simplifies troubleshooting if the worst comes to the worst. The values determined can also help implement energy efficiency measures and reveal usage potential. “Rittal has developed a new generation of PDUs that integrates seamlessly into the modular power distribution and back-up concepts that can be implemented using the RiMatrix NG platform,” explains Kreiling. “Their compact design makes them easy to incorporate into any IT rack in

Online UPSs: Via its partner ABB, Rittal offers online UPSs in the form of UPS racks in the RiMatrix Next Generation portfolio.

Differential current measurement – identifying fault currents

A data centre's integrated differential current monitoring detects and reports fault currents in the power supply or server/power supply units before IT personnel are put at risk or the data centre grinds to a halt. These issues could be caused by wiring insulation defects that develop over time or components that are faulty or affected by premature aging, for example. A RCM (residual current monitoring) solution can prevent operations from being disrupted due to a power failure or a fire. Integrating several RCM sensors into the PDU (Power Distribution Unit), directly in the IT rack, enables faster, more detailed fault analysis than centralised RCM solutions in a sub-distributor.

the Rittal portfolio. Tool-free attachment using clips makes installation far easier," he adds. The power-saving design and low internal energy consumption have a positive impact on the data centre's energy balance. The PDU controller module and overvoltage protection can even be replaced while the data centre is operational.

The new PDUs are available in five variants that cover all data centre applications. They range from the Basic version for simple power distribution to the Managed version in which measurement and switching takes place output by output. Between these two options, there is also a Metered version for measurement per phase and Metered Plus for measurement per output slot. Besides this, the PDU has four sensors that integrate key monitoring functions. This gives administrators a permanent overview of parameters such as humidity and temperature as well as personalised access alarms such as door monitoring and locking systems. Meanwhile, those who prefer to use the Rittal Computer Multi Control Systems (CMC III) to monitor environmental parameters can utilise up to 32 sensors to do just that. Thanks to its scalability, the new PDU family from Rittal covers a wide range of requirements. What's more, these components combine the ultimate in energy and cost efficiency with maximum availability of the entire system. That protects investments and cuts operating costs.

4. USE OF SUSTAINABLE SOLUTIONS

Batteries are the heart of a UPS. Cost-effective lead-gel technology is mainly used at present, but lithium-ion technology is also becoming more popular in UPS systems and is already considered the state of the art in some areas. Customers opting for this technology benefit from high availability and efficiency, but it is more expensive than the lead-gel option.

"Using fuel cell technology to supply power is still a long way off, but Rittal is already working on practicable solutions," reveals Kreiling. This technology is set to power the generators of large data centres in the future. As a result, users will no longer need to worry about the size of their diesel tank, which is still used to power generators at present. The shrinking supply of fossil fuels is another reason why fuel cell technology could become an attractive alternative to current solutions. It has a positive impact on a data centre's energy balance. ■

FIND OUT MORE

www.rittal.com/IT-Power

THE FUTURE LOOKS GREEN

Stahlo Stahlservice – green steel on the agenda

"The switch to green steel, which is just getting started, will throw up a whole host of questions for steel users," insists **Oliver Sonst**. The CEO of **Stahlo Stahlservice**, a member of the Friedhelm Loh Group, sees **green steel** as one of the key strategic issues on the agenda right now.

Text: Markus Huneke

A carbon-free economy – it sounds so simple, but for most sectors, especially those involving sophisticated industrial production, it has far-reaching consequences that are still hard to fully grasp at present. The main focus is on two industries – car manufacturing and steel production – together with all their upstream and downstream supply and processing stages.

PROCESSORS WILL HAVE LOTS OF QUESTIONS

"Naturally, we can't yet say how the steel industry's switch to green steel will actually take shape, but we're taking the transformation very seriously and putting out feelers," says Sonst. "It's not a publicity stunt for us. We're actually discussing the possibilities with steel producers," he emphasises. While automotive manufacturers are battling to completely eliminate the emissions associated with their vehicles during production and subsequent use by customers,

"Our excellent, well-established contacts with both manufacturers and users of steel mean we can view the issue of green steel from several different perspectives and build up outstanding expertise."

Oliver Sonst
CEO of Stahlo Stahlservice

steel manufacturers are faced with the task of turning the well-established, sophisticated process of steel production on its head. This is a big economic risk, with no guarantee of success.

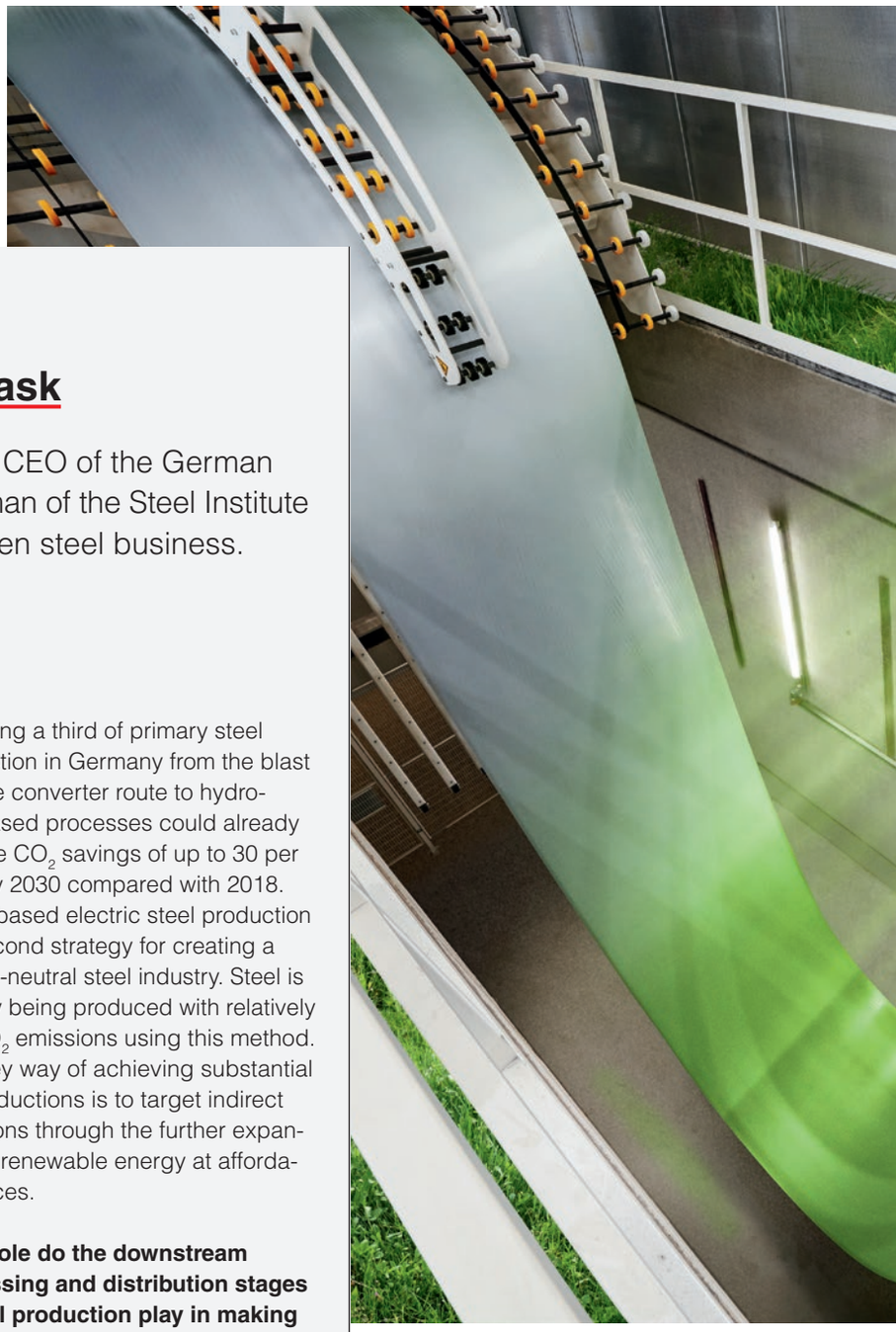
Recent announcements by virtually all major European car manufacturers that they are intending to use green steel in the future show how closely intertwined the two industries are. Daimler, for instance, is looking to start switching its vehicles to green steel from 2025 onwards. In parallel to this, all Europe's big steelmakers are investing millions in projects aimed at achieving carbon-free steel production.

WHAT GREEN STEELS ARE ACTUALLY AVAILABLE?

Although it's still early days for green steel technology and too soon to confirm that it can be implemented efficiently on a large scale, progress is slowly but surely being made. The challenges aren't restricted to the start and end of the steel process chain, that is to say production and use. Switching the parts of the value chain in between to green steel technology is also a huge task.

For example, which steel grades will actually be available with the necessary green credentials and when, which manufacturers will be able to supply which grades and, most importantly of all, how much will they cost? Ultimately, whether or not a material succeeds on the market is down to the range available and the associated terms and conditions. Sonst considers it vital to help customers and partners find out more. As an independent steel service centre that has been supplying materials to the automotive industry for many years, Stahlo is in an ideal position to obtain the necessary knowledge quickly.

"Our excellent, well-established contacts with both manufacturers and users of steel mean we can view the issue of green steel from several different ▸



INTERVIEW

Green steel – a mammoth task

Hans Jürgen Kerkhoff, President and CEO of the German Steel Federation (WV Stahl) and Chairman of the Steel Institute VDEh on the prospective business green steel business.

Will green steel really become widespread?
The necessary political framework has so far been lacking. Such a framework would need to be established, amongst other things by systematically implementing the Steel Action Concept published by the German government last summer and by adding an industry policy perspective to the EU's Green Deal. Given the mammoth task involved in moving towards green steel production processes, it's also essential to clarify how we can effectively avoid putting the steel industry in Germany and Europe at a competitive disadvantage compared with the rest of the world. Achieving that will stop carbon leakage, that is to say the transfer of energy-intensive production and emissions to other regions of the world with less strict climate protection requirements.

What are the consequences of the green steel transformation for the steel industry, industrial production as a whole and society?
Switching a third of primary steel production in Germany from the blast furnace converter route to hydrogen-based processes could already achieve CO_2 savings of up to 30 per cent by 2030 compared with 2018. Scrap-based electric steel production is a second strategy for creating a climate-neutral steel industry. Steel is already being produced with relatively low CO_2 emissions using this method. One key way of achieving substantial CO_2 reductions is to target indirect emissions through the further expansion of renewable energy at affordable prices.

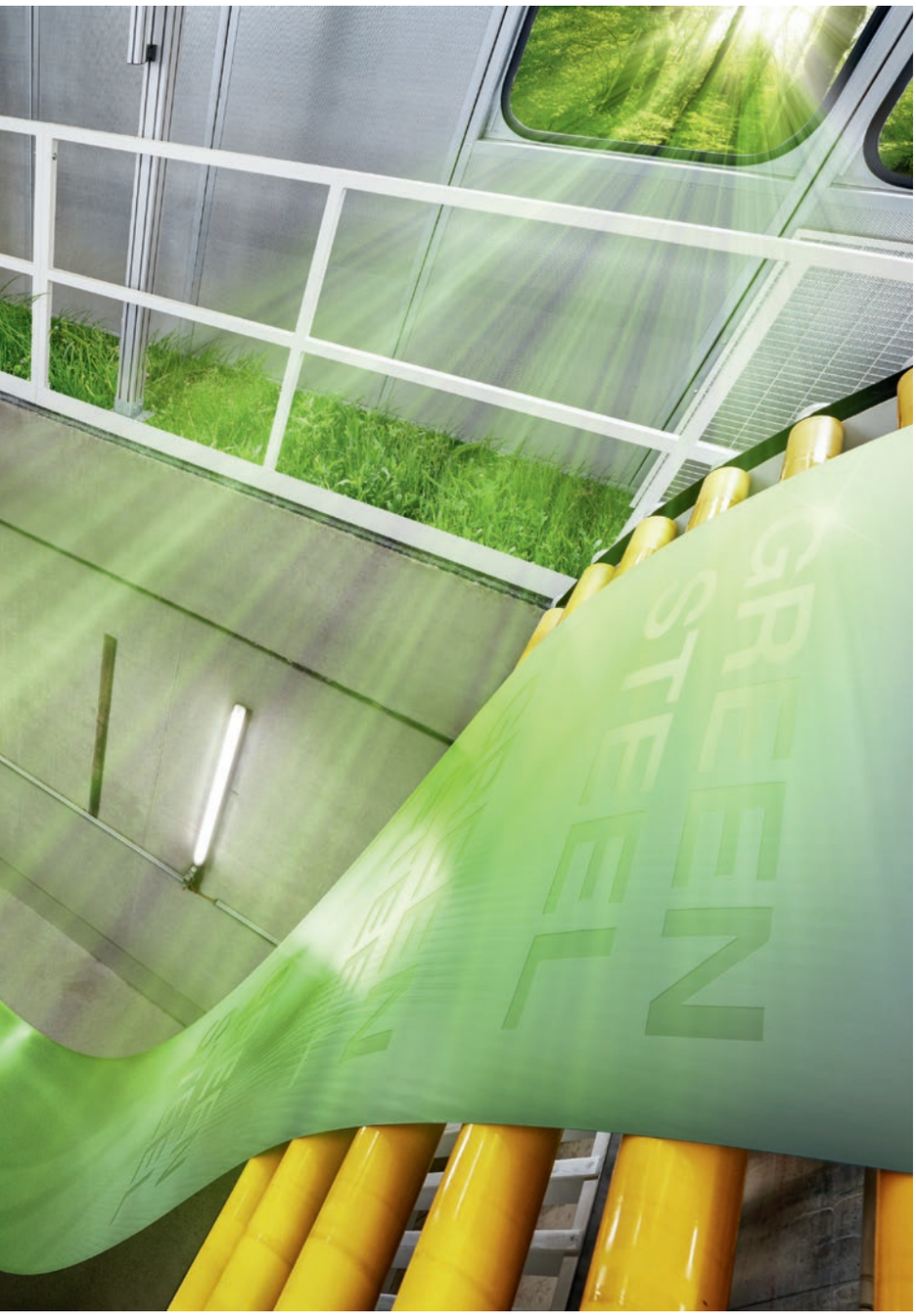
What role do the downstream processing and distribution stages in steel production play in making a success of the transformation to green steel?
Steel is the starting point for a large number of industrial value chains. A large proportion of the total emissions generated during the life cycle of key steel-intensive capital and consumer goods such as cars and household products is accounted for by CO_2 emissions during the manufacturing phase, that is to say material usage. Consequently, the transformation of the steel industry is a prerequisite for decarbonising the entire process chain. However, this will only work if the companies involved in other processing stages, trading and distribution support the transformation by decarbonising their processes, too.

GREEN COILS

75%

less CO_2 than the conventional blast furnace route

All major car manufacturers in Europe are planning to use green steel in the future, with the aim of cutting CO_2 emissions



Initial CO_2 test quantities are currently available and can help achieve CO_2 savings of around 75 per cent compared with the conventional route.

