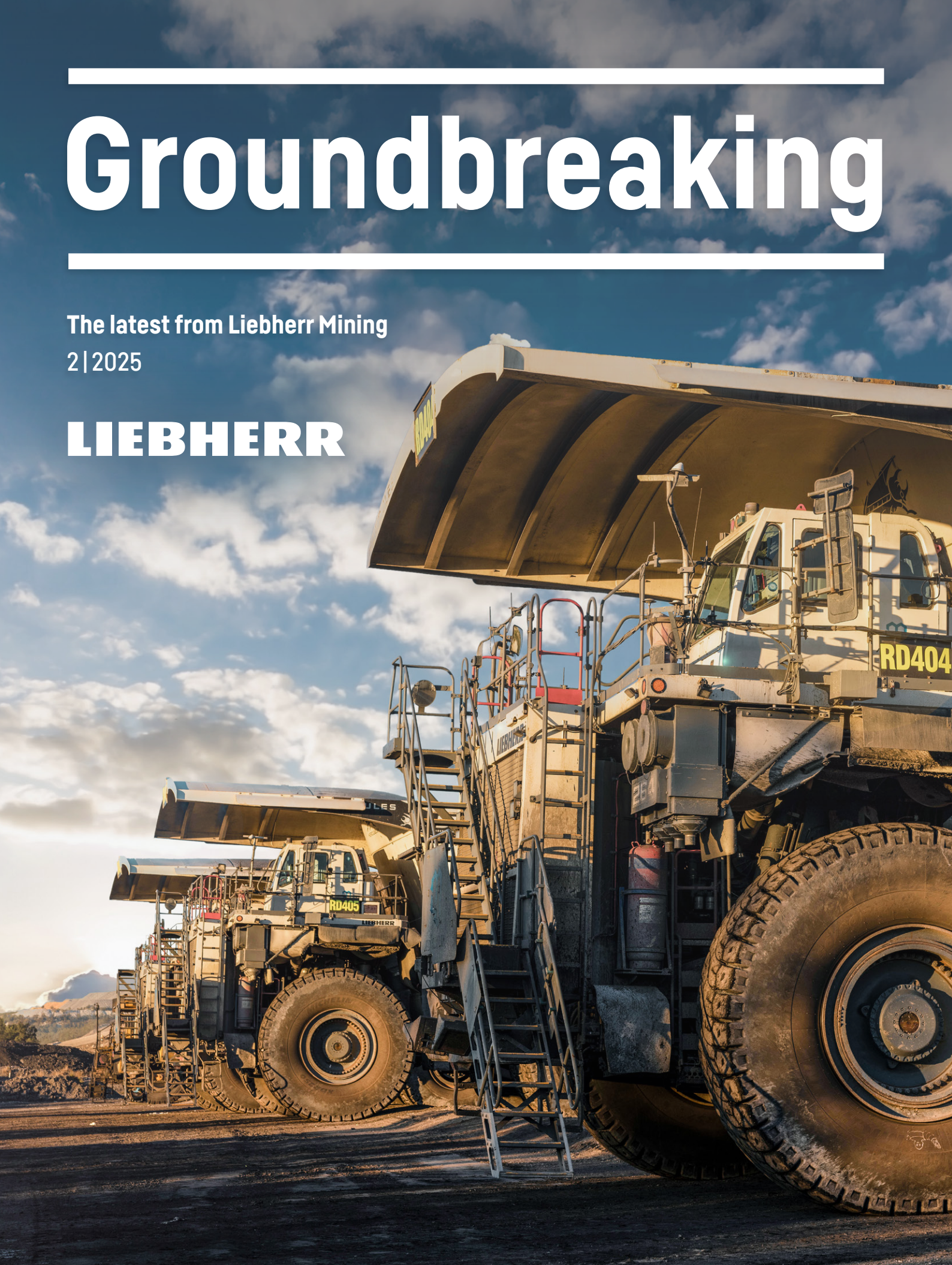
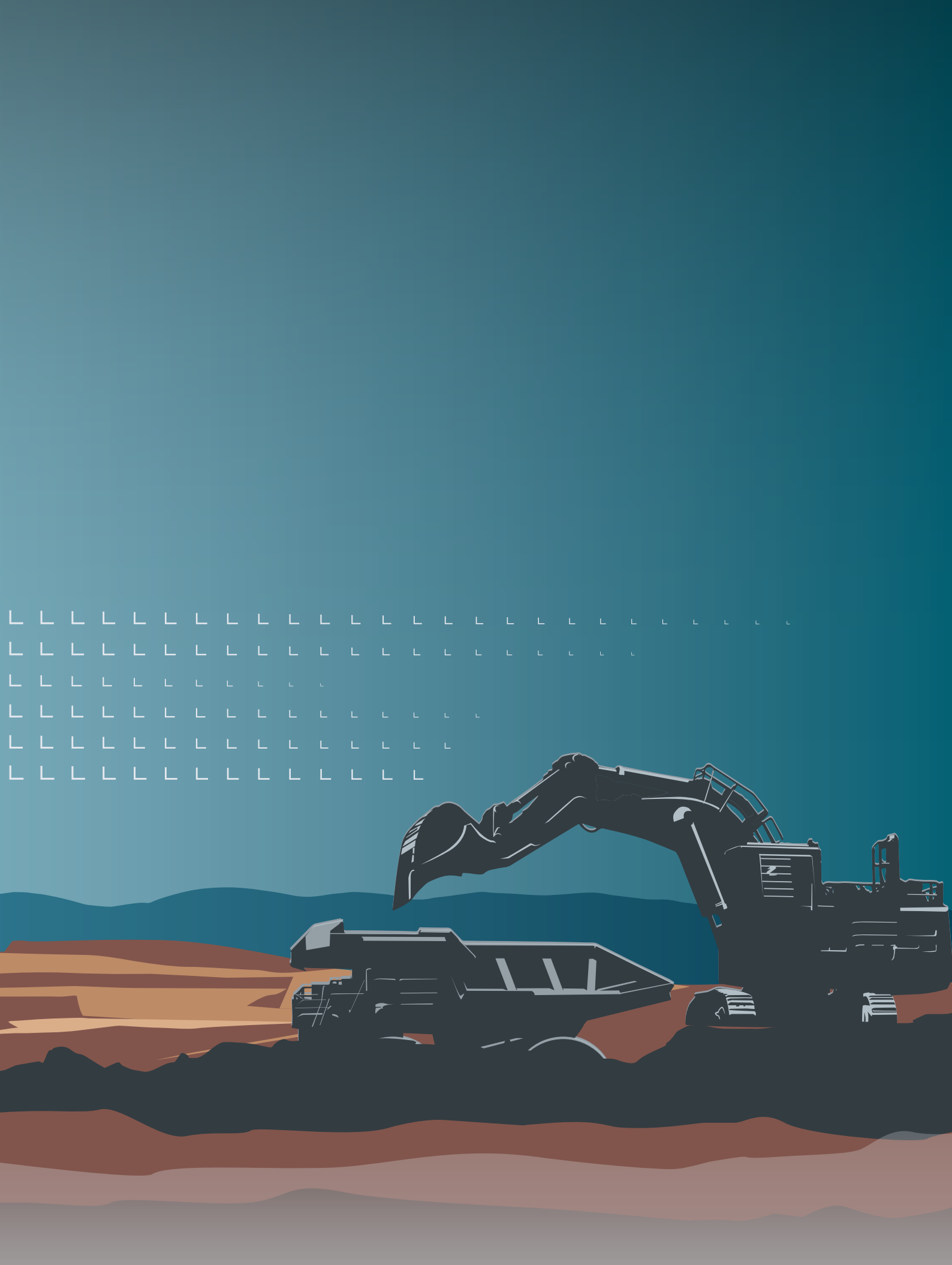
Groundbreaking

The latest from Liebherr Mining

2 | 2025

LIEBHERR





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Powering progress in Chile

We're no strangers to trolley technology at Liebherr Mining. With fleets of Liebherr trolley trucks on three continents, we know our way around catenary lines. So when Collahuasi mine approached us to build Chile's first fully operational trolley line, we were excited to put our expertise to the test.

In the Tarapacá region of northern Chile, nestled in the centre of the Atacama Desert, is Collahuasi copper mine – one of the world's largest producers of fine copper. The mine is a primary resource generator for its region as well as for Chile at large. And so, when Collahuasi proposed the idea of partnering with us on a pilot project to explore the benefits of trolley technology within the mine, we were excited to get started. Not only to support our customer, but also to flex our trolley expertise in commissioning the first fully operational trolley line in Chile.

'Collahuasi mine has set an ambitious voluntary target of being carbon neutral in its Scope 1 and 2 emissions by 2040,' says Richard Kraemer, haulage electrification solutions manager, Liebherr Mining Equipment Newport News Co. 'Partnering with Collahuasi and showing them the benefits of trolley we've seen on numerous sites all around the world, was a proud moment for us.'

This is the first time that Liebherr Mining has provided a customer with a full trolley solution – the trucks, trolley line, engineering and component supply, training and support. As such, we needed to collaborate with, and draw on the expertise from, a number of different areas in order to supply Collahuasi with both the trolley-truck fleet and trolley infrastructure that would work best for them. Which, in the end, ended up being four of Collahuasi's existing T 284 trucks retrofitted to become trolley compatible and a 1 km trolley line with two 5.5 MW transformers – a configuration that could support two loaded trucks connected to the line simultaneously while leaving the pit.