"Our customers benefit greatly from our independent steel service centre, which isn't tied to specific supply sources."

Oliver Sonst
CEO of Stahlo Stahlservice

perspectives and build up outstanding expertise," he says.

FIRST GREEN COILS ON DEMAND

That's not just PR talk. Stahlo has already made a start and recently ordered its first coils from low-carbon production. "For small quantities, it's possible to reduce CO_2 emissions by almost 75 per cent compared with the conventional blast furnace route. Although we can't get a standard range delivered from stock yet, we're focusing on what we can obtain and who needs what,", explains Sonst.

WHAT EXACTLY IS GREEN STEEL?

Looking into the issue of green steel in more detail raises quite a few questions. What does buying green steel actually mean in concrete terms? Is steel only green if it's manufactured on a completely emission-free basis? Or does steel produced with reduced emissions also count as green? These questions are by no means trivial. After all, steel users will have to reliably assess whether any – or which – green steel meets its specific requirements, in both technical and regulatory terms. This calls for appropriate expertise.

"Our customers benefit greatly from our independent steel service centre, which isn't tied to specific supply sources," emphasises Sonst. "We keep an eye on all our partners' big projects, and we're always able to make comparisons and offer appropriate solutions," he adds.

To make the whole concept easier for customers to understand, Stahlo classifies the materials in a similar way to the energy label on household appliances. "We can already obtain quantities from various manufacturing processes with different energy consumptions and emissions whenever we want. Our aim is to take this further and become a true network partner, networking people, resources and technologies in a way that will enable us to overcome the major challenges, now and in the future," concludes Sonst. ■

FIND OUT MORE

Green steel
www.stahlo.de/en

3

Planning software:
Rittal Power Engineering

SIMPLE STEPS TO SWITCHGEAR

Power Engineering software from Rittal offers switchgear manufacturers an optimised tool that makes it easy to configure switchgear, plan it in detail and order it quickly.

Have you got a growing backlog of requests for quotes? 'Rittal Power Engineering' software speeds up the whole process.

Switchgear manufacturers are under constant pressure. Customers often push to implement projects in ever shorter timeframes, piling on the pressure right from the quotation stage. Step forward **Rittal Power Engineering**, the advanced planning software from Rittal that is designed to make it easier and therefore faster to plan switchgear production.

Text: Dr Jörg Lantzsch

From blast furnaces to paper mills, practically every plant depends heavily on a dependable power supply infrastructure. Switchgear manufacturers design low-voltage switchgear based on project requirements, assemble the units in their own production facilities and commission them on site. In many cases, the quotations they need to provide for projects like these have to be provided in a very short space of time. Their costings are based on the planning for the switchgear, and this is where Rittal comes in, providing valuable support with its Power Engineering planning software and modular VX25 Ri4Power system.

1

BASIC DESIGN AND PRICE ESTIMATES

To ensure its software is tailored more closely to the needs of customers in switchgear production, Rittal examined typical scenarios that arise during projects in the sector. These analyses showed that switchgear manufacturers have to start off by conducting initial planning based on basic technical requirements and use this to prepare a cost estimate. It is only once the customer has awarded the contract that the second step can start – detailed planning – which is followed by ordering all the necessary parts and then production. The study carried out by Rittal also found that the various steps are often carried out by different staff.

While the first step is mainly taken care of by the technical procurement team, the second stage is carried out by electrical engineers. To accommodate the different needs of different user groups, Rittal Power Engineering offers various modes for VX25 Ri4Power that have been optimised for the relevant users. In standard mode, users first enter a few basic parameters such as rated current and available space and are then guided through the configuration process. Using simple dropdown menus and combo boxes they select the required sections, and the software uses this information to generate the appropriate Ri4Power switchgear and produce a quotation. Usability and an intuitive interface are hugely important. In just a few quick clicks, users get information that can be used to provide a quote to the customer.

"In just a few clicks, you get the information needed to provide a quote to the customer."

Yasin Bagceci
Product Manager Business Unit
Energy & Power Solutions at Rittal

2

DETAILED PLANNING IN EXPERT MODE

If the customer awards the contract and the switchgear manufacturer wishes to finalise the switchgear planning, the expert mode in Rittal Power Engineering offers the ideal solution. By working in expert mode, electrical engineers can specify all further details, such as Form separations, the position of busbars, etc. The software also carries out checks to prevent errors during configuration. For example, a warning is displayed if the sum of the rated currents of the outlets is greater than the total rated current of the system as a whole.

Throughout the whole configuration process, the entire Ri4Power switchgear is displayed as a 3D model in a separate window, meaning that the digital twin is generated during the course of this early stage. Once the user has completed configuration, all the relevant information can be downloaded, including a parts list, CAD data in various formats and assembly instructions. The CAD information includes a top view of the entire system, which is particularly useful for space planning at the installation site. The software also ticks another vital box for switchgear manufacturers, providing downloadable design verification documentation that confirms the system has been type-tested in accordance with IEC 61439.

3

ORDER AT THE TOUCH OF A BUTTON

In the third and final step, the Ri4Power switchgear can be ordered from within the planning software. Registered users are connected directly to the Rittal online shop through the software. This means that all parts for the finished switchgear can be transferred to the user's shopping cart in a single click and ordered immediately. Thanks to the short delivery times for Rittal system components, switchgear construction can be underway in the workshop just a few days after configuration in Power Engineering. Even Rittal customers that do not use the online shop can count on fast delivery. They can simply press a button in Power Engineering to submit a quotation request to Rittal.

The planning software is available online worldwide as a cloud solution, with no registration necessary. This eliminates the need to install anything on a local IT infrastructure or carry out any updates, meaning users know they are always working with the latest data. The tool is currently available in English, French, German and Polish, with other languages to follow. The current cloud-based solution was developed so that switchgear manufacturers can increase their efficiency and leverage significant benefits from costing right through to production. ■

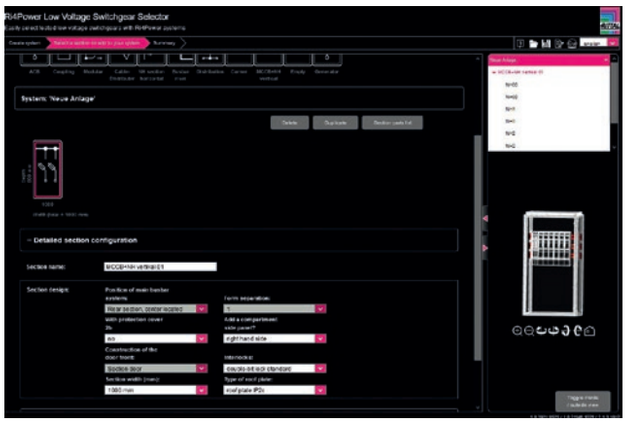
Safe and type-tested: VX25 Ri4Power low-voltage switchgear for machines, equipment and power distribution.

VX25 RI4POWER

The switchgear and power distribution system up to 6,300 A

VX25 Ri4Power switchgear lets you take full advantage of the design advantages of the VX25 enclosure system. Users benefit from low component diversity, which is achieved by the system's uniform 25-mm pitch pattern and predominantly symmetrical components. The reduced diversity of parts cuts down on complexity and simplifies the selection of suitable components. For example, only flat busbars in the two formats 50 mm x 10 mm and 30 mm x 10 mm are used.

The designer can select the appropriate number of busbars according to requirements. A maximum of eight busbars per phase is possible, allowing switchgear with a rated current of up to 6,300 A to be achieved. Switchgear from all big-name manufacturers can be used. VX25 Ri4Power provides a type-tested system with design verification to IEC 61439. As a result, Rittal is meeting the demand for higher performance power distribution systems in small spaces.



Dropdown menus and combo boxes enable users to select the parameters for their switchgear. A set of underlying rules prevents configuration errors. **Selecting sections:** the required sections can be selected and inserted into the switchgear in a few clicks.

FIND OUT MORE

Ri4Power low-voltage switchgear selector
www.rittal.com/rpevx25/#/systemConfiguration

Rittal VX25 Ri4Power
https://webinfo.rittal.com/en/ri4power

10–15

per cent cheaper than bayed suites

1,800

mm wide free-standing enclosure systems can easily replace small bayed combinations comprising up to three enclosures

300

mm deep variants open up new possibilities for use in sectors such as the building industry

Faster

With its side panels and roof formed as a single piece and with fewer separate components, the VX SE makes ordering and assembly far quicker and easier.

Safer

The VX SE is optionally available in an IP 66 and NEMA 4/4x version when a higher degree of protection is required.

Compatible

Panel builders switching from the VX to the VX SE don't need to rethink their engineering or assembly processes – everything is the same.

Andreas Ripploh, Managing Director of Ripploh Elektrotechnik & Engineering, is impressed by the benefits of the VX SE.

VX SE free-standing enclosure system

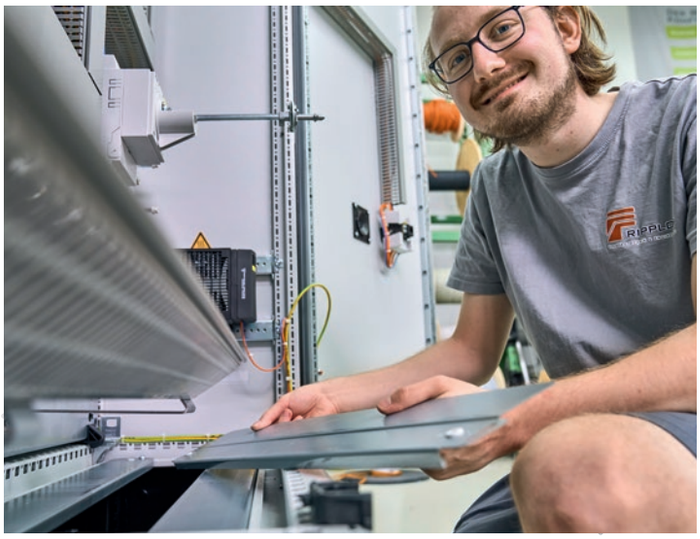
"A PERFECT FIT!"

The "just start building and we can always extend later" approach to switchgear manufacturing is now regarded as outdated. The current trend is towards growing standardisation, and free-standing enclosure systems are planned in detail from the outset – with clear benefits.

Text: Hans-Robert Koch

Somewhat unexpectedly, it isn't just bayed enclosures that you find in Ripploh's large, light-filled production building in the German town of Ostbevern. There is also a significant proportion of free-standing enclosure systems that are used as stand-alone solutions. "A total of 20 per cent of our enclosures are now free-standing systems," reveals Andreas Ripploh. "One of our mechanical engineering customers orders 150 free-standing enclosure systems from us every year," he adds. It's far from the only such customer. Manufacturers of refrigeration and waste compaction systems are amongst the other companies placing similar orders. They all use free-standing enclosure systems for their specific applications. "These customers know exactly what they need – and it's the only thing they'll accept," says the Managing Director of Ripploh Elektrotechnik & Engineering.

From the outset, it has been established that these systems will not be extended, or at least not extensively. To be on the safe side, 20 per cent of the available space might be kept in reserve to allow for minor retrofits and extensions. These could include placing terminals on the top-hat rail, or installing a few more miniature circuit-breakers, coupling relays or interfaces – and that's as far as it goes. The machines themselves can't be extended in applications of this kind, though – they are closed systems.

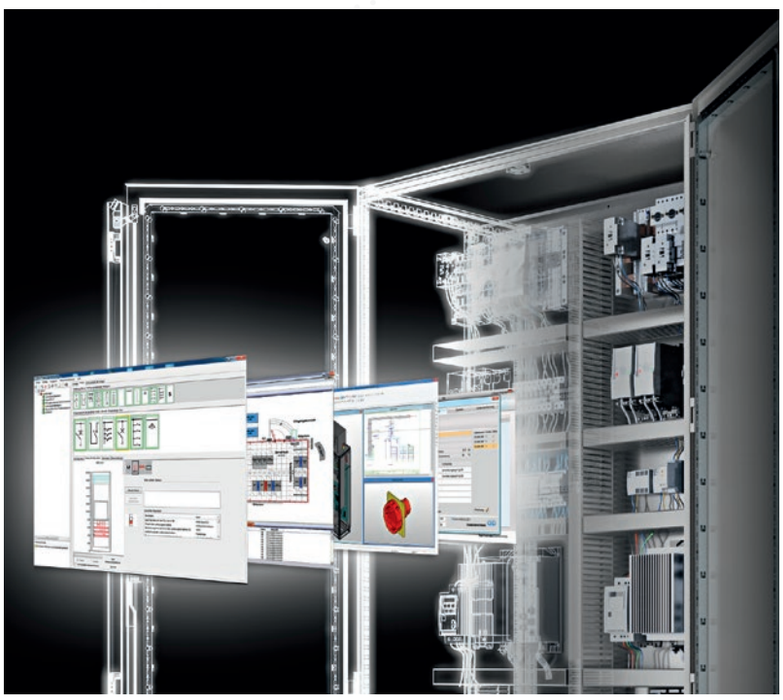


01.

CABLE ENTRY Flexible cable entries are possible thanks to a wide range of accessories and a multi-piece gland plate design. The profile in the base section is now identical to that of the VX25, so VX accessories for the base, such as gland plates and cable clamp rails, can easily be installed in the VX SE as well.

02.

SAFETY The body of the VX SE is made from a single piece, which maximises its stability and torsional stiffness. The conductive connection between the sides, roof and frame eliminates the need for additional earthing.



Digital twin: 3D design planning with Eplan Pro Panel and the use of other software tools creates an accurate depiction of the enclosure layout.

3D TWIN CHANGES EVERYTHING

"The principle of easy extendibility as a back door no longer works," says Ripploh. "The current trend is towards planning systems with a greater degree of standardisation and incorporating specific free-standing enclosures from the outset," he explains, adding that bayed enclosures always used to be the first choice because their bayed design made them easy to extend. According to Ripploh, the "just start building and we can always extend later" approach changed completely when engineering departments started using the 3D twin, because they now have a better idea of what to expect down the line. "We've been using 3D design planning with Eplan Pro Panel for eight years and we've been routing each individual enclosure for nearly 18 years. That means we always know the precise layout of the enclosure, even if it's one of a kind," he emphasises.

Once the engineering work is complete, the customer signs it off. "If the customer wants further components to be installed, we see whether they'll still fit into the enclosure, and we know very quickly what's possible. There's no need to order all the components and test whether they still fit. We can see that in the 3D design – and we then also know whether the door will still shut," says Ripploh with a grin.

NO MORE PATCHWORK SOLUTIONS

Ripploh was quick to spot the trend towards standardisation in mechanical and plant engineering and firmly establish this in his own engineering operations. Developed in-house, the Unit-E enclosure configurator makes modular engineering possible using

03.

ENGINEERING The numerous tools and wide-ranging support offered by Rittal and Eplan include Eplan Pro Panel, 2D/3D CAD data, ecl@ss Advanced, technical documentation and data for planners.

04.

INTERIOR FIT-OUT Adaptor rails ensure VX compatibility. Punched sections, rail systems and partial mounting plates from the VX25 are easy to install.

components that are saved in the Eplan Engineering Configuration (EEC) solution. Unit-E enables quick custom configuration and coordination of modules for fitting out enclosures. “Many customers no longer want patchwork solutions, because it’s then no longer possible to maintain control,” he explains.

“Overall, the VX SE achieves savings of 10 to 15 per cent compared with combinations of bayed enclosures.”

Andreas Ripploh
Managing Director of Ripploh Elektrotechnik & Engineering

OFF TO A FLYING START

If all the basic requirements for using a system of this kind – such as width and depth – are met and it’s clear that no extensions are planned, Ripploh recommends the new VX SE free-standing enclosure system from Rittal to his customers. One particular reason for this is that the price is also important to them. “Overall, a free-standing enclosure system achieves savings of 10 to 15 per cent compared with combinations of bayed enclosures. Otherwise, we would have to design large free-standing enclosure systems using two bayed enclosures,” he states. A further advantage is that free-standing enclosure systems get panel builders off to a flying start, given that they don’t first need to fit the side panels and roof. Nor do individual components need to be ordered separately along with the body of the enclosure. What’s more, the specialists at Ripploh can create more compact designs, as the mounting plate is available for enclosures ranging from 600 to 1,800 mm wide. “We simply have more space in a free-standing enclosure system and can use higher-density designs. The enclosure is also easier to transport once it’s ready. The consistent pitch pattern makes the production process far simpler and the VX system accessories give us a wide range of configuration options – in the base section, for instance. If necessary, the engineering team can easily switch to the baying system,” continues Ripploh.

A WHOLE DIFFERENT LEAGUE

There are, in Ripploh’s opinion, significant differences between manufacturers when it comes to quality. “Rittal still stands out with its high-quality priming and paintwork. Quite simply, it’s in a whole different league. We’ve had other enclosures where the paint has simply peeled off,” he reveals, adding that the availability of enclosures is also hugely important– especially these days. After all, the coronavirus pandemic has brought massive delivery problems. As a result, more than a few half-finished systems are standing in corridors at Ripploh and can’t be delivered yet. Specific components such as terminals, switches and controllers are currently hard to come by. Delivery delays of six to eight weeks or more have become an everyday occurrence, even when dealing with well-known manufacturers. That represents a big challenge for Ripploh as an SME with 48 employees. “Overall, despite the current market situation, we’ve been able to rely on Rittal to deliver on time,” says Ripploh with a sense of satisfaction. ■

FIND OUT MORE

VX SE animation

RIPPLOH ELEKTROTECHNIK & ENGINEERING

www.ripploh.de

THE NEW EPLAN PLATFORM 2022

NEW LOOK, NEW FEELING

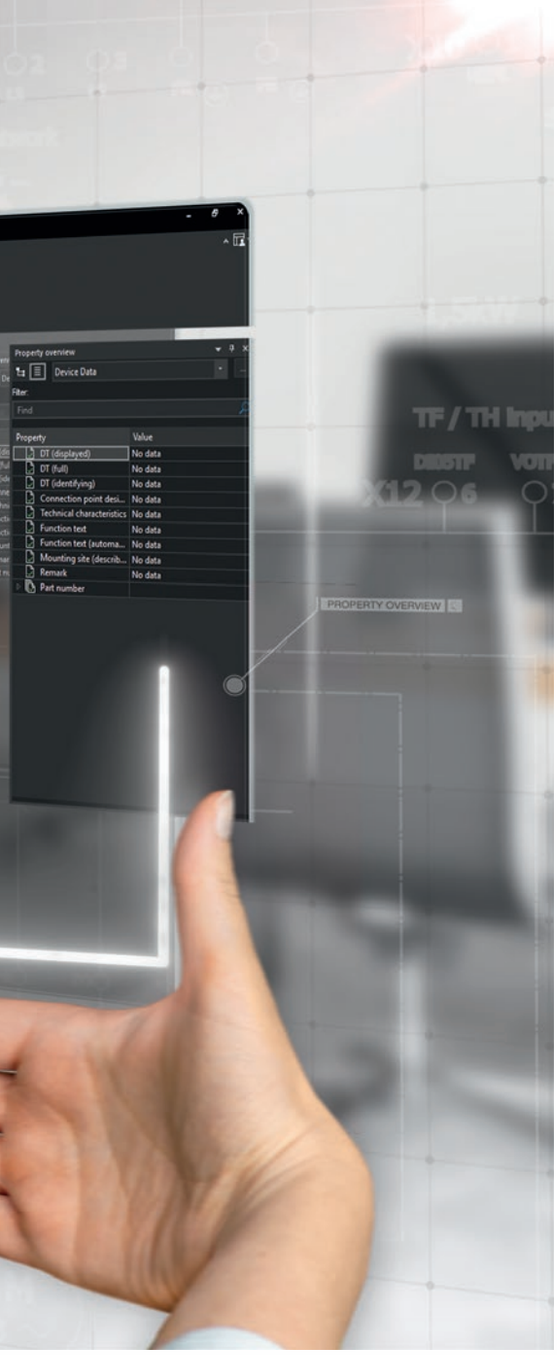
It's here! The new **Eplan Platform 2022**. The new platform from Eplan is opening up a new future in electrical engineering. The platform is centred around a completely new user experience offering ease of operation and a whole host of other benefits that will enable electrical engineers and designers to complete their day-to-day tasks with greater speed and efficiency.

Text: Birgit Hagelschuer, Michael Siedenhans

Featuring more than 2,000 functions, the Eplan Platform is already a well-established fixture within the German mechanical engineering sector. "It is now becoming an even more attractive proposition for customers in the American and Chinese markets too," says Eplan Product Manager Sean Mulherrin. He also knows how this is likely to happen. "Thanks to the new and improved user friendliness of the Eplan Platform, we are providing a convenient working environment and making it easy for new users to get started in engineering." The new Eplan Platform 2022, which has been available worldwide since this summer, does exactly that. However, experienced Eplan users are benefiting from the features of the new software generation, too.

NEW USER INTERFACE

The highlight is an entirely new user interface that makes it possible to work intuitively. Boasting a simple and clear design, the new version looks and works like mobile



Simply more fun to use!

"The standardised user guidance offered by the new Eplan Platform 2022 makes it particularly easy for new employees to learn the ropes. The multitude of functions are clearly laid out and the integrated ribbon technology simply makes it fun to use."

Markus Sommer
Electrical designer, J. Wagner GmbH

apps and established desktop applications. The most frequently used and important functions, which were hidden away within menus in previous versions, are now instantly visible. "Users of the new platform will quickly find their way around the software," promises Mulherrin, who goes on to explain a number of reasons for this: "It's extremely easy to navigate within a project. The practical multifunctional toolbar provides a completely new and enjoyable user experience, complete with ribbon technology and a dark mode setting, and project work gets done faster." The new features appeal to anyone who is new to the software and impress both young users and experienced users worldwide. Powerful new functions ensure everything works smoothly. Features such as guided installation, a dashboard, eLeaning and various cloud applications are all accessed via just one master login, while the close link with the Eplan cloud also simplifies digital collaboration between colleagues and business partners.

FOR LARGE DATA VOLUMES

However, that's not all. The new Eplan platform also responds to the growing need for powerful 2D graphics that are used, for example, when drawing up circuit diagrams, carrying out preliminary planning or developing building technology. The volumes of data required in situations such as these are growing rapidly, but this is no problem for the new platform. "Through its new 2D graphics module, the Eplan Platform 2022 delivers a strong performance, especially for large-scale projects," says Mulherrin. This is because importing DXF or DWG files is now a much faster process. This not only improves performance when processing and visualising hundreds or thousands of pages of circuit diagrams in large-scale projects, but also saves huge amounts of time.

FLEXIBLE ARTICLE MANAGEMENT

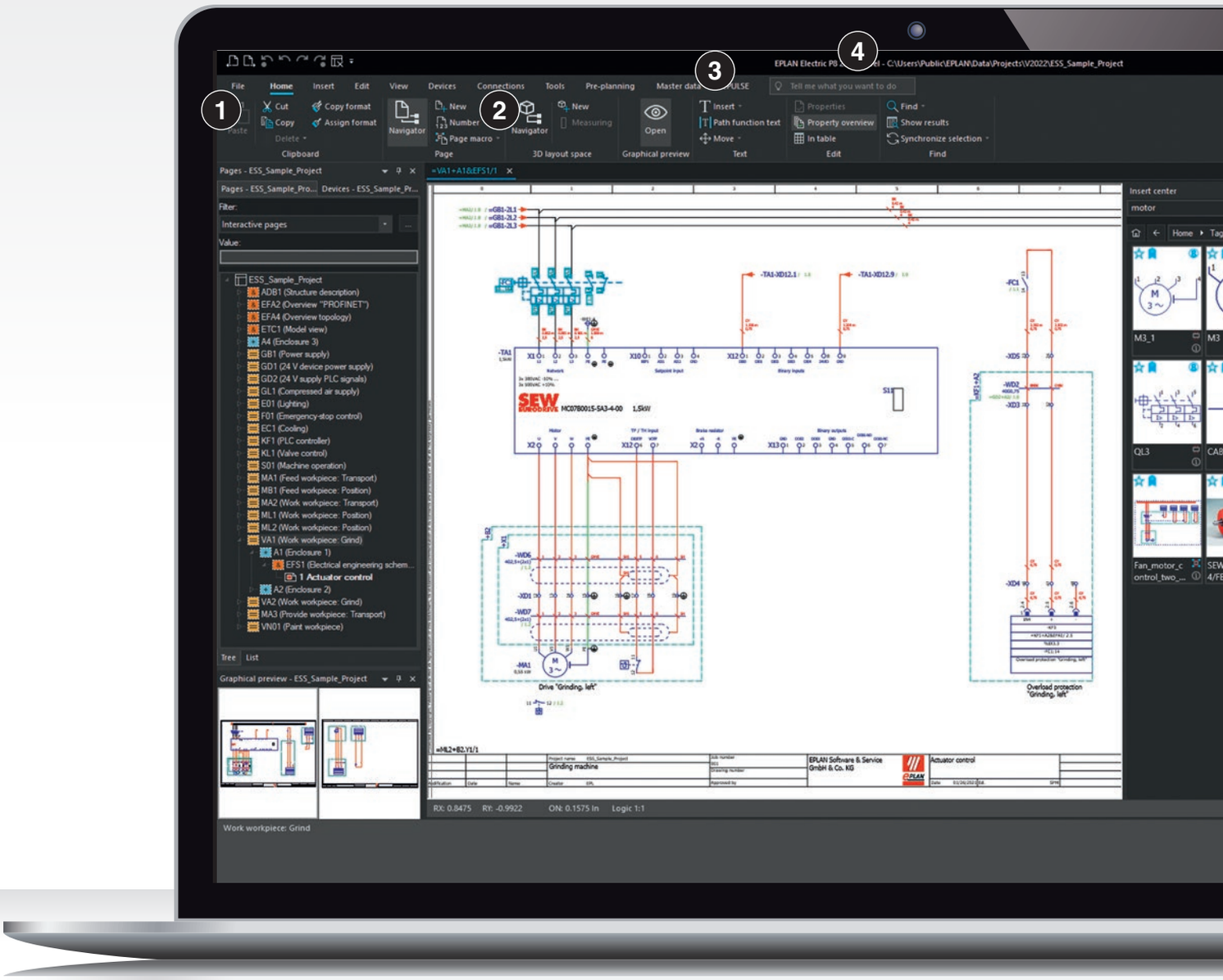
The same can be said of the new central article management system. Thanks to integrated variant management, users can save all article properties with a custom variant and it takes only a moment to assign different macros to articles. As Mulherrin explains: "As far as our users are concerned, we've really hit the bullseye with our new central article management system. It offers excellent flexibility, which is a real asset for users, not only right now but in the future too, as digitalization progresses." An additional plus point for everyday practical use is that it can be combined with Excel for processing external device data. The new Eplan Platform 2022 therefore impresses with its internal and external features alike. "The internal core – the very centrepiece of the platform – is the new article management system," says Mulherrin and he is keen to stress that "as far as the external features are concerned, we're offering our users a trendy new user interface that enables intuitive working and makes everything easier than ever before."

SUBSCRIPTION MODEL AND ONGOING DEVELOPMENT

From 1 August 2021, Eplan has offered new licences exclusively on a subscription model. This model benefits from low entry-level prices and very flexible options for using the software more extensively. Reducing the investment risk for companies in this way is especially important during uncertain times. "What's more, our subscription model promises that – in our role as market leader – we're committing ourselves to ongoing development in line with the latest engineering requirements," says Sebastian Seitz, CEO of Eplan. In years to come, existing and new customers can therefore be confident they are getting the best engineering solution on the market with Eplan.

SIMPLE **ENGINEERING**

Powerful performance, easy to use: Eplan Platform 2022 offers data consistency and intuitive features that appeal to new users and experienced operators alike.



THE NEW INTERFACE **AT A GLANCE**

1 **Backstage view** The backstage view provides one central location where all aspects of an Eplan project can be edited.

2 **Ribbon technology** The multifunctional ribbon combines various menus and toolbars in a single element. This makes it easier for new users to get to grips with Eplan and also supports experienced users in their day-to-day work.

3 **Access to the Eplan Cloud** Central login data give users access both to the Eplan Platform 2022 and to cloud applications such as Eplan eManage, eView, eBuild and the new Eplan data portal.

4 **Search function: "Tell me what you want to do"** This new and convenient function allows users to search for specific features without having to navigate menus.

5 **Insert centre** The new Insert centre is a one-stop shop for all functions that enable users to insert the symbols, macros and devices that are needed for drawing up circuit diagrams efficiently.

6 **Dark mode** One click is all that's needed to change the user interface to white font on a black background, allowing users to work in comfort, even in dark surroundings.

GOOD SOLUTIONS

- **Workflows**
  Consistency, strong performance
- **Connection**
  Cleverly connected system landscapes
- **Digital future**
  Solutions for the industrial automation ecosystem
- **Process**
  Data consistency, automated processes
- **Collaboration**
  All project partners seamlessly connected
- **Usability**
  Intuitive operation

FIND OUT MORE
www.eplan-software.com/inyourhands

Better routing possible

"With Eplan Platform 2022, the technical features can be displayed with greater versatility and precision. In the case of routing, for example, auxiliary switch blocks of contactors whose connection point designations – depending on the base mounting – have changed their physical positions can now be correctly displayed."

Michael Noack
Eplan Administrator, KSV

Close interlinking of machine suppliers and operators ensures faults are rectified quickly when the service team is contacted, and everyone involved can communicate directly.