The initial design for the trolley line came from Collahuasi itself. The company was best placed to explain the unique environmental conditions at the site – including the combined challenges of extreme altitude, high winds and seismic activity – as well as the mine's current and future production targets. It was then up to our application engineering team to calculate the potential benefits of the solution, using simulations that showed significant improvements in efficiency and fuel consumption. Liebherr Chile – our sales and service company on the ground – provided the extensive local market and product expertise necessary to substantiate application engineering's findings. And the last piece of the puzzle was the specialised support from Liebherr Mining Equipment Newport News Co. – our truck production facility in the USA – and trusted third parties that made it possible to truly capture the potential of trolley technology in this environment.

Teamwork makes the dream work
Getting the trucks ready for trolley and building the trolley infrastructure were further exercises in incredible teamwork. Not only did these processes need to happen in tandem, but they required the coordination of a number of different teams that each had different responsibilities. The retrofitting process had to happen in and around Collahuasi's usual operations to keep disruptions to a minimum. To accomplish this, it was decided that a staged approach would be best. The first stage was to modify the trucks' superstructures by adjusting the handrails, moving the battery box and reinforcing specific areas like the radiator shroud. Once these modifications were complete, the trucks were able to resume their usual activities while progress on the trolley line was made.

We leveraged Liebherr's global supply chain to find the most suitable components for building this trolley line to meet Collahuasi's environmental and production requirements. Installing these components and building the trolley infrastructure was handled primarily by Collahuasi and its construction partners, with Liebherr personnel – as well as our trusted third-party partners – providing supervision and guidance throughout the process.

Once the trolley line was nearly finished, the second stage of the truck retrofit could begin. The Liebherr team installed the trolley connection hardware onto the trucks, which included the pantograph support structure, pantograph and trolley interface. The canopy of the dump body also needed to be shortened so it didn't interfere with the pantograph.

While most of the retrofit process was fairly standard, there were some changes that needed to be made due to the extreme conditions these trucks would be working in.

'Making these trucks compatible with the high altitudes at Collahuasi mainly meant changes to the drive system. The software installed onto each truck was specifically created for this use case to ensure smooth operations for the drivers in the cab,' explains Kraemer.

Preparing people on site
Being a complete trolley solution provider means more than providing powerful trolley trucks and state-of-the-art trolley infrastructure. It means training onsite personnel so that they're not only familiar with the equipment but can also use it to its maximum potential. For this particular project, we provided a mixture of theoretical and practical training for the different groups of onsite personnel that would be interacting with the trolley line and/or trolley trucks in some way: mining instructors, loading equipment operators and the truck operators who would be working under the trolley line.

'It's not just the truck operators who need to know how to work with the trolley system. Anyone operating loading equipment like electric shovels or front-end loaders need to know the proper way to load trucks equipped with pantographs. And mining instructors also need to know how the trolley system works overall in order to adjust their mine plans accordingly,' says Kraemer.

Keeping the project on track
Our support of Collahuasi personnel, its trucks and its trolley line didn't stop when the trolley trucks started their first shift back in July. Once a month, starting after that initial commissioning, Liebherr Chile personnel have been observing, monitoring and validating good operational practices at Collahuasi to ensure everything is working as it should. These checks will continue monthly for a six-month period and then, after that, the checks will move to every two months – or as Collahuasi requires.

Beyond training, we also wanted to be sure that Collahuasi has the resources it needs to support its people and its new trolley project should unexpected challenges arise. And so, for the first 12 months, Liebherr Chile will stock critical components for the line in a warehouse at the mine. Collahuasi will also receive remote service for the trolley line's substation during the same period.

'As this is the first fully operational trolley line in Chile, we wanted to give this project the best possible chances of success. Not only to support our customer in reaching their decarbonisation targets but also to highlight the results that can be achieved with this technology,' says Kraemer.

Collahuasi's trolley trucks are also being taken care of. Well before the beginning of this trolley project, Liebherr Chile had been supporting Collahuasi's fleet of Liebherr machines under a comprehensive MARC, also known as a maintenance and repair contract. These contracts consolidate all of the services needed to bring out the best in our machines. Now that four of Collahuasi's T 284s are trolley compatible, Liebherr Chile is working with the customer to include the trolley hardware installed on these trucks into the scope of the MARC to ensure these machines continue to give their best in the challenging conditions on site.

Hard work pays off
Collahuasi has been seeing some promising results since the trolley solution's commissioning.

'The trucks under trolley have been reaching loaded uphill speeds of 25 km/h – more than double the speed of their diesel counterparts,' enthuses Kraemer. 'And on top of this, we have seen preliminary data that suggests the fuel that would usually be burned along this section of haul road has been dramatically reduced.'

Given that this project was a pilot program for Collahuasi, so the company could evaluate the effects of trolley on its operations and potentially expand the project to other sections of the site, this is a fantastic outcome. The fact that these results also happened to be achieved by the first ever functional trolley line in Chile speaks volumes about the incredible power of trolley technology as a pathway to decarbonisation.

However, none of these impressive discoveries would have been possible without the hard work of all of the different people involved.

'This project was accomplished through communication and teamwork,' says Kraemer. 'People played the biggest role in its success.'

How do trolley lines work anyway?
Trolley systems are a form of dynamic charging that allows diesel-electric mining trucks to use electricity as a power source while travelling, rather than its usual power source – usually a diesel combustion engine. Trucks working under trolley connect to their mine site's electricity grid via a pantograph or connection bar, depending on the type of trolley system being used. For maximum benefit, trolley lines are usually installed on uphill sections of haul road where the most fuel and/or energy is being consumed. Mines with trolley lines installed often see significant increases to speed on grade and reductions in greenhouse gas emissions. In fact, some sites are even able to reduce the size of their truck fleet due to the gains in productivity achieved by the trolley line.

AI and Liebherr Mining

Liebherr Mining is currently working on the best ways to incorporate artificial intelligence, or AI, into everyday activities for the benefit of our customers. To shine a light on the ways in which Liebherr Mining is working with AI, we spoke to Florian Dettwiller, head of innovation at Liebherr-Mining Equipment SAS.

As head of innovation, Florian acts as a guide for innovative thinking within Liebherr Mining. This means keeping an eye on current trends within the mining sector and identifying when these trends become mainstream enough to warrant updating Liebherr Mining's business strategy. One such trend is AI. In an arena as fast paced and fast moving as AI, it's important for businesses like Liebherr Mining to keep up with the latest developments. Because of his role within the business, this means Florian works to identify the areas where AI would be most beneficial, initiates activities to encourage AI adoption and works closely with the other product segments to ensure a cohesive Liebherr approach to AI technology. All of this made him the perfect person to speak to about Liebherr Mining's relationship with AI.

'We want to use AI technology to enhance our existing products, services and processes for a better experience for our customers. And the only way to do this is with humans in the room.'

Florian Dettwiller
Head of innovation, Liebherr-Mining Equipment SAS

First things first: why is AI an important topic for the mining industry?

AI has the potential to enhance most, if not all, of the different facets of mining operations. Most of these enhancements are obvious, with AI technology currently being used in autonomous machines, predictive maintenance and mineral discovery. But it has other, more subtle, uses as well. One example is that some mining houses are introducing wearable sensors into their operations that can monitor both physiological and biochemical indicators. The AI technology in these sensors makes it possible to detect fatigue and physical discomfort in machine operators, which can help avoid accidents. AI can also be used to analyse large datasets from a range of sources to find better ways of allocating resources.

At the end of the day, AI has the potential to optimise internal processes, productivity, safety, cost efficiency and even mineral discovery – it's just a matter of applying the right technology to the right problem.

And so with all of this in mind, what is Liebherr Mining's approach to AI?

It's important to note that we're not looking to compete with the big tech corporations with our AI solutions. Instead, we want to use AI technology to enhance our existing products, services and processes for a better experience for our customers. And the only way to do this is with humans in the room; humans with different areas of expertise. Both data experts and experts in business matters are needed to develop solutions that can overcome challenges faced by our customers and by our employees around the world.

How are you preparing internally for the changes that AI will bring to your business?

We've divided our approach to AI technology into four key pillars: empower, tailor, enable and engage. The 'empower' pillar is all about finding ways to give Liebherr employees the confidence to work with AI. For us, we consider AI as a way to augment human intelligence, rather than to replace it. 'Tailor' is about making sure that the AI technology we use aligns with our focus areas as a business while also respecting the existing culture and values of Liebherr. However, before we do any of this, we need to lay the foundations required for AI to function properly. This is the 'enable' pillar, where we focus on ensuring data quality through robust data architecture and governance – because without trusted data, even the most advanced AI can't deliver reliable results. And, finally, there's the 'engage' pillar, where we find practical ways to use AI to deliver solutions that have a meaningful impact on our business in some way.

What are some of the highlights of Liebherr's work with AI so far?

There have been a range of exciting developments with AI in recent years and many of the products within our technology portfolio, IoMine, will eventually use AI technology to make everyday mining operations faster, safer and more productive. However, the technology is evolving at such a rapid pace that we need to ensure we're always moving forward. One of the ways the Liebherr Group is ensuring this development is through the Liebherr AI competence centre, which was established in 2024. The heart of the competence centre lies in Ulm (Germany) where most of the team is based. However, the AI competence team also includes AI divisional leads from each of our different product segments and they're based at their respective factories.

This centre was set up to maximise collaboration between the different product segments within Liebherr so we can all work together to create synergies and to address the different challenges that arise when working with AI, such as data security and the reliability of our AI models. Together, the AI competence team has developed, and delivered, centralised communication about the Liebherr Group's AI guidelines and they are currently working on common training modules about this evolving technology that will be delivered to our employees.

We've also been involved in a couple of hackathons this year, which sought to find AI solutions to some long-standing challenges of ours.

'Creative, passionate people are needed to make AI technology successful and so they must remain the centre of the process.'

Florian Dettwiller
Head of innovation, Liebherr-Mining Equipment SAS

For those of us who may not know, what exactly is a hackathon?