Cideon software supports innovative service concepts

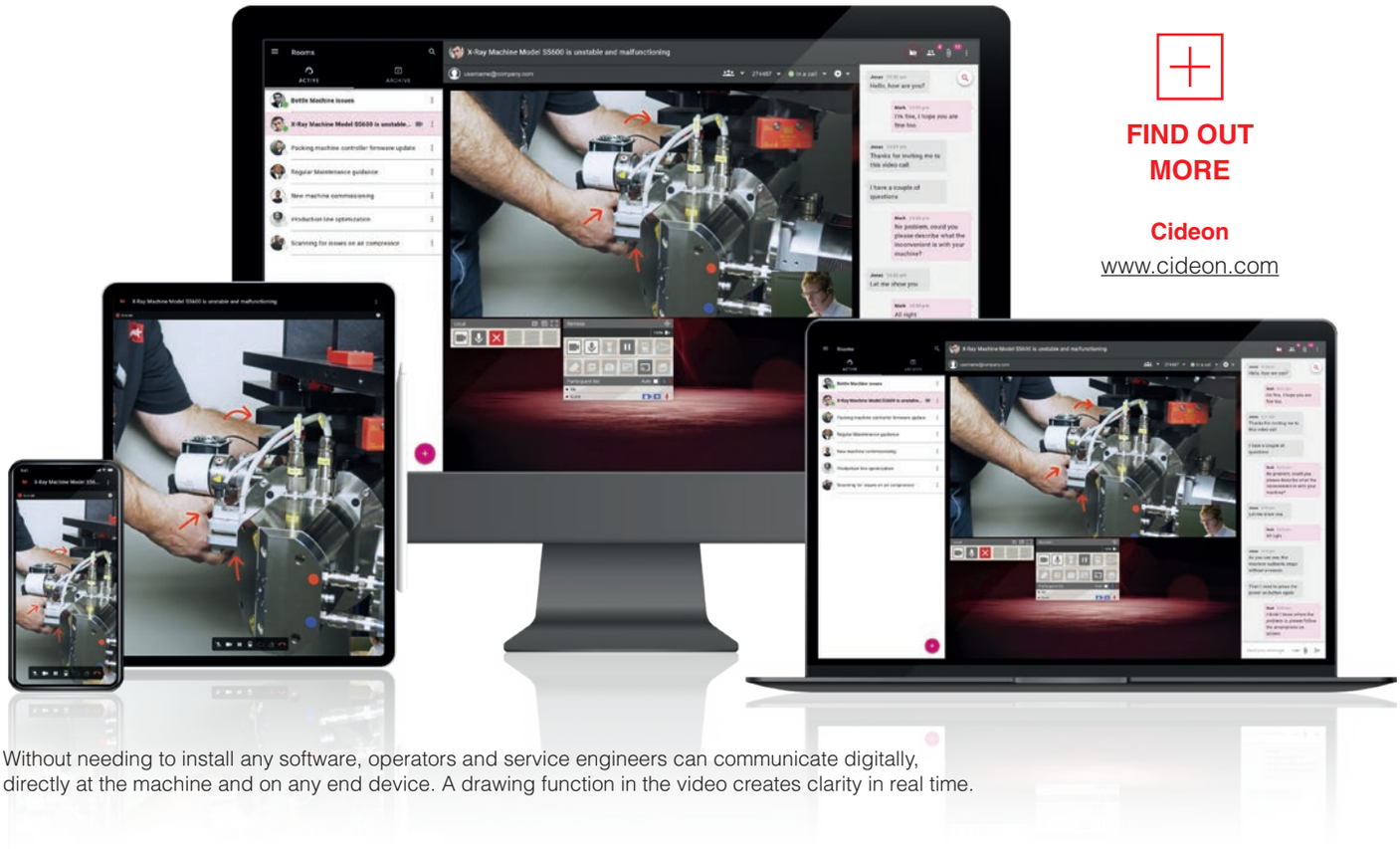
HELP
AT THE TOUCH OF A BUTTON

Having to call out an engineer for a machine or system isn't an everyday occurrence and rapid assistance is required. This poses a challenge for companies when faced with travel restrictions. Cideon is coming to the rescue of small and medium-sized mechanical and plant engineering companies. **Cideon Enify,** a new SaaS solution based on a leasing model, ensures **machine suppliers and operators worldwide can communicate visually in real time.** This means machine faults can be rectified faster.

Text: Birgit Hagelschuer

Available since July 1, Cideon Enify is a new software solution that supports efficient new service concepts for small and medium-sized mechanical and plant engineering companies. Cideon developed this solution with a clear goal in mind. It aims to rectify faults and defects affecting the live operation of a machine or plant on the first attempt and to do so worldwide and, wherever possible, digitally – without a service engineer having to travel anywhere.

"This software helps mechanical engineering companies that operate worldwide get around all the current travel restrictions on the global market. At the same time, it fosters closer links between machine suppliers and operators, even when they are in different countries," sums up Stephan



Without needing to install any software, operators and service engineers can communicate digitally, directly at the machine and on any end device. A drawing function in the video creates clarity in real time.

FIND OUT MORE

Cideon
www.cideon.com

Kranz, Head of Special Projects at Cideon. By developing Enify, Cideon is also looking to make its customers more competitive, as it can be used to create completely new after-sales service concepts.

REAL-TIME VIDEO TRANSMISSION CREATES CLARITY

The first step is to set up the app as a messenger service with video function. Eplan, a sister company of Cideon, provides the technical basis for this with its Eplan cloud, which takes care of user management. Images and videos of a machine or system can be shared on any end device – from smartphones and tablet computers to PCs – without having to install anything. What makes this app so special is that key areas of the system can be marked and labelled using a live pointer based on AR technology. Thanks to the drawing function, a service engineer can give operators instructions in real time, telling them how to repair or maintain the machine. At the same time, live transmission helps prevent ambiguities, especially if there is a language barrier. A further advantage is that the cloud automatically stores all service events, which means everything is documented directly.

NEXT STEP – LINKING ERP AND CAD

Further functions are systematically being added to the new software solution. Cideon is already planning to link CAD systems and ERP solutions to Enify soon. It will then be possible to compare parts lists in systems such as SAP or connect shop systems, for example. The experts at Cideon are also taking a ground-breaking development step by actively inviting existing and potential customers to act as pilot customers and take on a practical role in influencing how the solution evolves. The ultimate aim is to create a software solution that precisely reflects SMEs' current and future practical requirements. It almost goes without saying that the concept incorporates cutting-edge technologies such as augmented reality and smart glasses.

CONCLUSION

As Kranz explains: "Cideon Enify is a valuable tool that helps forge closer links between mechanical and plant engineering companies and their end customers. Using the software is like pressing the alarm in a lift. We're giving companies the option to coordinate live, digitally and in real time in the event of a fault." ■

"Completely new after-sales service concepts can be created with Cideon Enify software."

Stephan Kranz
Head of Special Projects
at Cideon

NEWS

AT HOME WORLDWIDE

Global success. International customers, ever-changing requirements and new technologies – products and solutions from **Eplan and Rittal** are meeting all manner of demands worldwide, and are doing so with optimum time, cost and energy efficiency.

USA

NEW STANDARD FOR US AUTOMAKER

Strategic thinking, creativity and team spirit were called for when Rittal North America, Eplan USA and **Electro-Matic,** a US manufacturer of automation components, worked together on the global standardisation of power distributors for a US car manufacturer. Thanks to **enclosures** and **Perforex machining centres** from Rittal and **Eplan Pro Panel** software, Electro-Matic is now able to offer the automotive group a standard product for its 52 production facilities worldwide – namely, the Power Distribution Panel (PDP).

AUSTRIA

A BOOST FOR HYDROPOWER PLANTS

GLOBAL Hydro develops and manufactures key components for hydropower plants and has recently started using the Eplan Platform for its engineering work. For example, it makes use of **Eplan Electric P8** to plan all circuitry and prepares 3D designs with the help of **Eplan Pro Panel**. Eplan eView Free will be the next step.

BULGARIA

86% – HUGE REDUCTION IN CONSUMPTION

Aurubis Bulgaria manufactures premium copper. The cutting-edge technologies it uses to cut CO_2 emissions at its production sites now include **42 Blue e+ cooling units** from Rittal. These were installed after a 267-day trial period showed they reduced energy consumption by **86 per cent**.

GERMANY

DESY DATA NOW EVEN COOLER

Researchers at **DESY (Deutsches Elektronen-Synchrotron)** in Hamburg are using IT infrastructure solutions from Rittal for the centre's LUX II plasma accelerator, with 30 kW **Liquid Cooling Packages CW** ensuring waste heat from the servers is efficiently removed from the **VX IT racks**.

FINLAND

LUXURY LINER RELIABLY ONLINE

When the Icon of the Seas embarks on its maiden voyage in 2023, **cooling units and VX IT racks** from Rittal will be on board, as they have been ever since the laying of the keel back in June at the Meyer Werft shipyard in Turku. The German shipbuilder will continue using IT infrastructure solutions from Rittal in the future.

INDIA

76%

ENERGY SAVING

India's leading **manufacturer of cars and commercial vehicles** is looking to make its energy consumption as sustainable as possible in the coming years. With this in mind, it conducted tests with energy-efficient **Blue e+ cooling units** from Rittal and found they cut energy costs by 76 per cent. The Indian automotive group is now planning to use the units as standard in its plants.

ETHIOPIA

IT CONTAINER IN NEXT TO NO TIME

The US company **RedFox** is building a new data centre park for hospitals, schools and local authorities in Addis Ababa. Rittal is supplying container, rack, cooling, power supply, monitoring and UPS solutions for the project. Fast delivery, high safety requirements and the region's hot climate pose the biggest challenges. **RiMatrix S** housed in a container is the answer.

Rittal Service – replacing cooling units

ONE NICE SURPRISE AFTER ANOTHER

Opportunities for saving energy are everywhere, but which measures are practical and can be implemented on a large scale? Energy and environmental management staff ask themselves this question all the time. Even a saving that appears small at first glance can have a big impact, as demonstrated by the example of **Viega, a world market leader in installation technology for sanitary facilities and heating systems**.

Text: Dr Jörg Lantzsch

State of the art: As an innovation and technology leader in the sector, Viega uses Blue e+ cooling units from Rittal for enclosure climate control on all its machines.

Can cooling units easily be replaced in big numbers while operations continue? Of course they can! Rittal Service showed just how easily at Viega.

Making energy consumption transparent and identifying the main power guzzlers to focus on are the key everyday challenges faced by Martin Szilinski. For seven years now, he has been responsible for energy, environmental and occupational safety management at Viega. The company operates four production sites in Germany. The largest, located in Grossheringen, is the competence centre for piping systems and manufactures pipe connecting elements made of copper, steel, stainless steel, brass, plastic and gunmetal.

AMBITIOUS SAVINGS TARGETS

"Over the past five years, we've set ourselves the goal of making energy savings of 10 per cent at the German sites and have significantly exceeded this target," reveals Andreas Brockow, Chief Supply Chain Officer at Viega. Building four CHP power stations with integrated cooling played a big part in this achievement. As Szilinski proudly reports, lower primary energy consumption isn't the only benefit. "We also cut the amount of CO_2 generated per kWh of electrical energy by around 30 per cent," he says. Besides the CHP power stations, many other measures have been implemented in recent years. According to Szilinski, these typically focused on lighting, cooling and compressed air. Once these "low-hanging fruits" had been harvested, he and his team had to look for other energy-saving options.

Thomas Schild, Energy and Environmental Manager at the Grossheringen site, initiated a particularly interesting project. He came across the new Blue e+ series of cooling units during an in-house event at Rittal. Thanks to innovative hybrid technology that combines conventional compressor cooling with a heat pipe, operating these units helps deliver energy savings of up to 70 per cent.

The heat pipe works particularly well if there is a big temperature difference between the interior of the enclosure and the surrounding area.

600.000 kWh

is being saved each year by Viega at its Grossheringen site

It also consumes very little energy. The compressor cooling system, too, boasts excellent energy efficiency thanks to demand-based control technology and energy-efficient drives.

TRIAL PRODUCES IMPRESSIVE RESULTS

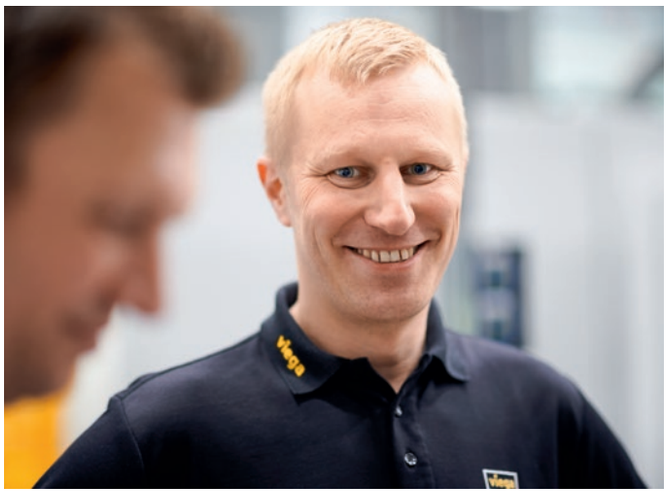
To coincide with the market launch of the new generation of cooling units, Rittal offered selected customers the opportunity to put the units through their paces as part of a trial. This resulted in two production machines in Grossheringen being converted. “Rittal installed the new cooling units and equipped them with measurement technology to document energy consumption. The results were impressive – the energy saving was as high as Rittal predicted,” recalls Schild. Manufacturers’ specifications normally tend to be regarded with a degree of scepticism. “If a new car is said to consume 4.5 litres of fuel per 100 km on average, I’m well aware this is hardly ever achieved in reality,” adds Szilinski by way of an example. Following the trial, he and Schild asked the Rittal After Sales Service team to carry out an efficiency check on all cooling units. The results indicated which machines were good candidates for having their cooling

138

COOLING UNITS

from the Blue e+ series in operation at Viega are helping to deliver energy savings of up to 70 per cent thanks to their innovative hybrid technology.

Just 22 days is all it took to convert the 138 cooling units. This was down to outstanding teamwork between staff at the two companies, including Jan Reifschläger from Rittal Service and Thomas Schild from Viega.



“The results were impressive – the energy saving was as high as Rittal predicted.”

Thomas Schild
Energy and Environmental Manager
at Viega in Grossheringen

units replaced. Ultimately, 138 units were earmarked for replacement. “Of course, we also had to persuade the management team to make this investment,” recalls Szilinski. The data relating to the trial, efficiency check and emissions savings was extremely helpful in this regard. “After all, a single enclosure climate control unit makes a relatively small difference. If you consider the savings for the entire plant, though, this measure has a big impact,” he says.