Broadly speaking, a hackathon is a problem-solving event. People with the skills and the interest in building digital solutions – such as new applications, software or features on existing products – come together to design, build and present a solution to a particular challenge in just a few days. So far this year we've participated in two different hackathons and we learned a great deal from both of them.

What did Liebherr Mining gain from these hackathons?

Because one of these hackathons was held internally and the other was hosted externally, what we gained from each of them was quite different.

Our internal hackathon took place in April 2025 over two and a half days. Representatives from our different sales and service companies, factories and product segments travelled to Biberach (Germany) to a co-working space owned by BadenCampus – an innovation partner of ours since 2024. Once in Biberach, everyone came together and worked to find solutions for a challenge faced across the Liebherr Group: finding ways to support our customers before they even think to call us – with a particular focus on our spare parts business. In seeking to solve this challenge, we quickly realised that collaboration between AI experts, business experts and data architects is vital for AI solutions to succeed. We were fortunate enough to have access to AI experts from Microsoft throughout the hackathon as the tech company was one of our partners for the event. As well as providing onsite technical expertise, Microsoft also helped us to coordinate and prepare for the hackathon itself.

A month later, we were involved in the Black Forest Hackathon that took place in Freiburg im Breisgau (Germany) with university students from all over the world. For this event, different businesses provided the challenges that teams would need to solve. Our challenge asked the teams to find a way to build an AI-driven tool that can extract and validate numerical data from supplier certificates using OCR (optical character recognition) technology and compare that data to predefined compliance requirements. Much to our delight, the team that took on our challenge won the hackathon! Their success was measured using a number of criteria, including the accuracy of the extracted data, reduction of manual validation time, scalability and ability to improve both the robustness of the process and compliance efficiency.

What were the biggest takeaways from these hackathons?

Probably the biggest takeaway was from the Black Forest Hackathon, where we walked away with an AI solution that solves a problem that's been plaguing our quality department for quite some time. We're currently in the process of defining how we can implement this solution into Liebherr Mining operations, which has involved multiple meetings with members of the team that originally came up with this solution as well as our IT General Manager and Quality General Manager.

But we also learned something from our internal hackathon. We did find a solution that would help us stay on top of our customers' spare parts needs. However, we realised that we need further data integration to make this solution as good as it can possibly be. We're currently looking into ways of doing this so that we can revisit this idea at a later date.

To wrap up, what do you want people to take away from our chat?

What I want to stress is that Liebherr's work with AI is not seeking to replace humans within our business. Creative, passionate people are needed to make AI technology successful and so they must remain the centre of the process. In particular, we need people from different disciplines with different areas of expertise to fuel discussion and create ideas that we can use to better support our teams on the ground and our customers in the pit.

Liebherr's Digital Development Center
Liebherr's AI competence centre is housed within the Group's Digital Development Center, which was founded in 2020 at the Science Park in Ulm (Germany). Its purpose is to provide all of Liebherr's product segments with digital products based on cloud and IoT (Internet of Things) connectivity as well as data and AI integration. With its diverse team of software engineers, data science specialists, cybersecurity experts and AI aficionados, the Digital Development Center focuses on a number of objectives for the Liebherr Group: improving the speed and efficiency of Liebherr's digital development, supporting the standardisation of digital technologies within the Group and attracting and retaining talent for digital development.

Liebherr Mining at Bauma

News and highlights from the Bauma 2025 exhibition

Bauma at a glance

More than

100

exciting Liebherr exhibits

8 out of Liebherr's **13** product segments were represented

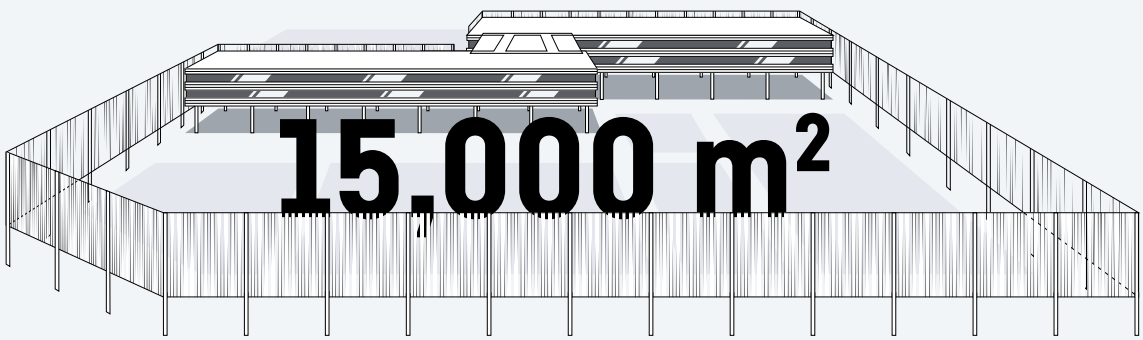
3,600+

exhibitors from **57** countries

600,000+

visitors from more than **200 countries and regions**

Liebherr's **exhibition space** spanned over

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loMine
LIEBHERR
LIEBHERR

Big bold, battery-electric

The autonomous, battery-electric T 264 made a huge impression at Bauma 2025 – delighting everyone who got to see this mammoth machine for themselves!

The T 264 Battery Electric was equipped with more than just its 3.2 MW battery. It was also showing off some state-of-the-art technology. Visitors to the Liebherr booth were able to catch a glimpse of both the static and dynamic charging options for this 240 t capacity truck. There was a 6 MW static robotic charger that can charge the truck in under an hour as well as our latest concept for dynamic charging, Liebherr Power Rail, which connects the truck to power lines at the side of the truck instead of overhead.

Add in the Autonomous Haulage Solution, and the T 264 is more than just a crowd-favourite, it's a haulage solution for the future of mining.

Star of the show

The R 9400 E electric excavator was on display at Bauma, showcasing Liebherr's extensive experience and expertise in decarbonisation solutions for the mining industry. The R 9400 E put on quite the show every time it performed in our machine demonstrations during the exhibition. Visitors could see the power of a 350 t excavator running purely on electricity and emitting zero greenhouse gases.

This impressive machine was dressed in its Bauma best, equipped as it was with the Liebherr cable reel solution, along with our latest Ground Engaging Tools. Its 24 m^3 bucket even made a picture-perfect location for a Liebherr booth selfie!


LIEBHERR
T 264
Battery Electric
264
LIEBHERR

Latest generation, next-level efficiency

The highlight of Liebherr's mining dozer line-up at Bauma was the new PR 776 G8, which now joins the PR 756 and PR 766 in the Generation 8 family. With advanced Operator Assistance Systems now available on the PR 776, this flagship dozer pushes efficiency, operator comfort and productivity to the next level.

If visitors took a trip to the Liebherr InnovationLab, they were also able to experience LiReCon, Liebherr's teleoperation system that allows machines to be controlled remotely – even from hundreds of kilometres away! For example, a PR 726 dozer at the Liebherr factory site in Telfs (Austria) could be operated all the way from the LiReCon teleoperation stand at Bauma in Munich (Germany)!


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Hands on the future

A vision for the future

Among the latest cutting-edge technology in Liebherr's InnovationLab was the S1 Vision, a new concept for material haulage. Born from a vision to rethink truck design and focus only on core components, the S1 Vision is primarily just a single axle and two tyres that can be scaled to have a payloads ranging from 220 kg to 131 t. With its battery-electric and autonomous design, the S1 Vision aims to enhance productivity and safety while reducing greenhouse gas emissions.

The S1 Vision was also nominated in the prestigious Bauma Innovation Awards for Mechanical Engineering. And while it didn't take home the prize, the nod itself is proof that Liebherr is already tackling tomorrow's challenges, today.

Hands on with technology and service solutions

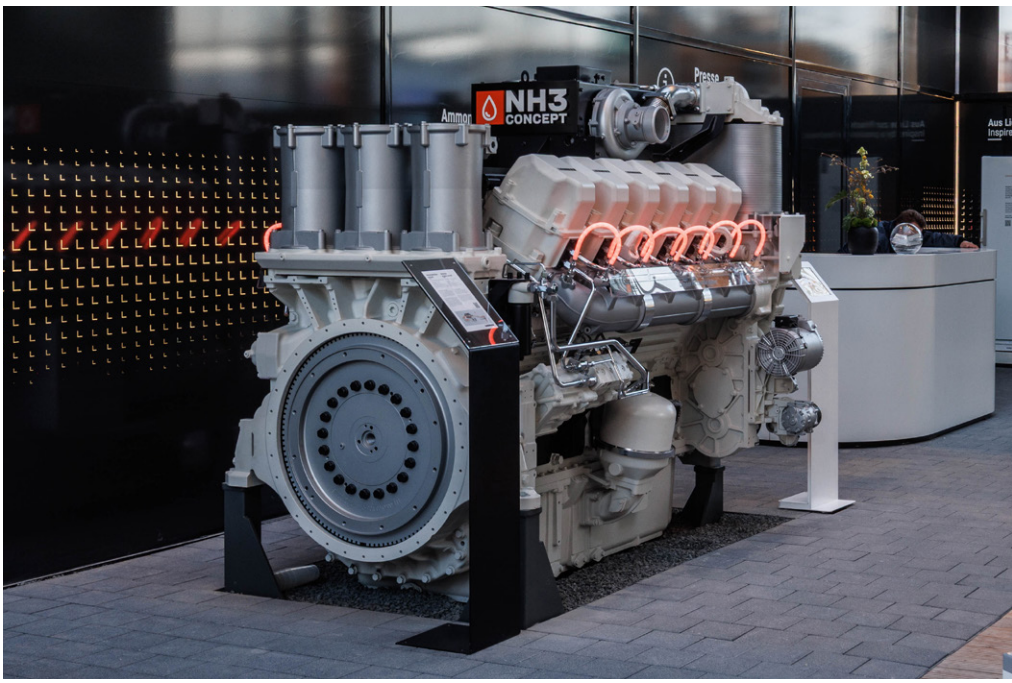
The Mining Technology Pavilion was the place to get hands on with Liebherr Mining's latest technologies and service solutions.