ALL-ROUND CAREFREE PACKAGE

One key challenge was planning the conversion for the entire plant in a way that would, as far as possible, not affect production. Purchasing a single cooling unit and making the switch is no problem. “But replacing the climate control unit on so many machines requires meticulous planning,” emphasises Schild, explaining his team’s concerns. Production operations continued during the conversion. As the enclosure of most machines is located outside the safety area, this did not pose a problem. “Our electricians disconnected the enclosure cooling units, which just meant stopping the machine briefly. The Rittal team then took over,” continues Schild. The process of removing the enclosure door, complete with the old cooling unit, making the door cutout larger, installing the new Blue e+ unit and fitting the finished door back onto the enclosure went very smoothly. The electricians then simply needed to reconnect the new cooling unit. Apart from this brief interruption and the one to disconnect the old unit, the machine in question could remain in operation throughout the conversion. “Getting an all-round carefree package from the manufacturer – which covered the supply of the new units, the conversion process and the disposal of the old units – was really important to us,” emphasises Szilinski. Despite an interruption due to the coronavirus pandemic, all 138 units were converted in just 22 days.

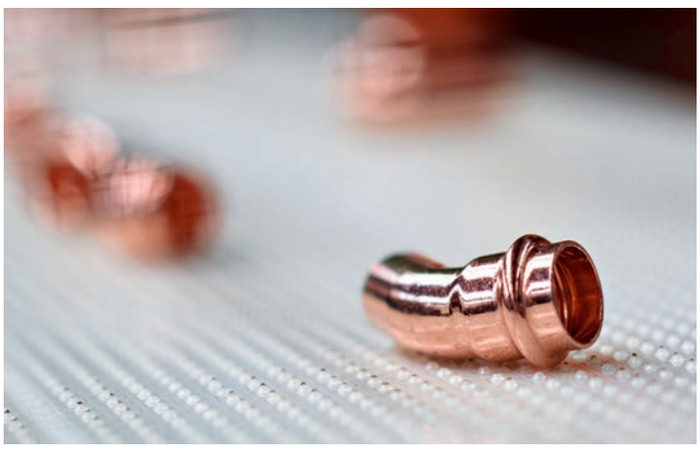
SAVING OF OVER 600,000 KWH

By converting its enclosure climate control to this innovative hybrid technology, Viega’s Grossheringen plant isn’t just saving over 600,000 kWh of electrical energy, but is also cutting its greenhouse gas emissions. “Together, these two factors convinced us to install units from the Blue e+ series at the other production sites in Germany as well,” reveals Brockow. According to Szilinski, switching over entirely to the new generation of units is having positive side-effects on aspects such as maintenance, too. “As one of the innovation and technology leaders in our sector, it’s important that even the cooling units on all our machines are state of the art – a win-win situation for Viega, Rittal and the environment,” sums up Brockow. ■

FIND OUT MORE

Service
www.rittal.com/com-en/Services

www.viega.com

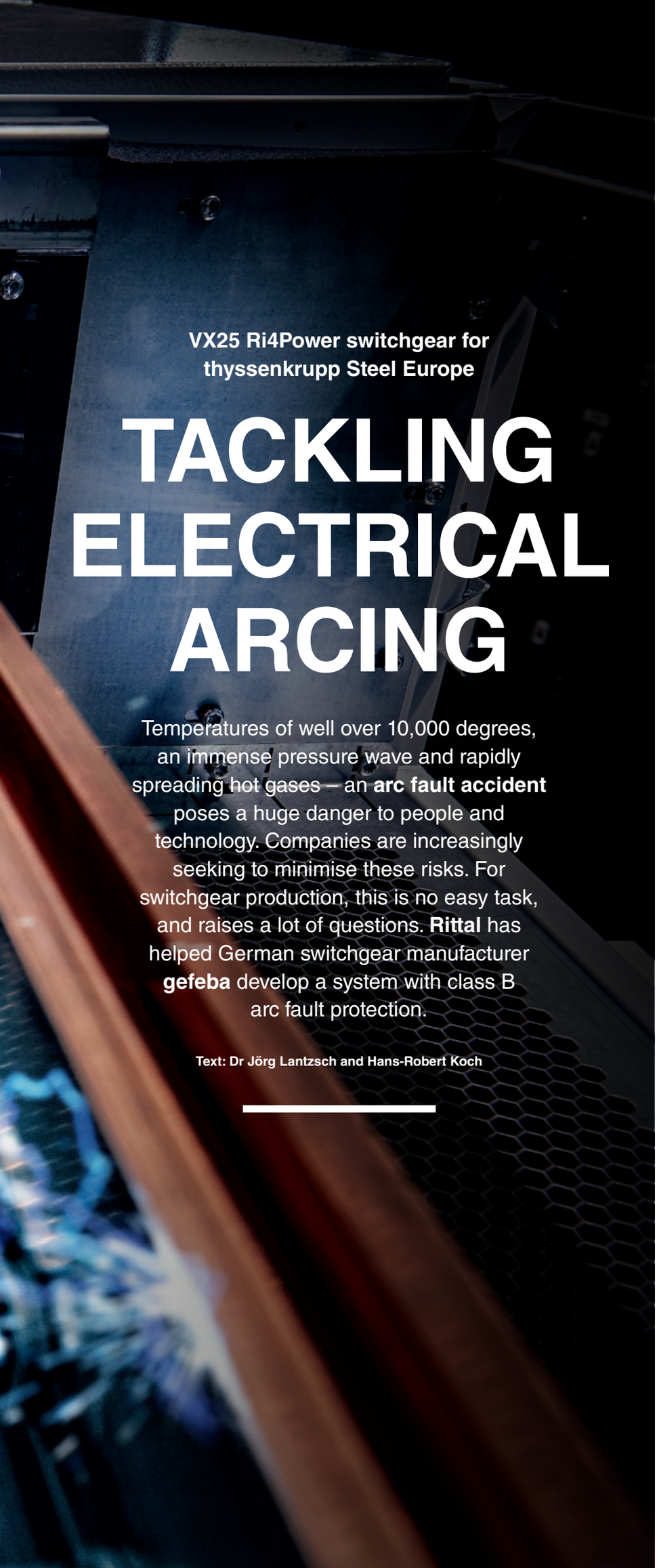


In Grossheringen, Viega manufactures pipe connecting elements made of copper, steel, stainless steel, brass, plastic and gunmetal.

How can accidents caused by arc faults be prevented? One solution is low-voltage switchgear with arc-fault protection using the VX 25 Ri4Power system.

How does an arc fault occur?

Arc faults can produce high temperatures and pressures, causing enormous damage to switchgear and even destroying it completely in the worst-case scenario. They are often triggered by something trivial, such as an abandoned tool, dirt along the insulation and creepage paths or an animal getting into the enclosure. The resultant short circuit can cause a fire due to the high currents in switchgear.



VX25 Ri4Power switchgear for thyssenkrupp Steel Europe

TACKLING ELECTRICAL ARCING

Temperatures of well over 10,000 degrees, an immense pressure wave and rapidly spreading hot gases – an **arc fault accident** poses a huge danger to people and technology. Companies are increasingly seeking to minimise these risks. For switchgear production, this is no easy task, and raises a lot of questions. **Rittal** has helped German switchgear manufacturer **gefeba** develop a system with class B arc fault protection.

Text: Dr Jörg Lantzsch and Hans-Robert Koch

Our customers are increasingly asking for low-voltage switchgear with arc fault protection," says Kevin Pelka, Project Manager at gefeba, a one-stop shop for turnkey automation technology and electrical equipment that is based in Gladbeck, in Germany's industrial Ruhr region. The company is well aware of this safety trend and is currently working on switchgear of this kind for thyssenkrupp Steel Europe. Like gefeba, many switchgear manufacturers have been rethinking their approach over the past few years. After all, the availability of production plants is becoming increasingly important, and arc fault protection in the low-voltage supply plays an important part in this regard.

THE CHALLENGE OF CLASS B ARC FAULT PROTECTION

"Developing switchgear using a Form 4b design with class B arc fault protection was new territory for us," says Pelka, recalling the enquiry that came in from thyssenkrupp Steel Europe. DIN EN 61439-2 stipulates that class B arc fault protection must contain an arc fault within a defined area inside the switchgear (see box). "Customers primarily ask for this so that the damage caused by an accident does not destroy the entire switchgear," explains the Project Manager. To meet this challenge, the company sought the help of Rittal. gefeba opted to use the VX25 Ri4Power system for its new low-voltage switchgear. "In addition to the Form separation and arc fault protection offered by the system, there was another crucial advantage – it has enabled us to keep to our customer's very tight schedule," explains the 29-year-old Project Manager. The switchgear is intended for use in a blast furnace at thyssenkrupp Steel Europe's site in Duisburg, where it will supply power for Cowper stoves, booster pumps and assigning repair tasks. The upgrade can only take place during the window set aside for overhauling the blast furnace. "It's precisely scheduled and will take around two months," says Pelka. Fast delivery and a system that can be installed quickly and easily were therefore essential.

Form separation, class B arc fault protection and other requirements – gefeba faced a raft of challenges in the switchgear project for thyssenkrupp Steel Europe.

The gefeba team: left to right, Michael Gendrzeiko (Head of Standards and Guidelines, member of the Customer Advisory Board at Rittal), Kevin Pelka (Project Manager), Dirk Rhode (Managing Director) and Claudio Aloisi (Business Unit Manager)

20,000 K

is the temperature that arc flashes can reach

COLLABORATIVE SUCCESS

"Without the assistance from Rittal, there would be no chance of us delivering the system on time," says Pelka. During planning work at Rittal, the low-voltage switchgear was designed in line with requirements using "Rittal Power Engineering" software. This meant gefeba could very quickly get started on the details of electrical planning. "It is important that the timing is right, particularly for projects with such tight timescales." One of the major challenges in this situation is the delivery lead times for the various components: "We always have to think ahead and, for example, order the circuit breakers very early as they have a long delivery lead time." That is precisely why customers appreciate the short delivery times Rittal offers, as Pelka points out: "This is particularly important for us, as the mechanical aspects, including the enclosures, always have to be ready before the electrical side of things."

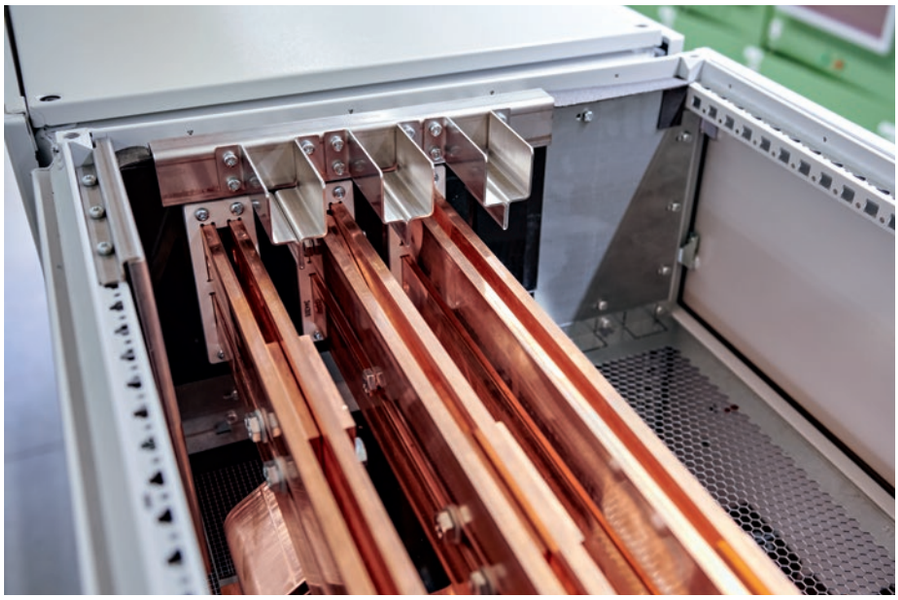
Support was provided by the internal sales team for power distribution technology at Rittal and included on-site training and explanations of important installation details. Rittal supplied a first section of the system partially assembled. "This service has made our work much easier, as we have been able to use it as a guide for the other parts of the system," explains the Project Manager. The fact that many parts of the switchgear were delivered ready for installation has also helped keep the project on schedule. For example, the copper busbars for the circuit breaker connections were already bent to fit. Rittal was also able to benefit from gefeba's more than 50 years of experience building complex switchgear and incorporate some improvements into its production processes.

"Only the Ri4Power system and the support from Rittal enabled us to keep to our customer's very tight schedule."

Kevin Pelka
Project Manager at gefeba

ARC FLASH KIT WITH SACRIFICIAL ANODES

gefeba has designed a total of six identical switchgear units with a rated current of 2,500 A each. A group of four units is connected together via coupling switches, as are the remaining two units, thus ensuring that if there is a fault in one part of the system, the equipment can be powered from the neighbouring part of the system. This redundancy is essential to the continuous operation of the blast furnace. To achieve the required class B arc fault protection, the arc flash kit for the Ri4Power system has been installed in all the sections produced in Form separation 4b and 2b. The kit includes seals that are installed on the busbars where adjacent sections meet, thus preventing an arc from travel-



Seals and sacrificial anodes are essential components that deliver the required class B arc fault protection in the VX25 Ri4Power system.

ling along the busbars into the next section. Sacrificial anodes are also installed, drawing the arc away from the system and extinguishing it, thus preventing vital parts of the system from being destroyed. “We have also included another feature as advised by Rittal,” explains Pelka. “The circuit breakers protruding from the door are insulated with special plastic covers that can be opened to insert and remove the circuit breakers. Due to arc faults, switching on and off is carried out via the push button installed in the enclosure door directly above.”

GEFEBA INSPIRES INNOVATION

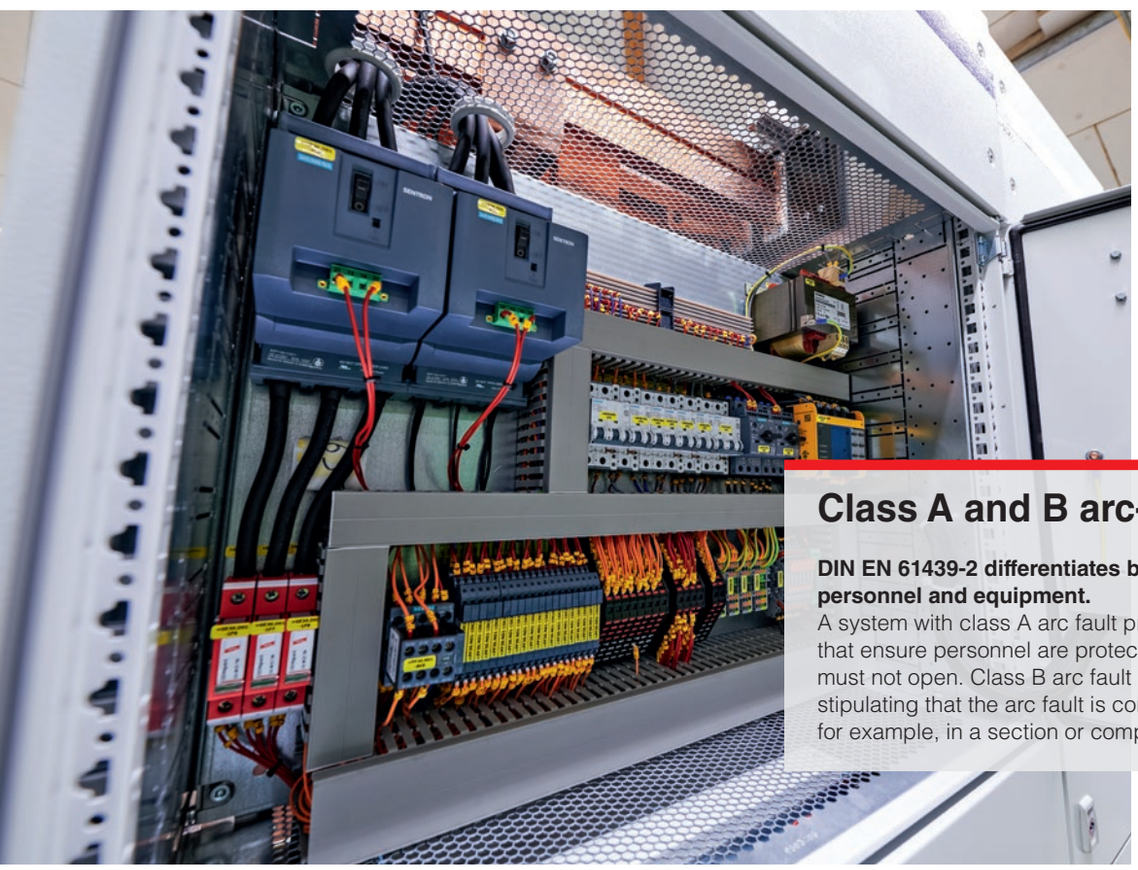
If, as in the project for thyssenkrupp Steel Europe, low-voltage switchgear is equipped with class B arc fault protection, only one or two enclosures are affected by any damage and the process can continue at least in emergency mode. gefeba has been a catalyst in the development of the arc flash kit, making a valuable contribution through its long-standing representation on the Customer Advisory Board at Rittal. “We are delighted at how well this project has gone with the support from Rittal,” says Pelka, “because there was no other supplier who could have offered us this.” ■

FIND OUT MORE

VX25 Ri4Power system
www.rittal.com/ri4power

Class B arc flash kit
www.rittal.com/arc-flash-kit

https://www.gefeba.de/en/



Class A and B arc-fault protection

DIN EN 61439-2 differentiates between protection of personnel and equipment.
A system with class A arc fault protection meets five criteria that ensure personnel are protected e.g. doors and flaps must not open. Class B arc fault protection goes further, also stipulating that the arc fault is contained in a defined area, for example, in a section or compartment.

The Eplan Partner Network

DIGITAL WINNERS

Pooling partnerships to develop digital solutions together
The Eplan Partner Network is a driver of collaboration.

Digital transformation is complex. Not every company has its own software specialists on hand for developing integration projects or data exchange connectors, for example. Partnerships that work together to produce solutions to boost consistency are invaluable here – such as the **Eplan Partner Network** with members such as **Rockwell Automation**, **Mitsubishi** and **Festo**. Both the partners and their customers reap the benefits in equal measure.

It's busy and noisy at the demonstration factory on RWTH Aachen University's campus. A sorting system is noisily at work. "Eplan features heavily in this machine," says Tim Oerter, Program Manager Digitalisation at Eplan. He's presented his showcase in the European 4.0 Transformation Center (E4TC) on many occasions. He uses his tablet to scan the QR code on the machine. This lets him display circuit diagrams and the virtual prototypes of the system's enclosure and he can then comment on them. Malfunctions can also be simulated. By using augmented reality, it is then possible to display the components of the enclosure's digital twin that need to be replaced. "I can showcase these sorts of pioneering technologies to visitors here in a matter of minutes," says Oerter. "With the AR add-on for Eplan eView Free, part of the showcase has even found its way into practice now."

Eplan features here: a sorting system in the demonstration factory on campus at RWTH Aachen.

CUSTOMERS BENEFIT FROM DEVELOPMENTS

This is just one of several projects in the E4TC (European 4.0 Transformation Center) in which Eplan is actively involved. The Eplan Partner Network, which was launched in late 2020, was formed to bring together and drive forward both corporate partnerships and joint activities with scientific institutions and research institutes. However, the heart of the partner network remains the same – collaboration with partners of all sizes from various sectors and business areas. "We develop connections along our customers' value chain in cooperation with our partners," explains Dr Marco Litto, Vice President Strategy & Corporate Program at Eplan. "Our shared customers benefit from this, primarily due to an increased level of integration and data consistency."

The many members of the Eplan Partner Network include global key players in the area of automation – such as Bosch Rexroth, B&R, Endress+Hauser, Festo, ifm electronic, Mitsubishi Electric, Phoenix Contact, Pilz, Rittal and Rockwell Automation. ■

"We develop connections along the value chain in cooperation with our partners. Our shared customers benefit from this, particularly due to an increased level of integration and data consistency."

Dr Marco Litto
Vice President Strategy & Corporate Program, Eplan

FESTO

Eplan Projects in just a few minutes with web service

Finding the right Eplan macros for as complex a product as a valve terminal from Festo can be time-consuming, but it doesn't have to be. The web service "Schematic Solution" can be used to create a complete Eplan project in line with the specific configuration of a Festo product in just a few minutes.

"Our web service 'Schematic Solution', based on EEC, helps our customers to create custom standardised Eplan projects quickly and easily."

Martin Neumann
Product Manager Digital Business, Festo

Rockwell Automation

Strategic collaboration for data consistency

In Rockwell Automation's strategic cooperation with Eplan, one of the things the company is investing in is the development of bi-directional connectors between Eplan Electric P8 and Rockwell Automation solutions such as Studio 5000, Integrated Architecture Builder and ProposalWorks.

"Together with Eplan, we support companies through their digital transformation by enabling data consistency, improving efficiency of engineering processes and shortening time-to-market."

Jason Wright
Director, Digital Design & Visualization, Rockwell Automation

MITSUBISHI ELECTRIC

Bi-directional exchange via AutomationML

The integrated solution between MELSOFT iQ Works and Eplan Electric P8 combines automation and electrical engineering. Based on AutomationML, data can be exchanged bi-directionally between the two software tools. This helps for optimising processes along the value chain and paves the way for Industry 4.0.

"We are looking forward to further collaboration with Eplan to bring customers more benefits in their digital manufacturing initiatives."

Hajime Sugiyama
Lead Global e-F@ctory Alliance coordinator, Mitsubishi Electric

FIND OUT MORE

Eplan Partner Network
www.eplan-software.com/partner

1,300
wires can fit in the Wire Terminal

30%
time saving
during wiring work

400
enclosures per year
are assembled using the Wire Terminal

Exactly how much faster is automatic wire processing?
Eight times faster when using the Wire Terminal WT36 from Rittal.

Wire Terminal WT36 further increases level of automation

AS IF BY MAGIC!

Elpex AG from Kirchberg in the Swiss canton of Bern set about automating its production operations in 2016. In addition to the Perforex enclosure machining centre and the Secarex cutting centre, a **Rittal Wire Terminal WT36** was taken into operation in early 2020. Together, these machines do almost everything themselves – that's according to staff.

Text: Barbara Sawka

Oliver Curty (left) and Oliver Hirsiger (above) operate Elpex AG's **Rittal Wire Terminal WT36**. Up to 36 different wires with cross-sections ranging from 0.5 mm² to 6 mm² can be cut to the required length, stripped, crimped, labelled and sorted by job on a fully automated basis without any changeovers.

A wiring schematic spans 320 pages on average, while the average wiring process takes 54 hours – accounting for 49 per cent of the total production time. This is extremely time-consuming for most switchgear manufacturers. It ties up manpower, which means there is plenty of scope for efficiency improvements. Elpex AG in Kirchberg in the Swiss canton of Bern certainly sees it that way. Founded in 1989, the company manufactures panel building and switchgear solutions for the food, automotive and construction industries and also for mechanical engineering and automation companies. In 2016, Elpex set about modernising its production operations. First came the Eplan Electric P8 and Eplan Pro Panel Professional engineering tools, then a Rittal Secarex AC 15 cutting centre, which helps improve quality, minimise cutting waste, lower costs and speed up the entire process. Elpex increased this speed further still in 2017 by purchasing a Perforex BC 1001 HS. At the beginning of 2020, a Rittal Wire Terminal WT36 (for 36 different cross-sections) joined the team.

EIGHT TIMES FASTER

WT24 and WT36 versions of the compact, fully automatic wire processing machine are available. They can process up to 24 and 36 different wires respectively, with cross-sections ranging from 0.5 mm² to 6 mm², on a fully automated basis without any changeovers. Cutting wires to the required length, stripping and crimping require no manual intervention. An optional printing system is available that prints in either black or white on the wires. The controlled classification system optimises the transfer of wires processed in this way to downstream steps. It consists of a 13-box storage system with wire rail magazines and can accommodate up to 1,300 wires. "The user interface is well structured and provides a good overview of the wire currently clamped in the machine. You can also see how much wire is left on the spool," explains Oliver Hirsiger, who regularly works on the WT36. "And it feels completely different now that everything happens automatically," he adds. Wire processing for panel building and switchgear manufacturing applications is eight times faster with the Wire Terminal WT. What's more, fully automatic production ensures continuously high quality.

Consistent data retention is key to maximising the efficiency of automated workshop processes. The machine has appropriate interfaces for this purpose, which ensures data from construction planning with Eplan Pro Panel can be seamlessly transferred for use in wire processing. Alternatively, this data can also be entered manually, directly on the machine. Although Eplan is used for project planning, data is still entered in the WT36 from an external source.

A BIG STEP

Automation represents a big step for Hirsiger and his colleagues. "In the past, we either had to do everything by hand or have it done externally. Now, thanks to these three machines, we can do everything ourselves and follow every step along the way," says Hirsiger appreciatively. His colleague Oliver Curty agrees: "The machines do almost everything themselves!" And he should know, because he uses the Perforex, the Secarex and the Wire Terminal on a daily basis. ■

FIND OUT MORE

Rittal Wire Terminal WT video

www.elpex.ch

How do you track production faults faster and better? Track-and-trace solutions from German Edge Cloud have the answer.

Track and trace

SEAMLESS SUPPLY CHAINS

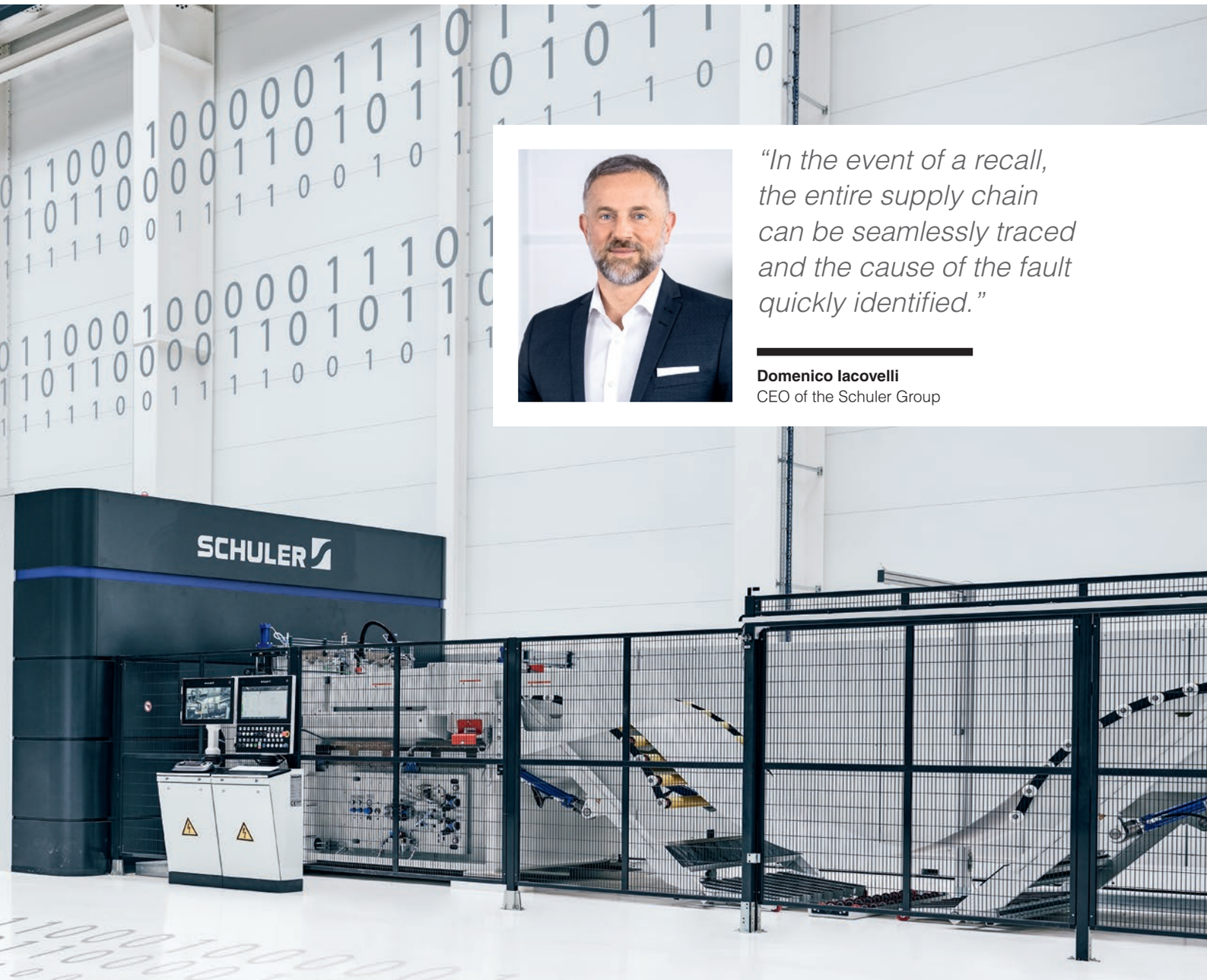
Recalls are a disaster for carmakers. Replacing faulty components in vehicles is not just potentially costly, it can also tarnish the manufacturer's image. **Schuler and Porsche** use track-and-trace solutions from **German Edge Cloud** in their **Smart Press Shop** in Halle so they can track body part defects more quickly and effectively.

Text: Hans-Robert Koch

Uncompromisingly high quality is the benchmark for suppliers and manufacturers in the automotive industry, who must ensure their parts are free from defects. If a fault does occur, it is important to find the cause immediately. Traceability is therefore a must and it is crucial companies can trace all processes, from raw material procurement through production to use and disposal.

However, achieving this means having to obtain more transparency by networking and digitalising production and entire value chains. This increases the need for suppliers to integrate their own production facilities into hybrid cloud infrastructures or get them ready for emerging platforms such as Catena-X, an ecosystem in the automotive sector.