The Pavilion had a number of exciting exhibits to pique visitors' curiosity. They could learn how Liebherr partners with customers through the entire equipment life cycle using an interactive service table. Using virtual reality, they could explore the T 264 Battery Electric truck and its latest technology. And they could even choose to see first-hand how Remote Service uses augmented reality to improve troubleshooting capabilities. Our IoMine technology portfolio also came to life through interactive touchscreens, giving visitors a deep dive into Liebherr's integration operations approach to mining.

Exploring the future with ammonia

Liebherr-Components presented its ammonia engine concept at Bauma 2025 as part of the company's ongoing research into using ammonia as a power source for dual-fuel internal combustion engines. The results so far set a clear path forward for further development of the solution.

Green ammonia serves as a hydrogen carrier, offering the benefits of reduced transportation and storage costs. Generators and off-road powertrains fuelled by green ammonia could provide low- or zero-emission solutions for supplementing on-site power supplies. And so, with this engine concept, Liebherr can offer high efficiency density power that aligns with the requirements of the mining industry.



Energy storage and planning for construction sites

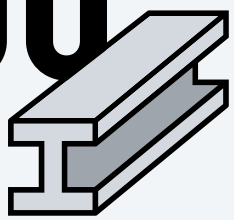
At this year's Bauma, Liebherr-Components showcased its solution for construction sites with limited power supply: the Liduro Power Ports (LPO) range of mobile energy storage systems. The LPO, being a market-leader in power and energy density, offers a highly efficient solution for locally emission-free operation and charging of hybrid or fully electric construction machinery and equipment.

The medium model range in the Liduro Power Port Series, the LPO 600, offers a battery-based energy storage system with integrated DC fast-charging stations and further AC charging connections. With 564 kWh of power, it has sufficient power for the supply of larger construction machines or fleets.

The winning formula

What do you need to build an impressive booth at Bauma?

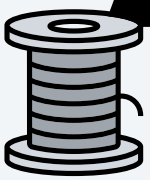
1,200
tonnes of **steel**



400
doors

90
experienced **installers**

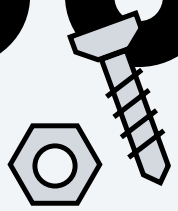
75
kilometres of **cable**



2,600
bolts

4,000
lights

1,000,000

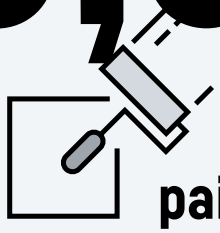


screws

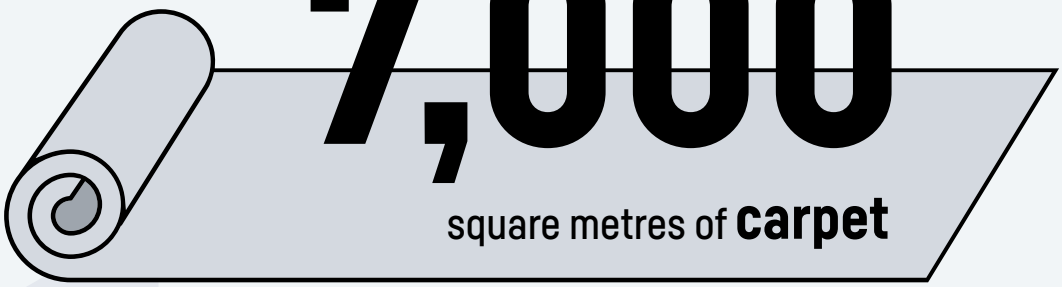
8,000

square metres of **glass**

5,000



square metres of **painted surfaces**



7,000

square metres of **carpet**

See you in 2028!


LIEBHERR
T 264
Battery Electric
LIEBHERR

Mining rock stars

Our amazing people and achievements

Friends in faraway places: learning more about Liebherr Indonesia

Indonesia is home to 285 million people, the enormous Komodo dragon, and the largest number of volcanoes of any country. But it also happens to be home to the world's biggest nickel reserves and is one of the world's leading producers of coal, copper and gold, making the country a major player in the global mining sector.

Since 1997, PT. Liebherr Indonesia Perkasa has supported Indonesian mining companies from its base in Balikpapan, East Kalimantan. But in the past few years, the Indonesian mining industry has experienced enormous change. We spoke to Christian Bombenger, managing director of sales and operations, Liebherr Indonesia, to learn how he and his team continue to provide exceptional service to their growing customer base during this transformative time.

What makes the Indonesian mining industry different from other industries?

Mining in Indonesia is unique for a number of reasons. We are major producers of a number of important commodities and are in fact the biggest producer of nickel and the second largest producer of tin, coal, copper and gold. As such, mining is a key economic pillar in Indonesia. Particularly because, as the world's leading nickel producer, we're at the centre of the global electric vehicle battery supply chain and energy transition. Our position provides substantial opportunities for export earnings and employment in the mining sector, especially in remote areas where these kinds of opportunities aren't as plentiful. However, one of the major challenges we face is the extensive infrastructure development required for new mines. A sizeable percentage of our mineral deposits are in remote areas which means things like ports, roads and smelters need to be built in order for those deposits to be extracted and processed.

Another way in which the Indonesian mining industry is unique is Indonesia's nationalistic approach to our mineral resources. There's a ban on raw ore exports here and so, unlike other major mining markets, the largest players in the Indonesian mining sector are local private companies and state-owned enterprises.

'In Indonesia, reliability is not just about machines. It's also about people showing up, knowing the challenges, and being truly committed to solving problems on the ground.'

Christian Bombenger
Managing director of sales and operations,
PT. Liebherr Indonesia Perkasa

How does Liebherr Indonesia ensure customers receive support when and where they need it in a country as spread out as Indonesia?

Indonesia's geography is one of the biggest operational challenges for any company working in the industry. With operations spread across remote islands and rugged terrains, support cannot just be centralised: it needs to be agile and proactive.

At Liebherr Indonesia, we have built our service model around being as close to the customer as possible. This means strategically placing our support teams across the regions, so help is never too far away. We also invest in training and upskilling technicians, allowing us to respond faster when it is needed.

To support this, we've invested in building and maintaining key facilities across Indonesia. Our strategically located branches, warehouses and remanufacturing centre enable us to deliver parts and services quickly, even to the most remote sites. This physical presence ensures that we are not only reactive, but also proactive in anticipating customer needs, keeping equipment running smoothly and downtime to a minimum.

In Indonesia, reliability is not just about machines. It's also about people showing up, knowing the challenges, and being truly committed to solving problems on the ground.

What has been the impact of the new remanufacturing centre in Balikpapan since it opened in February 2025?

Since opening in February, the new remanufacturing centre in Balikpapan has made a big difference in the way we work, both in terms of quality and the overall experience for our team.

We have had a remanufacturing facility in Balikpapan for many years, but this new one brings everything to the next level. With better equipment, updated processes and a more efficient layout, we are now able to deliver high-quality components with greater consistency. It's a major upgrade that helps us meet growing customer expectations while improving performance and reliability across the board.

This new chapter in Balikpapan reflects our ongoing commitment to do things better. Not just in the quality of our work, but in the way we support the people who make this work possible.

How have you seen the Indonesian mining landscape change since you first started at Liebherr Indonesia – what are the main drivers for industry and how is Liebherr Indonesia responding to these?

Over the years, Indonesia's mining landscape has evolved significantly. Where the industry was once dominated by a few large players, today the market is more dynamic, with a growing number of local companies entering the field. At the same time, regulatory changes have played a major role. The government has continued to introduce policies aimed at maximising national benefit, whether through domestic market obligations, increased royalties or efforts to localise ownership and operations.

In response to these changes, our approach has remained consistent: we stay close to our customers, listen to their evolving needs and focus on delivering high-performance machines that offer maximum productivity and minimal operating costs. Our goal is to support their success in this ever-changing industry.

'We stay close to our customers, listen to their evolving needs and focus on delivering high-performance machines that offer maximum productivity and minimal operating costs.'

Christian Bombenger
Managing director of sales and operations,
PT. Liebherr Indonesia Perkasa

Is there a particular growth market that you identify for Liebherr Indonesia in the near future? Maybe a particular commodity, or class of machine? How is Liebherr Indonesia well positioned within this market?

Coal continues to be the main volume driver in Indonesia's mining industry, with the highest production targets year after year. In this segment, our excavators and dozers have built a strong reputation, especially within the larger mining operations. Known for their durability and performance, our machines consistently deliver best-in-class productivity and fuel efficiency.

At the same time, there's growing global and national interest in key minerals like gold, copper and nickel. Indonesia's mineral mining sector is becoming increasingly prominent, but the operational needs are often quite different to those of coal mining. In many cases, ultra-class machines are not the optimal choice due to factors like ground conditions, mining methods and scale of production. As a result, many operations prefer hydraulic excavators in the 80 t to 200 t class range.

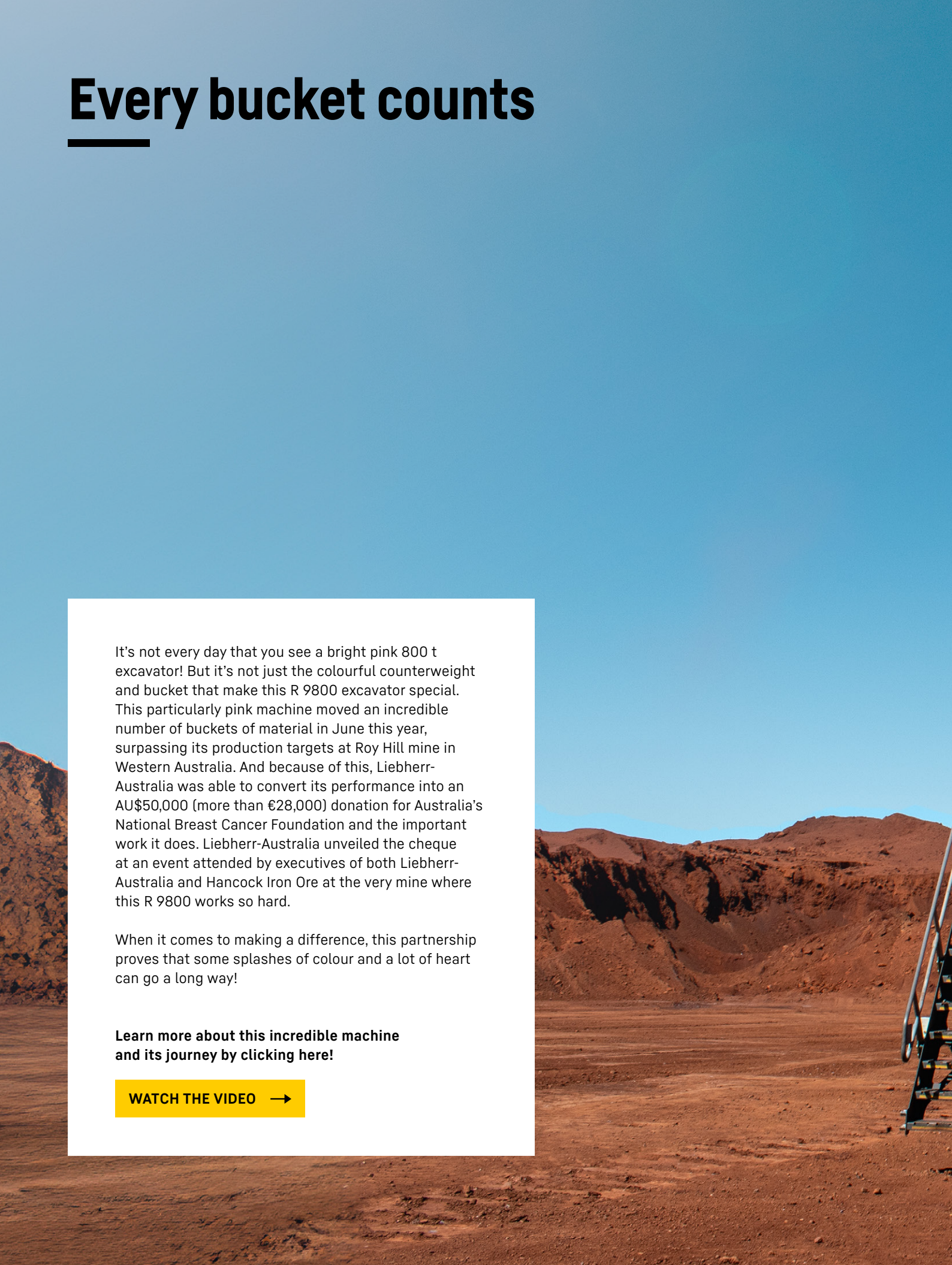
That being said, we are proud to have a presence in one of the country's largest copper and gold operations. We also maintain close communication with other key sites, ensuring we are aligned with their operational needs and are ready to support where our equipment is the right fit.

Fast facts about Liebherr Indonesia
- Founded in 1997
- More than 500 employees
- Head office is located in Jakarta, Java
- Responsible for the sales, distribution and service of Liebherr's mining machines

Fun facts about Indonesia

- Indonesia is the fourth most populous country in the world, with a population of approximately 285.7 million people as of mid-2025.
- Indonesia is the largest archipelago in the world and is made up of more than 17,000 islands.
- Indonesia is home to the Komodo dragon, the largest lizard in the world. It can grow up to 3 m long and weigh as much as 135 kg.
- Indonesia is located on the Ring of Fire – a 40,000-kilometre-long belt of volcanic and seismic activity – and has the largest number of volcanoes of any country in the world.
- In 2005 an Indonesian company broke the Guinness World Record for creating the largest ever packet of instant noodles! The packet measured 340 cm x 235 cm x 47 cm and weighed 664.94 t.
- Home to the world's largest Buddhist temple, Borobudur Temple, on the island of Java.
- More than 700 languages and dialects are spoken in Indonesia.

Every bucket counts



It's not every day that you see a bright pink 800 t excavator! But it's not just the colourful counterweight and bucket that make this R 9800 excavator special. This particularly pink machine moved an incredible number of buckets of material in June this year, surpassing its production targets at Roy Hill mine in Western Australia. And because of this, Liebherr-Australia was able to convert its performance into an AU$50,000 (more than €28,000) donation for Australia's National Breast Cancer Foundation and the important work it does. Liebherr-Australia unveiled the cheque at an event attended by executives of both Liebherr-Australia and Hancock Iron Ore at the very mine where this R 9800 works so hard.

When it comes to making a difference, this partnership proves that some splashes of colour and a lot of heart can go a long way!

Learn more about this incredible machine and its journey by clicking here!

WATCH THE VIDEO →


EX801
EX801
9800
HANCOCK
IRON ORE
HANCOCK
IRON ORE
LIEBHERR
NO UNAUTHORISED
PARKING WITHIN
50 METRES
DANGER
KEEP OUT OF SWING AREA
DANGER
NO UNAUTHORISED
PARKING WITHIN
50 METRES

Augmented reality and Liebherr Mining: a recipe for success

One of the keys to providing our customers with the best possible products and services is to constantly stay alert to ways we can integrate the latest technologies into our work. A prime example of this is how our Quality team has incorporated augmented reality into its quality inspection processes.

Augmented reality, or AR, is a technology that blends digital information with our perception of the real world. Using smartphones, tablets or smart glasses, AR allows users to experience sounds and images beyond what their eyes and ears can perceive alone. AR has many applications in entertainment, commerce and industry – including the mining sector. For Liebherr Mining, and more specifically for our Quality team in Colmar (France), AR enhances the accuracy and efficiency of quality inspections.

Quality control with AR technology

AR has been integrated into the Quality team's incoming goods inspection since mid-2024. The team now uses a tablet equipped with AR technology when inspecting components such as tanks or hydraulic pipes. The tablet scans the physical components using its built-in camera and then compares the scan in real time to 3D models of the parts, enabling the team to easily detect any deviations.

'Integrating this tool into our processes was not about replicating our manual inspections, but rather about rethinking our approach by leveraging the strengths of this technology,' explains Arnaud Krommenacker, group manager, supplier quality, Liebherr-Mining Equipment Colmar SAS.

The speed with which this tool not only detects potential problem areas but also documents them for precise follow-up has allowed the Quality team to carry out more inspections than before.

'The way we conduct our inspections is dictated by the risk analyses we carry out using FMEA [failure mode and effects analysis]. With this AR technology, our technicians can fully focus on inspections by reducing the administrative burden of reporting. Conducting more inspections strengthens our product quality monitoring and better protects our customers from potential disruptions caused by non-conformities,' says Thierry Perrin, general manager, quality, Liebherr-Mining Equipment Colmar SAS.

Preparation before integration
Before integrating a rapidly evolving technology like AR into existing practices, it was essential to understand its effectiveness and limitations across various applications. That is why the Quality team dedicated 12 months to thoroughly testing the tool before deciding to integrate it into daily operations. In 2023, our production site in Colmar adopted a solution offered by Visometry – a leading provider of industrial AR solutions in Germany – that the team wanted to evaluate under real industrial conditions.

'During those 12 months, one of our colleagues devoted himself exclusively to pushing this tool to its limits,' explains Krommenacker.

Based on the positive results observed, this AR tool was deployed for daily use.

What is the difference between AR and VR?
Although augmented reality (AR) and virtual reality (VR) may seem similar, they have key differences. AR users experience the real world with additional sensory information overlaid via devices such as smartphones, smart glasses or head-up displays. In contrast, VR users are fully immersed in a digital environment through a headset that provides audiovisual information from that environment.

The future of AR at Liebherr Mining
With the successful integration of this AR technology at our Colmar production site, the Quality team is now considering a broader rollout. One of the team's experts travelled to Australia in mid-2025 to begin trials at Liebherr-Australia's fabrication workshop in Adelaide, South Australia. The Quality team wanted to investigate potential improvements in the inspections performed at the Adelaide facility and in the creation of the documentation related to the quality controls in place there.

'Our journey with AR demonstrates how emerging technologies can create real value in an industrial context – not by replicating existing processes, but by completely rethinking quality inspection strategies. It is a concrete example of innovation with measurable impact,' says Perrin.

'Our journey with AR demonstrates how emerging technologies can create real value in an industrial context.'

Thierry Perrin
General manager, quality, Liebherr-Mining Equipment Colmar SAS

Working together – it's only logical

Getting equipment and spare parts to our customers as quickly as possible is one of our highest priorities. But we can't do it alone! By collaborating with different stakeholders both inside and outside of Liebherr Mining, we can find ways to make our logistics processes as efficient and sustainable as they can be.

Liebherr Mining's External Logistics Services works tirelessly behind the scenes to ensure our customers get their Liebherr equipment and spare parts when and where they need them. This involves more than just shipping items from our factories around the world to customers' mine sites. External Logistics Services is also responsible for handling the acquisition of the resources needed for our equipment and spare parts, which includes finding the logistics partners best suited to our business practices and those of our customers. From there, the external logistics teams within the factory sites handle the storage of those resources, so they're always on hand when they're needed. But the work doesn't stop there. The dedication, rigour and passion for efficiency of our external logistics team means that they regularly find ways of improving logistics processes to make them more streamlined. Many of these optimisations are the result of close collaboration with our logistics partners, both in and out of the Liebherr Group.