Plant engineering company Schuler and German Edge Cloud have therefore set themselves the goal



"In the event of a recall, the entire supply chain can be seamlessly traced and the cause of the fault quickly identified."

Domenico Iacovelli
CEO of the Schuler Group

of helping companies overcome these challenges with an easy-to-use solution. The result is a flagship project in the press shop sector that brings together two very different worlds – software and plant engineering. Thanks to this collaboration, Schuler can offer a track-and-trace solution based on edge-cloud technologies within its digital suite, which is used for digitalization in the press shop.

Schuler is contributing its expertise in metal-forming technology while GEC is providing its know-how in edge and cloud technology. The end result is that Schuler's customers are getting genuine added value in terms of quality, scalability, cost-effectiveness and transparency in production. Going forward, the solution should also form the basis for the use of artificial intelligence (AI) to optimise production.

PORSCHE AND SCHULER RAISE THE BAR

The solution is already being used on a pilot basis in a joint venture by Porsche and Schuler. The Smart Press Shop in Halle is a fully networked facility for the flexible production of car body parts. The project is setting new standards for developments such as predictive maintenance, smart production control and production efficiency. The plan is to use the technology to press parts and components for the entire Volkswagen Group in the future, with other OEMs to follow.

"One of our goals is to raise the production efficiency and digitalization of important stages in automotive production to a new level for metal-forming technology. The first step is to focus on traceability. In the event of a recall, for example, the entire supply chain can be seamlessly traced and the cause of the fault quickly identified," says Domenico Iacovelli, CEO of the Schuler Group.

Based on consistent data, the track-and-trace software from GEC ensures full traceability within production processes and is compatible with the public clouds of major OEMs and hybrid clouds such as the Schuler Cloud. A significant benefit of the solution is full data sovereignty, which ensures that expertise and critical production data remain in the right hands. ■

FIND OUT MORE

GERMAN EDGE CLOUD

www.gec.io/en

Plastic components for spindle drives

LIFTING THE LID ON CONVENIENCE

Performance and convenience are the bedrock of the automotive industry, with convenience being particularly important in the luxury sector, where power tailgates come as standard, especially on SUVs. As we reveal here, high-performance **plastic components from LKH** ensure the tech is built to last.

Text: Meinolf Droege

Hidden from view and virtually inaudible, they perform their duties reliably for years. These drive units do the heavy work for you, gently opening and closing the boot lid of your car at the touch of a button or via a proximity sensor. Behind this technology are amazingly complex plastic components that have to meet a raft of requirements – a challenge that is just perfect for LKH Kunststoffwerk.

A global market leader for automotive applications needed excellent mechanical performance in a tight installation space for its electromagnetic spindle drives. This is where LKH came on board as a partner, despite massive competition from Asia. “Which brings us to the point,” says Project Leader Markus Sandmann. “Projects are usually awarded based on price. Nevertheless, we won this project from the international OEM thanks to our attractive overall package. Advantages such as speaking the same language and being in the same time zone were of course a bonus.”

COHERENT COMPLETE PACKAGE DEVELOPED

Materials account for around 50 per cent of the product costs in this project. LKH can offer certain cost advantages due to high purchasing volumes for various polyamide grades from different sources. However, there is limited scope for optimisation. Sandmann explains: “In this market, which is both price-sensitive and technically demanding, it is important to work with the customer to develop the optimum service

How can customers achieve cost-effective plastic solutions?
By finding an optimum service package covering everything from injection mould design to series production.

Precision plastics: Volker Hindermann (below right), Managing Director of LKH and Project Leader Markus Sandmann (left) hold the components in their hands.

"Projects are usually awarded based on price. Nevertheless, we won this project from the international automotive supplier thanks to our attractive overall package."

Markus Sandmann
Project Leader at LKH

package, from the design of the injection mould through to series production. We can usually work to a tight schedule." The feasibility study that LKH proactively carries out as standard before a contract is awarded has proven to be particularly effective at safeguarding the start of series production. This is supplemented by up-front quality planning meetings with the customer to identify key issues. Problems that would typically not be encountered until mould-making or subsequent production operations are systematically identified and dealt with at this stage, reducing the risks in terms of costs and scheduling. Relatively small design changes helped to deliver significant cost and quality improvements for the two components of the spindle drive. The low runout tolerance of less than 0.1 millimetre over the entire length of the spindle – despite variations in wall thickness – and the part's high fibre content presented a major challenge.

12-CAVITY MOULD DEVELOPED

Mould design determines a high proportion of process costs. LKH decided to develop 12-cavity hot runner moulds instead of the 8-cavity moulds originally envisaged. These promised the best value for money in terms of mould costs against production outlay over the medium to long term. The aim was to design and build the mould to enable unattended production during "ghost shifts".

Another challenge was that the spindle drive components required a high-temperature mould with a special cooling system. On top of that, the carbon fibre content in conjunction with the intricate internal and external serration required stringent process control with little margin for error.

FIND OUT MORE

LKH
www.lkh-kunststoff.de

QUALITY ENSURED

To ensure series production started as it should despite the demanding processes in the 12-cavity mould, LKH used the "Design of Experiments" (DoE) statistical method. Stasa QC software from Kistler was used, which helps with selecting the optimum settings so that stable processes and the ideal operating point can be quickly identified.

Mould design and construction also delivered significant potential cost savings for another project associated with the drive for the tailgate. LKH developed a "family mould" for the two components of a connector, which are made from a polyamide 6.6 with 60 per cent glass fibre fill and need to meet tight tolerances. The two different components are formed in a single mould and in one shot, but are removed and stored separately. The carefully balanced injection technology ensures consistently high quality and low material stress despite the different weights and high glass fibre content.

Projects like the drive for the tailgate may not have a high profile – given that the components in question are virtually invisible – but they can certainly pose a tough challenge. All the same, even in a globalised market with varying cost structures, fast and cost-effective solutions for precisely this kind of challenge can still be developed right here in Germany. ■

NEWS

DONATION FOR REBUILDING IN FLOOD-HIT AREA

€930,000 DONATION

The catastrophic flooding in parts of Germany caused destruction on a scale that is almost unimaginable. The **owners and employees** of the Friedhelm Loh Group were agreed: **We want to help!** They had soon collected 930,000 euros, the highest amount raised by any donation campaign in the Group's history. Their donations will benefit aid projects and individuals alike.

Text: Hannah Weber

Flood victims. The Ahr Valley was not the only area hit hard by the heavy rainfall in mid-July. The Paul-Klee-Schule in the town of Leichlingen, a school for children and young people with physical and mental disabilities, also found itself under 1.70 metres of water (above). It is amongst the recipients of the funds that Friedhelm Loh Group employees collected immediately after the disaster to help the victims.

We saw some horrific scenes following the worst flooding in a century in the regions of Rhineland-Palatinate and North Rhine-Westphalia in western Germany. Heavy rainfall resulted in flash flooding and massive deluges that led to over 180 deaths and caused damage running into billions. Numerous families – but also schools, nurseries and social facilities – lost many of their possessions and are now facing months of clean-up work.

As a family company, the Friedhelm Loh Group didn't need to think twice before taking action to help those in need. Thanks to extremely generous donations from staff that were tripled by Prof. Friedhelm Loh, Owner and CEO of the Friedhelm Loh Group, and further donations from the owning family, a sum of 930,000 euros was soon collected for the flood victims – the highest amount ever donated in the company's history. "You have sent out a sign – a clear sign of compassion and, what's more, a moving sign of your willingness to help people in dire straits," said Prof. Loh in thanking all his staff for their solidarity. Many employees also travelled to the flood-hit areas to help in person or organised aid campaigns for the victims. "They are setting a wonderful example," emphasised Prof. Loh.

DONATION RECIPIENTS

- **Nurseries**
- **Schools**
- **Youth organisations (youth centres, open youth work, YMCA, etc.)**
- **Facilities/day-care centres for the elderly and hospitals/clinics**

SUPPORT IN DISASTER AREA

The funds are being distributed via the Rittal Foundation, the charitable foundation of the Friedhelm Loh Group. They are going to projects and social institutions in the local area and will benefit nurseries, schools, youth organisations and initiatives helping the elderly. The foundation is keeping in close contact with the flood victims to get an idea of the extent of the damage and the help required. Recipients include nurseries in Leverkusen, two schools (the Philipp Freiherr von Boeselager Realschule in Ahrweiler and the Paul-Klee-Schule in Leichlingen), the disability support organisation Lebenshilfe Sinzig and Caritas in Euskirchen. Thanks to this financial assistance, they can repair flood damage and playgrounds and obtain vehicles to transport relief supplies or pupils. Counselling and psychological support services for victims are benefiting, too. Some of the money is also being channelled through the donation accounts of local municipalities, churches and aid organisations to help individuals quickly and directly.

TRAINING AND STUDIES

70 talented new recruits for the digital future

The next generation. In September, 55 young people (pictured above) from the Friedhelm Loh Group started training to become warehouse logistics specialists, industrial electricians and IT specialists for application development. The new Rittal, Eplan, Cideon, German Edge Cloud,Stahlo, LKH and Loh Services staff will obtain the qualifications they need to become the specialists of the digital future. On July 1, 15 young women and men also started their StudiumPlus work/study programme – a seven-semester Bachelor's degree course focusing on disciplines such as mechanical engineering, IT and logistics management. "We are delighted to have recruited these young people as the specialists of the future. It's a great opportunity both for them and for our Group of companies," said Uwe Scharf, Managing Director Business Units and Marketing at Rittal.

CCI HONOURS PROF. FRIEDHELM LOH

Model entrepreneur

To mark the 60th anniversary of Rittal, the Lahn-Dill Chamber of Commerce and Industry honoured company owner Prof. Friedhelm Loh. The certificate presented to Prof. Loh by CCI President Eberhard Flammer recognises 60 years of business operations, active corporate social responsibility and social commitment to the people in the region. Flammer thanked Prof. Loh for his successful entrepreneurship and for setting such a fine example: "Your lifelong commitment demonstrates what it means to embody community spirit and take social responsibility for the people in our region and beyond. Your actions are the personification of social commitment. You create and safeguard jobs and thus prosperity for our region, without losing sight of those who are less fortunate." Prof. Loh replied by saying that this had been made possible by the capacity for innovation that Rittal has demonstrated over the past decades in evolving from a "sheet metal bender" into a digital company: "What defines our Group of companies, our staff and our management team is our curiosity, our customer focus, the courage to take risks and the pleasure we take in shared success. I am very proud of the 60-year success story we have written together with all our staff."

SUPERHERORUN

Running together to fight blood cancer

Charity run. The Berzdorfer See, a lake on the southern outskirts of Görlitz, was the perfect location for an event like the SuperHeroRun. Individuals and teams made their way round the 8.5 km course consisting largely of woodland and dirt tracks on the site of the former Berzdorf mine. There was no need to be an experienced runner to take part. After all, it wasn't times or placings that determined who were the heroes of this event in early October. Teaming up with the German Bone Marrow Donor Database (DKMS), the organisers offered participants the opportunity to help in the fight against blood cancer by registering as bone marrow donors. The Friedhelm Loh Group provided 3,000 euros of funding for the event. The reason behind the company's involvement is that a Rittal employee is looking for a stem cell donor for his daughter.

DONATION FOR THE URBANA YOUTH CENTER

Giving young people a better future

Prospects. Rittal Corporation USA is donating over 18,000 US dollars to support community and youth work in the area around its production site in Urbana, Ohio. The donation is going to the Urbana Youth Center (UYC), which helps young people with everything from homework to preparing for the world of work so they have better prospects for the future.

"When a team from the Urbana Youth Center approached us, we immediately recognised the valuable work the UYC does," explains Mike Freund, CEO of Rittal Corporation USA. "We know that around a third of children in our region live in poverty. Family and community are very important to us and we would therefore very much like to help bring about change," he adds. The donation will fund measures such as the youth centre's homework and learning support programme.

PEOPLE FOR CHILDREN – TOUR OF HOPE

50,000 euros for seriously ill children

The Rittal Foundation donated a total of 50,000 euros to "People for Children" and "Tour of Hope" in August and September. Both of these initiatives support children with cancer and their families. "They do valuable work that gives many children hope," said Prof. Friedhelm Loh, Owner and CEO of the Friedhelm Loh Group, when handing over the 25,000 euro donation to "People for Children".

"Tour of Hope" also received a donation of 25,000 euros. Friedemann Hensgen, Chairman of the Rittal Foundation, had the following to say at the tour's closing event: "We are impressed that you are remaining fully committed to your mission despite the pandemic."

Refugees at the Friedhelm Loh Group

COURAGE CREATES A FUTURE

Training refugees is an opportunity for everyone – the refugees can learn a trade and find a new home, while companies acquire new talent and increase their diversity. In this article, staff from Afghanistan, Syria and Eritrea, and their colleagues and supervisors from the Friedhelm Loh Group, talk about how we can do this together and what makes it worthwhile. It gives us **faith in the future** – even if there are obstacles in our way.

Text: Michael Siedenhans and Hannah Weber

More than 82 million people worldwide have been displaced by war, terror or famine in their homelands. They long to find a safe, better life far away from their old homes. The road they travel leads to an uncertain future, and there are many obstacles in their way. Immigrants face a mountain of tasks when they try to set themselves up in a new homeland. They have to get used to a new culture, a new language and a new job. This takes a lot of courage. In fact, successful integration takes courage on both sides – including the people in the host communities.

RESPONSIBILITY TOWARDS OUR LOCAL COMMUNITY

The companies of the Friedhelm Loh Group are proof that this courage is rewarded. While many other employers are put off hiring refugees due to their uncertain residency prospects, these companies are offering a secure future to refugees who are unable to return to their homelands due to the unstable situation there. The refugees receive training and are integrated into working life. Owner and CEO Prof. Friedhelm Loh explains: “As the region’s biggest employer, we have a responsibility to our local area, and there are many people here looking for a new, peaceful homeland.” This is why the Friedhelm Loh Group, together with the Rittal Foundation, the district of Lahn-Dill, and the Lahn-Dill Chamber of Commerce, launched the “Qualifications for refugees” project in 2015. Its success has been remarkable. The Syrian, Eritrean and Afghani refugees involved are now fully integrated into working life. “As a global company, we benefit from the special talents and experiences of the refu-

Looking ahead with confidence to a future together: Stana Gul Jabarkhel and Mohibullah Mohibi with Emre Varol, Team Leader for injection moulding at LKH (left to right).

AT THE END OF 2020,
THERE WERE AT LEAST

82.4 million

FORCIBLY DISPLACED PERSONS

13 million

OF THEM UNDER 18
YEARS OF AGE

Hundreds of thousands of people are currently trying to flee Afghanistan.

Source: UN High Commissioner for Refugees (UNHCR)

gees, which we are in need of due to the current shortage of skilled workers," says Prof. Loh. It is an example for other companies, too. The fact is, Germany is running out of workers. According to the Federal Employment Agency, some 400,000 immigrants are needed every year to fill the gaps created by demographic change.