Building a solid foundation

Before Liebherr products leave their respective factory sites – mining excavators from Liebherr-Mining Equipment Colmar SAS in France and mining trucks from Liebherr Mining Equipment Newport News Co. in the USA – External Logistics Services needs to have a clear overview of which items are leaving when and by which methods. And with Liebherr Mining's growth in the past few years, it was becoming increasingly clear that the external logistics team needed a better way manage the increase in outbound deliveries. So we began looking into which tools would best support Liebherr Mining's external logistics activities.

'The initiative to develop an IT tool that supports international logistics began several years ago,' says Alain May, divisional general manager, external logistics services, Liebherr Mining Equipment Newport News Co. 'Mining products involve highly specific logistics activities, such as the configuration of machines transported through the SKD [semi knocked down] process and the drop shipment of components directly from suppliers to customers. These complexities demand tailored digital solutions to ensure efficiency and transparency across the supply chain.'

With all of this in mind, our external logistics team decided to implement TMS LP2 – a global transport management system designed to streamline logistics operations, enhance data transparency and support scalable growth.

'With TMS LP2, we'll be able to match and allocate transport invoices automatically as well as create BI [business intelligence] reports about lead times along with our rates

of cost efficiency, on-time delivery and greenhouse gas emissions,' says Marc Lagarde, external logistics manager, Liebherr-Mining Equipment Colmar SAS.

'Our team at the Colmar factory site is part of the pilot testing phase for this system and will be key in both validating and enhancing the system. We're excited to see how the new capabilities of TMS LP2 help to optimise our external logistics processes,' adds Amelie Arena, project manager, TMS LP2 implementation, Liebherr-Mining Equipment Colmar SAS.

And there are more developments to come: Liebherr Mining Equipment Newport News Co. is scheduled to implement TMS LP2 in Q2 2026, making the factory site the first non-European Liebherr company to benefit from the new system. On top of that, the Liebherr Group is currently developing a separate IT solution for inbound logistics, to ensure complete end-to-end logistics coverage in the future.

A strategic shift to sustainable barging

Improving efficiency doesn't always mean introducing new technologies. Sometimes, it's just finding new ways of utilising existing strategies. One such example is the use of barges for transporting components and equipment to and from Liebherr-Mining Equipment Colmar SAS – a method of transportation that the production facility has used for years. A 2019 study conducted by the external logistics team at Colmar showed that significantly increasing the volume of goods transported by barge would reduce road transport volumes – and therefore the associated greenhouse gas emissions – while enhancing the overall efficiency of the shipping process.

'Our plan was to ship all components via inland waterways, with everything coming together at the Port of Neuf-Brisach, located approximately 30 km from the Colmar factory site on the Rhine River,' explains Lagarde. 'This solution would allow us to transport oversized components up to 8.5 m long, 6.6 m wide, 4.5 m high and weighing up to 110 t, without the delays and complications associated with road permits, urban restrictions or bridge crossings.'

And so, the Colmar team put together a network of external logistics partners to make this plan a reality. These partners were chosen through a request for proposal process that began in 2019 and was renewed again in 2022. Two experienced carriers in the region – Straumann and Wack – were chosen to handle the road shuttle services between the factory site, local SKD component suppliers and the Port of Neuf-Brisach, which handles barge traffic between France, Germany and Switzerland. Haeger & Schmidt Logistics operates the barge along the Rhine and International Car Operator handles the cargo once it reaches the Port of Antwerp in Belgium, the ideal departure point for freight services that operate on fixed schedules like we do.

By working alongside these strategic partners, this endeavour became a success and is still used at the Colmar facility today.

'Increasing the amount of barging used in logistics at Colmar has allowed us to improve efficiency and safety during transport by decreasing congestion at the factory site and removing the problem of trucks getting stuck in traffic – all while reducing greenhouse gas emissions by approximately 600 t per year,' enthuses Lagarde. 'Considering the success of this project, we hope that other Liebherr facilities will also consider barging as a sustainable logistics solution.'

Electrifying plans for road transport
New technologies also offer the chance to boost operations. In 2025, Liebherr-Mining Equipment Colmar SAS began collaborating with Fried-Sped – Liebherr Mining's main transportation partner – to explore the use of electric trucks in logistics operations. Incorporating these trucks into processes would support us in our own decarbonisation targets, as well as those of our customers, by significantly reducing greenhouse gas emissions during transport.

However, at present, the batteries in these electric trucks only have a range of 450–500 km, which isn't enough for a round trip between Fried-Sped's hub in Ummendorf (Germany) and the Colmar facility. To overcome this, Fried-Sped is testing an e-trailer developed and manufactured by Trailer Dynamics where additional batteries, combined with a propulsion axle installed on the trailer, would extend the truck's range.

'We're excited about the e-trailer innovation and the achieved range extension, but it does come with trade-offs,' explains May. 'The added battery weight reduces cargo capacity. But that being said, European authorities are actively working on legislation that may soon allow heavier trucks and trailers on the road and may adjust road usage fees to support infrastructure maintenance.'

Close collaboration in the USA
Optimising our logistics processes isn't just happening in Europe. The external logistics team at Liebherr Mining Equipment Newport News Co. in the USA is also working hard with strategic partners on the ground. Together, they are finding the most efficient ways of getting products from the Newport News facility in the state of Virginia to customers all over the world.

'As our production capabilities at Newport News continue to grow, we've been working closely with local authorities to ensure we have the operational and regulatory support to succeed in our delivery timeline,' says George Amos, heavy and specialised transport supervisor, Liebherr Mining Equipment Newport News Co.

The Port of Virginia is continuously optimising its terminals to accommodate the growing output from our Newport News facility. This mutually beneficial alignment between private enterprise and public infrastructure points to a shared vision of robust economic growth powered by global trade.

On top of these changes, the Virginia Department of Motor Vehicles has been working hand-in-hand with Liebherr Mining Equipment Newport News Co. to improve the efficiency of our road transport. Discussions between the two entities has resulted in our Newport News facility being granted an additional super load permit per day in theTidewater region, which is home to nearby seaports as well as our factory site. This development not only increases throughput but enhances agility in deploying massive equipment to shipping centres, which translates to faster delivery and stronger market competitiveness.

'Continuous improvement is a mantra we live by at Liebherr Mining. Working with different teams all over the world, whether they're part of the Liebherr Group or strategic third-party collaborators, allows us to tap into a wide range of expertise that lets us find the best possible solutions for our customers,' says May.

Liebherr Mining around the world

There are thousands of dedicated Liebherr Mining employees working hard for our customers all around the world, from Australia to Zambia. Each of them with their own unique stories. Allow us to introduce you to just three of these wonderful people: Ariane, Ian and Jade.

Ariane Figueiro

Ariane is the IT coordinator at Liebherr Brasil LTDA, responsible for the implementation of the ERP LN Cloud – a cloud-based enterprise resource planning system – alongside a dedicated team for project 'Tucano'.

But getting to the position she's in now took Ariane a lifetime.

Determined from the very beginning
When Ariane was just two years old, she received a certificate that would enable her to 'retire' as a child and receive the disability pension each month for the rest of her life due to issues with her feet and her hips. Instead of retiring, she left her hometown of campos novos, in Cunha, when she turned 18 and moved more than 80 km away to Lorena in São Paulo.

In Lorena, she started a technical course in computer science at ETEC (State Technical School) in 2011. She also interned at the Teresa D'Ávila University Center (UNIFATEA), in partnership with the National Council for Scientific and Technological Development (CNPq), receiving a research grant in 2012.

In 2013, Ariane applied for an administrative assistant position within Liebherr Brasil's IT department, a position that had been designated for a person with disability. Once again, she forged her own path, defying the expectations of those around her.

An impressive overachiever
Ariane worked as an administrative assistant in the IT department for 18 months and then, in 2015, she took on the role of systems assistant and she started her undergraduate degree in computer science at Unisal in Lorena. For the next few years, she continued to prove herself and take on new activities, until she progressed to the position of analyst in 2019.

While working as an analyst, you wouldn't be too far off in calling Ariane an overachiever: she graduated from her computer science degree at Unisal in 2019, took two MBAs in 2023 and 2025, implemented new projects at Liebherr, received mentoring from her leaders, and developed her skills. She also visited two of Liebherr's European factory sites – the wheel loader factory site, Liebherr-Werk Bischofshofen GmbH, in Austria and Liebherr-Logistics GmbH, Liebherr's internal logistics provider, in Germany – to deepen her knowledge of Liebherr's warehouse processes.

In all areas that Ariane has worked in during her time at Liebherr, the same feedback has been given: she is a fast and dedicated employee.

'I do everything with great dedication. The learning process is challenging, but I always approach it positively, and value each opportunity to deepen my knowledge.'

Ian Dobson

Ian has worked as a site fitter with Liebherr-Australia Pty. Ltd. since 2005. After over 20 years, he is now getting ready to head into retirement. But he will not soon be forgotten. Ian leaves behind a legacy of knowledge, high standards and a reputation for treating every machine like his own.

A mechanical background

Ian's journey to Liebherr wasn't a straight line; he worked in a range of industries, from farming and forestry to IT and automotive. He also served as a proud member of the RAAF (Royal Australian Air Force) for five years as a fitter for specialised equipment.

'I've done all sorts of jobs. But when I saw what Liebherr did – engines, hydraulics, electronics – I thought, "this is everything I've done all rolled into one. I can do this".'

Over the course of his career, Ian has worked with a wide range of Liebherr machines: older models like the R 994, R 996 and the last operational R 995 in the world all the way through to the R 9600, one of Liebherr's latest generation of excavators.

But the excavator he ranks highest? The 300 t R 9350.

'The R 9350 is a great little machine. Easy to work on and smooth to operate. If I could find a place with four or five of them, I'd go tomorrow.'

The importance of people

Ian's favourite thing about working with Liebherr has been the people. The excavator crew, site team and even former colleagues who still call him for advice have all shaped his experience at Liebherr.

'I'll miss the camaraderie the most. That's what's kept me around all these years,' he says.

Of course, working on excavators comes with its pressures. But when high pressure situations arose on site, Ian credits the camaraderie and strength of the people around him with his being able to stick it out and get the job done. That incredible teamwork extended to mentoring young fitters, something Ian found especially rewarding in the later years of his career.

'Knowledge not shared is wasted. You might lose a day chasing a fault, but you walk away knowing more than you did before. And that knowledge? That's gold.'

As Ian prepares to retire, he's looking forward to travelling with his wife, who is also retiring, and spending time working on his six – soon to be seven – motorbikes.

'It's been a wild ride. But I've worked with some great people and some great machines. And I wouldn't change a thing,' he says.

Jade Wallace

As a service administrator, Jade handles the behind-the-scenes administrative work that keeps the mining service department at Liebherr-Canada LTD's Acheson branch in the western province of Alberta running smoothly. Since joining the Liebherr-Canada team in 2024, she has become an integral part of making sure this crucial work gets done each and every day.

'A typical day for me involves processing technician timesheets and work orders while handling various administrative tasks – like managing documentation – to make sure the service department has exactly what it needs whenever a customer requires support,' Jade explains.

Before Liebherr

Prior to taking on her role as service administrator with Liebherr-Canada, Jade had worked in the trucking industry for ten years. She started in the truck wash bay of a small heavy-duty shop in 2014, and it was there that Jade developed a keen interest in discovering how heavy-duty trucks work.

'My curiosity and passion for the machines I worked with every day led me to pulling wrenches part time and eventually into a desk role as a service writer at that same shop,' Jade explains.

While she was in this role, Jade was able to continue building her technical knowledge, which served her well when she accepted a role as a service advisor in 2019. Her five years in that role gave her a strong foundation in logistics, operations and customer service – all of which came in handy when she applied for her current position with Liebherr-Canada.

Joining the Liebherr team

Liebherr felt like the natural choice for Jade when it came time for her to take her career to the next level.

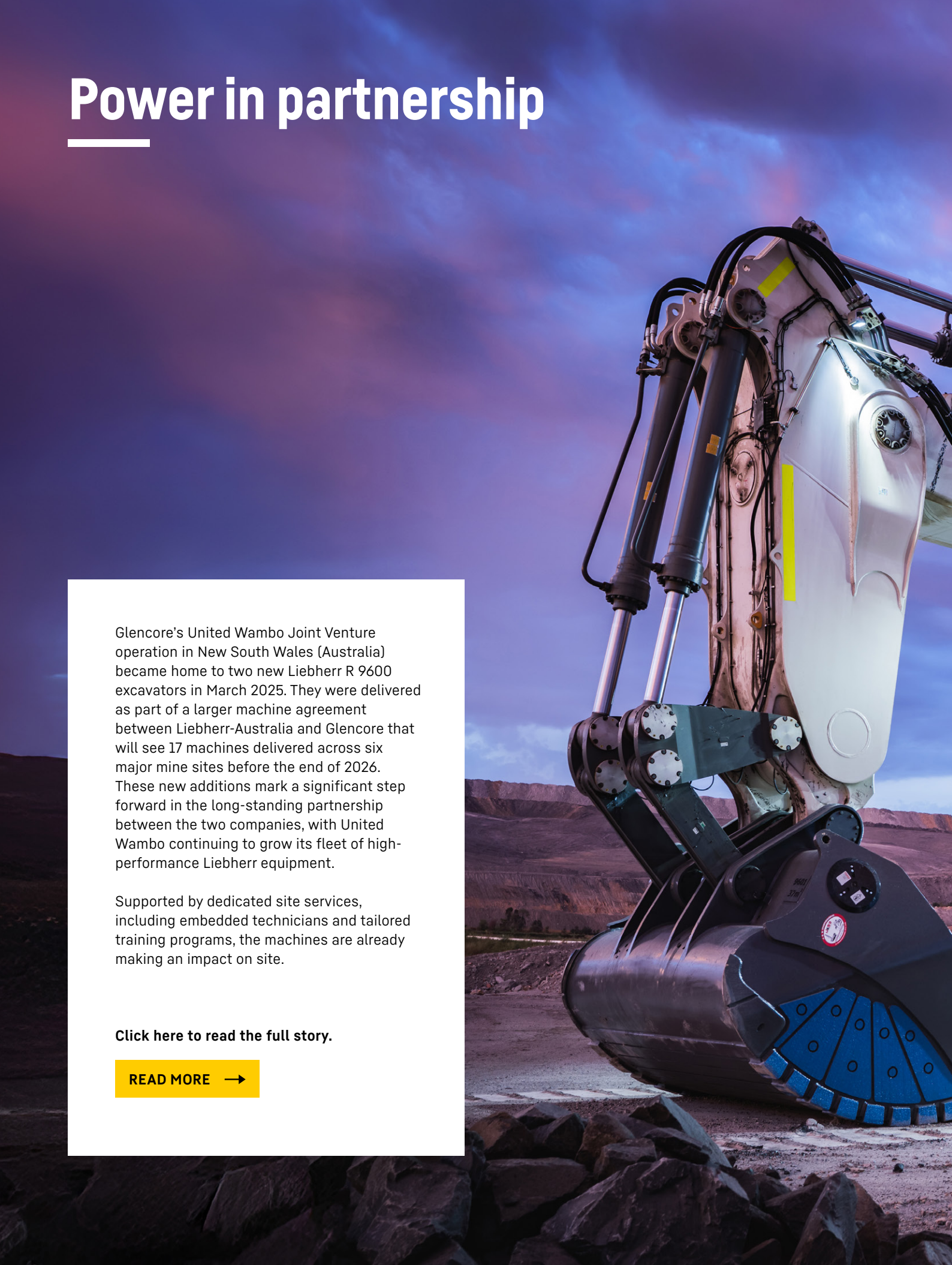
'I wanted to grow both personally and professionally and I knew that stepping into a global company like Liebherr would challenge me in new ways,' she says.

There's always something to learn when part of a global company like Liebherr. Having the opportunity to build on her own experiences and contextualise them in new and exciting ways is still Jade's favourite thing about working with Liebherr.

Plus, Liebherr's commitment to quality, innovation and long-term thinking – values that resonate deeply with Jade – has always impressed her.

'I was originally drawn to Liebherr because I wanted to work with a company with principles that I genuinely respected. Every day, I see the ways that Liebherr incorporates its core values into its daily operations all throughout the business and I am proud to be a part of it.'

Power in partnership



Glencore's United Wambo Joint Venture operation in New South Wales (Australia) became home to two new Liebherr R 9600 excavators in March 2025. They were delivered as part of a larger machine agreement between Liebherr-Australia and Glencore that will see 17 machines delivered across six major mine sites before the end of 2026. These new additions mark a significant step forward in the long-standing partnership between the two companies, with United Wambo continuing to grow its fleet of high-performance Liebherr equipment.

Supported by dedicated site services, including embedded technicians and tailored training programs, the machines are already making an impact on site.

Click here to read the full story.

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103
103
UNITED WAMBO
JOINT VENTURE
9600

On the ground

Our mining solutions in action all around the world

A new chapter for old friends

The best partnerships are those that evolve to meet the needs of everyone involved – which is exactly what happened between J. Mendes Group and Liebherr Brasil. After more than 20 years and a fleet of more than 50 Liebherr machines, J. Mendes Group bought its biggest Liebherr machine yet: the R 9150 mining excavator.

The latest chapter between Liebherr Brasil LTDA and J. Mendes Group – one of the most recognised businesses in Brazil in a number of industries, including mining, agribusiness and aviation – began in September 2024. At that time, J. Mendes Group was in the midst of an expansion and was looking to increase the scale of its operations by incorporating larger machines into its fleet. J. Mendes Group shared its plans with Liebherr Brasil and after some discussions it was decided that the 150 t class R 9150 mining excavator, with its reputation for impressive productivity and fuel efficiency – as well as its standard bucket capacity of up to 9.6 m^3 – would be the perfect solution. Well, three of them to be exact.

'The entire commercial and technical team at Liebherr assisted us in our decision to acquire the R 9150. After extensive studies and discussions, we were able to identify an efficient solution that positively impacted the productivity of our operations,' says Vinicius Nogueira, supply director, J. Mendes Group.

The start of something new
Liebherr Brasil delivered two of the three R 9150 excavators in mid-2025. The third machine is currently scheduled for delivery in early 2026. All three of the R 9150s will become part of J. Mendes Group's fleet at the company's iron ore mine, Ferro+ Mineração, located in the Ouro Preto and Congonhas regions of Minas Gerais. Because these are the first excavators of their kind to enter Ferro+ Mineração, Liebherr Brasil has needed to ensure that these machines, and J. Mendes Group's onsite personnel, have the support they need to keep these excavators running smoothly every shift.

'To ensure the success of this new stage, we have put together a 24/7 support structure with qualified personnel and parts availability to guarantee the highest uptime for this new fleet,' explains Jair Machado, divisional commercial manager for mining equipment, Liebherr Brasil.

'Our technical team will provide both preventative and corrective maintenance while our Guaratinguetá branch will supply J. Mendes Group with the spare parts needed to ensure the physical availability and productivity of the machines.'