AN OPPORTUNITY IN A FOREIGN COUNTRY

It took courage for Khaibar Fatehzada and Mohibullah Mohibi to leave Afghanistan years ago. War forced them out. They saw no future for themselves in their country, which had been destroyed and was still threatened by terrorism. "As a child, I wanted to become an engineer, but I simply didn't stand a chance," says Fatehzada. After an adventurous escape via Russia, he ended up in Germany in 2013 – without knowing ▸

GERMANY

1.77

million refugees with various residence statuses were living in Germany in 2020.

Source: German Federal Ministry of the Interior, Building and Community

anyone, or the language, or anything about the country. Did he stand a chance at all in this new country?

Yes, he did – he found his chance in the "Qualifications for refugees" pilot project. Fatehzada was selected for the project. Two years later, Fatehzada and his Rittal colleague Eyobel Gebreyesus from Eritrea were among the first refugees in the Lahn-Dill district to take the Chamber of Commerce exams – with success. In the meantime, Fatehzada and Gebreyesus have become experienced machine and system operators. Not only that, they still work for Rittal, in its Ewersbach plant.

EXTREMELY COMMITTED, WELL INTEGRATED

"I just really like the company – my colleagues are friendly, and my supervisors support me whenever I want to add to my qualifications," says Fatehzada. However, there is something else just as important. "Khaibar is always extremely committed. It's infectious for the whole team," says his Team Leader Lothar-Michael Wege. At work, everything is great. At home, the Afghani has also settled in well in Germany. He married in 2019, and now has a child and a flat of his own. In addition, he plays football in his spare time for SSV Guntersdorf in the district league. The fact is, Khaibar Fatehzada has integrated into German life. This is also partly down to his colleagues, who respect and accept him. After all, good interpersonal relationships are what integration is all about.

ALWAYS BEAMING

Eyobel Gebreyesus from Eritrea has had a similar experience to Fatehzada: "I really like it at Rittal. The

MOHIBULLAH MOHIBI

LEARNING SOMETHING NEW EVERY DAY

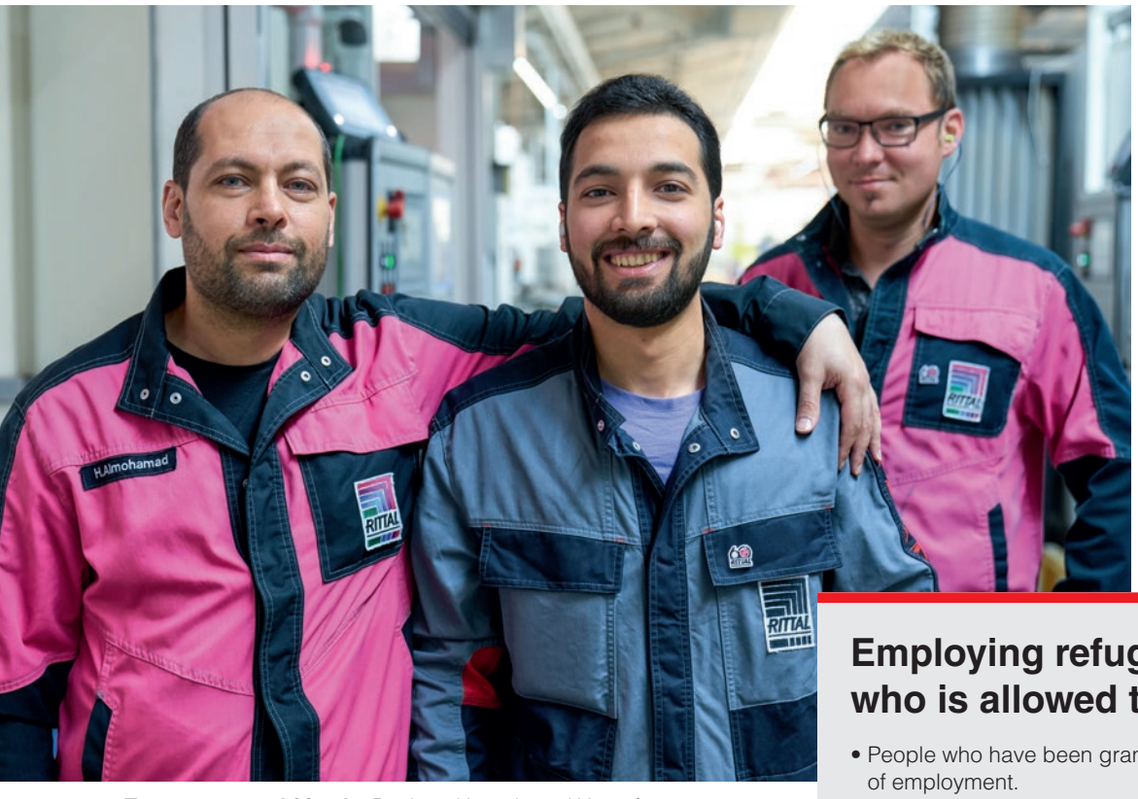
He fled the war in Afghanistan in 2015, arriving in the Lahn-Dill district without being able to speak a word of German.

When Mohibi left his family and home in Afghanistan, one thing was certain from the start – there was no going back. He would have to fight for his new future, and he has been doing so since he arrived in Germany. Initially, he didn't speak a word of German. To learn the language, he worked and studied day and night, doing night shift after night shift so he could attend German courses during the day – courses he paid for himself. He reaped the rewards of all these efforts. He now has a permanent contract with LKH as a multiple machine operator. And the best thing is, "I learn something new here every day – especially from the people who support me as colleagues and friends."

Trained eye: Together with his colleague Stana Gul Jabarkhel (right), Mohibullah Mohibi checks the quality of the injection-moulded products.

"Mohibullah's thirst for knowledge, independence and sense of responsibility earned him his permanent contract."

Emre Varol
Team Leader for injection moulding production at LKH



Team mates and friends: Brothers Hussein and Yousef Almohamad and their Team Leader Viktor Ritter (left to right).

"The two brothers put everything into their work. I'm glad to have them on my team."

Viktor Ritter
Team Leader in the Rittal Rittershausen plant

Employing refugees – who is allowed to work?

- People who have been granted asylum can take up any form of employment.
- Asylum seekers can only begin working after a three-month waiting period.
- People recognised as refugees and "quota refugees" have unrestricted access to the job market.
- People from safe countries of origin who have a "temporary suspension of deportation" and submitted their application after 31 August 2015 are not permitted to work.
- There is a general ban on paid employment for all asylum seekers from safe countries of origin who submitted their applications after 31 August 2015.

Sources: Section 47 (1a) and 61 (1, 2) Asylum Act (AsylG), Section 23 Residence Act (AufenthG), Section 55 AsylG and Section 32 Ordinance on the Employment of Foreigners (BeschV).

people here have given me the chance to learn a trade. I wouldn't want to be anywhere else," says the 32-year-old, and goes on to say how hard he found it to learn German. He now copes well with the language. This is at least partly down to the way he communicates with people. He interacts with lots of Germans in the community he now calls home – at the football, at parties, or in the church where this devout Christian plays an active role. The greatest compliment comes from his Team Leader, Adam Kowalski: "Eyobel is always beaming when he comes to work. The whole team loves his relaxed manner, his quiet assurance and his joy. We wouldn't be without him." What's more, Kowalski adds, Eyobel is willing to take on any task, including working a shift on a Saturday afternoon. Gebreyesus received his permanent residence permit for Germany in the spring.

LIVING IN FREEDOM AND PEACE

Yousef and Hussein Almohamad also have permanent residence permits. The brothers from Syria are even hoping to apply for naturalisation in the coming year. Their reason is simple: "In Germany, we can live and work in freedom and peace," says Hussein, the older of the two. It's no wonder he chooses to put it like that. The brothers are originally from Aleppo in the north of Syria – a town that has been fought over like no other in the civil war. They joined the Rittal refugee project four years ago, and now they have permanent employment contracts to work as trained machine and system operators in the Rittershausen plant

KEEN TO LEARN AND INDEPENDENT

Yousef, the younger brother, is already thinking further in the future. "I would like to go to technical college and continue training in the fields of pneumatics and hydraulics." Team Leader Viktor Ritter is well aware of Yousef's self-confidence. "They put everything into their work. Hussein is very keen to learn, and taught himself how to weld." Ritter also supports the two men away from work, too – helping them move house and offering advice on everyday living in Germany, for example when it came to buying a car. The brothers now always come to work by car, with Yousef turning the radio up loud and singing along. "I love German pop songs the most," he says. His Team Leader laughs on hearing this, and simply says, "I'm glad to have them both on my team."

RELIABLE AND HIGH-PERFORMING

This feeling is familiar at LKH Kunststoffwerk in Heiligenroth, too. That is where Mohibullah Mohibi from Afghanistan works. He was 23 years old when he arrived in the Rhine-Lahn district in 2015 without knowing a word of German. "Returning to Afghanistan was out of the question for me, so I began fighting for my future in Germany," he says. He rose to the challenge and started working at LKH as a casual ▸

worker through a temping agency. Before that, he had spent a whole year working night shift so he could attend German classes during the day – which he paid for himself. Mohibi's dedication paid off. At the start of 2019, LKH took on the machine operator as an in-house member of staff. Six months later, he had worked his way up to multiple machine operator, and ultimately secured a permanent employment contract at the beginning of 2021. "He earned this through his thirst for knowledge, independence and sense of responsibility," says Emre Varol, Team Leader in injection moulding production. For LKH Managing Director Volker Hindermann, it is also a logical decision, because "in Mohibullah Mohibi, we are gaining a reliable, responsible, high-performing member of staff."

LEAP OF FAITH

However, this decision was not a matter of course. It took a certain amount of courage on the part of the employer. In spring 2016, Mohibi applied for asylum. One year later, he was notified of the decision. Due to his country of origin, he was initially granted only a "temporary suspension of deportation" – and that is still his situation. In Germany, this status usually forbids the holder from working. Only under certain conditions does the person in question obtain a work permit. Mohibi turned to the Diakonie Rhein-Lahn (a Christian charity), where he met Zarmina Ahmadi, an immigration counsellor. "Many refugees don't pursue the chance to get work because they don't think anything will come of it," she says, going on to praise LKH Kunststoffwerk for the example it sets: "Despite his precarious residency status, the company placed a great deal of trust in Mohibullah. That is by no means standard practice."

We are a team: Team Leader Lothar-Michael Wege, Head of Training Matthias Hecker, Team Leader Adam Kowalski (back row, left to right), Eyobel Gebreyesus and Khaibar Fatehzada (front row, left to right).

HUSSEIN AND YOUSEF ALMOHAMAD

LEARNING A NEW TRADE

In 2015, the brothers Hussein and Yousef Almohamad fled Syria – their home city had been reduced to ashes. They left behind their parents, their sister, their brother and Hussein's tailoring business.

There came a point when Hussein (top left) and his brother Yousef, who is 15 years younger, could not take life in their homeland any more. They headed for Turkey, and from there took a boat to Greece. Then they travelled on foot, by bus and by train to Germany. Now that they are here, they live their lives in peace and freedom, and have permanent jobs as machine and system operators. This is Hussein's second profession – he used to be a tailor, making made-to-measure suits. His brother Yousef learned welding in Syria, but only completed his training once he was in Germany.

EYOBEL GEBREYESUS AND
KHAIBAR FATEHZADA

DIFFICULT LANGUAGE

“This is Germany”, Eyobel Gebreyesus and Khaibar Fatehzada were told when they arrived. Since the welcome was in German, they didn’t understand the words – not at that point, anyway.

Eyobel Gebreyesus (bottom left) was 24 when he left civil war-ravaged Eritrea in 2013 and arrived in Germany without speaking a word of the language. The people where he grew up speak Tigrinya, a rare language. There’s no such thing as a German-Tigrinya dictionary. However, his colleagues and trainers helped him learn German. He also attended a language course at the Wetzlar Adult Education Centre. Khaibar Fatehzada (right) also had problems with the new language to start with – especially the grammar and the huge number of specialist terms: “If I didn’t understand one of the technical terms, I asked a colleague and they explained it to me.”

400,000

immigrants are needed every year to fill the gaps in the German job market created by demographic change, according to the Federal Employment Agency.

“TEMPORARY SUSPENSION” – THEN WHAT?

The trouble is, German asylum laws and strict authorities remain a major hurdle. For example, Khaibar Fatehzada and Mohibullah Mohibi from Afghanistan still only have a “temporary suspension of deportation” from Germany. Mohibi’s leave to remain has now been extended, but Fatehzada was facing deportation – despite being a refugee who has been living in Germany for eight years, speaks fluent German, has a secure job and is fully integrated into society. Head of Training Matthias Hecker did everything he could to prevent the deportation. With the support of Prof. Friedhelm Loh, he arranged for a letter to be sent to the relevant immigration authority highlighting the consequences for the employee and the company. It was a courageous step. The radical Islamists of the Taliban are now back in power in Afghanistan. The German Federal Ministry of the Interior, Building and Community has ordered a moratorium on deportations to Afghanistan, which gives Fatehzada new hope for a future in a peaceful land. ■

“The chance to work and build a new livelihood is essential for a meaningful life. That is why we support and encourage people who are searching for a new, peaceful home.”

Prof. Friedhelm Loh
Owner and CEO of the Friedhelm Loh Group

Issue 01 | 2022

Digital WOW effect

Lenze SE is entering a new era of digital transformation with **Eplan** and **German Edge Cloud**. The supplier of drive and automation technology for mechanical engineering and digital services for factory automation is having a complete digitalisation shake-up, with product data, tools for version creation and accompanying customer services being transferred to the cloud in their entirety. A new addition to the cloud-based offering from Lenze is the EASY product finder, an online tool linked to Eplan that customers can use to search products, configure solutions, request quotes and place orders.

Find out more in the next issue of be top!

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RITTAL ePocket

The digital home of automation technology

Paper is patient.

However, it's also very quickly out of date and harmful to the environment. Thanks to Rittal's **ePOCKET from Rittal – a digitital wiring plan pocket –** thick wads of paper documentation are now a thing of the past. In the future, every enclosure of the VX25, VX SE, AX and KX range will have its own place in the secure cloud. All documents can be accessed there digitally at any time via a QR code on the enclosure – by anyone involved in the project who has been given access rights by the owner.

This not only saves paper, time and reduces the carbon footprint in machine and system documentation thanks to the completely digital process flow from circuit diagram creation to simple documentation in the Rittal ePOCKET. It also creates the future potential for cooperation in switchgear manufacturing and operation, since the digital twin actively mirrors the real enclosure in the digital circuit diagram pocket. Now, it is not only easier to document changes without making errors. Thanks to future tracking options, operators, planners, switchgear manufacturers and maintenance engineers will soon have a new way of keeping in contact and doing business with each other at all times.