A partnership for the ages
Over the course of the past two decades, J. Mendes Group's mining fleet has included more than 50 Liebherr machines: 26 wheel loaders with tipping loads of 20 t, two 40 t crawler dozers, 23 excavators with operating weights ranging from 37 to 65 t, and, of course, the three brand-new 150 t class excavators. But none of this would have been possible without the successful delivery of J. Mendes Group's first Liebherr machine, an R 944 B excavator, more than 20 years ago.

‘This first deal was the outcome of a successful demo involving several people from both Liebherr Brasil and J. Mendes Group,’ says Machado.

Eventually, the formidable performance of that first R 944 B led J. Mendes Group to add an L 580 wheel loader to its fleet in February 2005 – which was the first in all of Brazil at the time – and impressed the customer with its durability and efficiency. The rest, as they say, is history.

‘We are very proud to have cultivated such a solid and successful partnership for over 20 years. It’s more than a commercial relationship – we have built a bond based on integrity, simplicity and mutual respect,’ says Daniel Poll, commercial director, Liebherr Brasil. ‘May there be many more decades of success and collaboration.’

Nogueira seconded these sentiments, praising Liebherr Brasil’s dedication to quality support and creative solutions for J. Mendes Group’s operations.

‘Our partnership with Liebherr Brasil over the past two decades has been built on trust, expertise and a shared commitment to excellence. Their reliable support and innovative solutions have played a crucial role in the growth and success of our operations. We look forward to continuing this strong collaboration for many years to come,’ concludes Nogueira.

‘We are very proud to have cultivated such a solid and successful partnership for over 20 years. It’s more than a commercial relationship – we have built a bond based on integrity, simplicity and mutual respect.’

Daniel Poll
Commercial director, Liebherr Brasil LTDA

The T 264 excels in South Africa

In a major milestone, Liebherr-Africa – Liebherr's sales and service company based in South Africa – delivered the first ever T 264 trucks in Africa to a longstanding customer in South Africa. Deployed at a major zinc mine in 2024, the six trucks are setting the benchmark for operational efficiency and reliability.

Following a fiercely competitive bidding process, Liebherr-Africa (Pty) Ltd reigned supreme to win the contract to supply six T 264 trucks to a leading contract mining company operating in South Africa. The six trucks – the first of their kind in Africa – are hard at work at a major zinc mine.

Pierre Berrange, head of sales, mining, Liebherr-Africa says that the sale of the very first T 264 trucks in Africa marks a major milestone for the company and provides a foothold in the fiercely contested 240 t off-highway truck market.

‘This achievement not only underscores Liebherr-Africa’s capabilities but also plays a pivotal role in generating interest from major mining houses and large-scale contractors. Delivering these first six units to our esteemed customer demonstrates our commitment to excellence in a highly price-sensitive and competitive market – where factors such as pricing, total cost of ownership, reliability and aftermarket support are critical to long-term success,’ he explains.

Competitive edge
When working with the customer to find the best solution for their needs, Liebherr-Africa focused on developing a strong value proposition and crafting a compelling proposal that highlighted the unique strengths of both the T 264 and Liebherr-Africa itself.

‘What made Liebherr the best choice for our customer was our unique blend of perseverance, strategic foresight and long-standing trust – underpinned by the unified support of the global Liebherr network,’ says Berrange. ‘Liebherr-Africa’s reliability, industry-leading aftersales support and unwavering commitment – built over years of consistent performance – were a decisive advantage.’

Finding this solution for the customer required a combination of the local team’s hard work and deep understanding of the customer’s operational needs as well as the coordinated efforts of the broader Liebherr Group. Global support – from factory teams to key decision-makers – ensured that the solution offered was not just competitive but was also comprehensive and future-ready, which seamlessly aligned with the customer’s vision for growth and operational efficiency.

Excelling in tough conditions
According to Jacobus Pietersen, service manager, Liebherr-Africa, the trucks are working in one of the most abrasive and challenging sites in the southern hemisphere, hauling various materials, including zinc ore and overburden. In the face of these taxing operating conditions, the T 264 trucks have thus far performed beyond expectations.

‘The mine mainly extracts zinc ore. The overburden materials are extremely abrasive and include pyrites, iron oxide and quartz as well as iron and manganese silicates,’ explains Pietersen. ‘Apart from the abrasive nature of the material, conditions here are unforgiving. For context, temperatures in this area can go as high as 45 °C during the summer and drop to a frigid 5 °C during the winter months. In addition, the district falls in a low rainfall area. The dry conditions, together with the windy environment, result in dusty conditions.’

To date, the six trucks have performed exceptionally well, setting a new benchmark in operational efficiency and reliability, with availability rates up to 95 %.

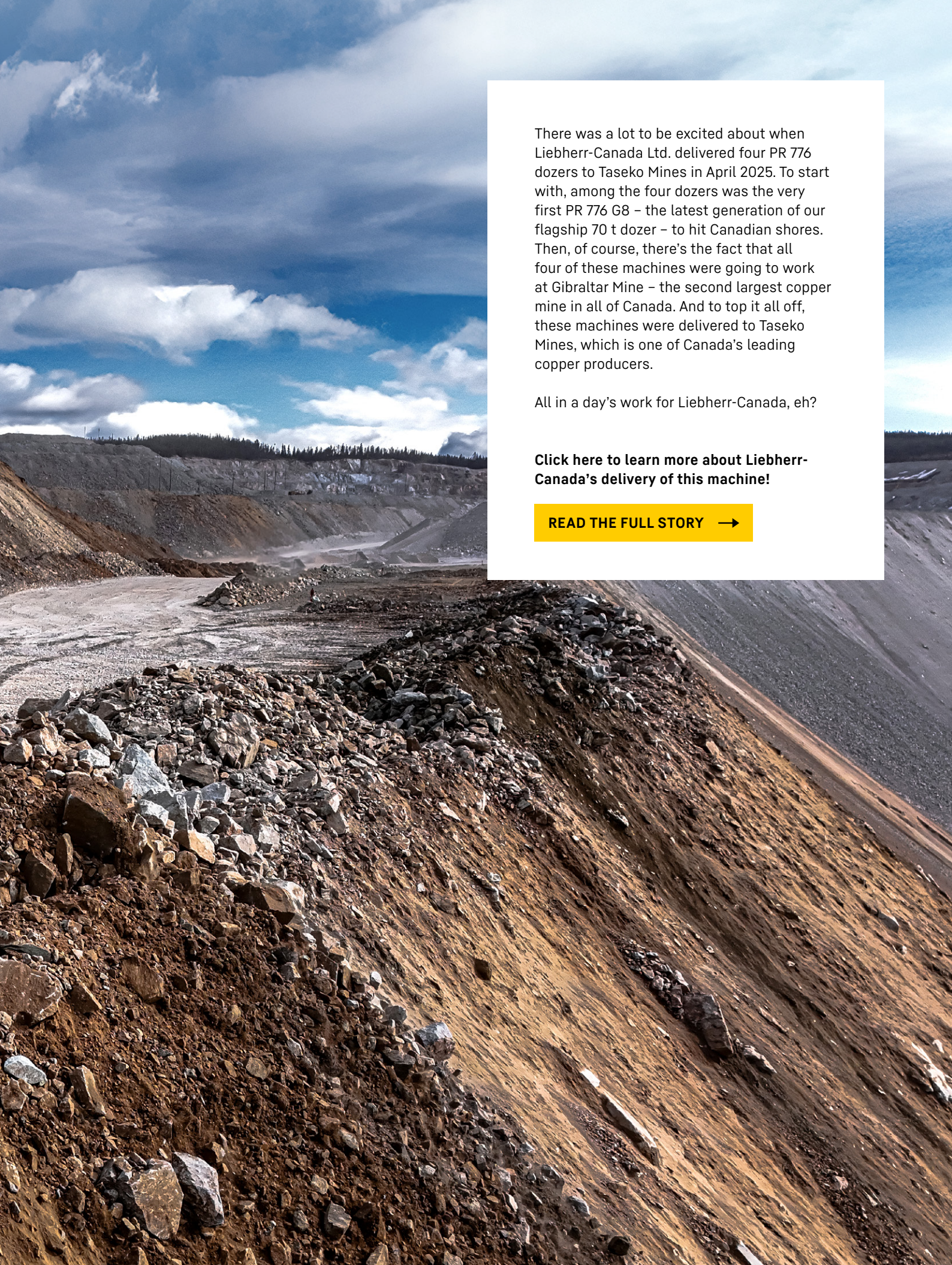
Dedicated support
To achieve maximum equipment availability and operational reliability, Liebherr-Africa provides a tailor-made, comprehensive onsite support package that includes onsite parts and dedicated support staff.

‘What made Liebherr the best choice for our customer was our unique blend of perseverance, strategic foresight and long-standing trust – underpinned by the unified support of the global Liebherr network.’

Pierre Berrange
Head of sales, mining, Liebherr-Africa (Pty) Ltd

‘The trucks perform as well as they do because of the dedicated and competent team assigned to maintaining them. Our onsite team comprises four technicians and two apprentices. They form an excellent team, geared to make a massive success of this project. Without the team’s hard work and stellar performance, reaching these figures would not have been possible. The team constitutes thecornerstone of the current success that we have experienced with the six trucks,’ enthuses Pietersen.

A superlative delivery



There was a lot to be excited about when Liebherr-Canada Ltd. delivered four PR 776 dozers to Taseko Mines in April 2025. To start with, among the four dozers was the very first PR 776 G8 – the latest generation of our flagship 70 t dozer – to hit Canadian shores. Then, of course, there's the fact that all four of these machines were going to work at Gibraltar Mine – the second largest copper mine in all of Canada. And to top it all off, these machines were delivered to Taseko Mines, which is one of Canada's leading copper producers.

All in a day's work for Liebherr-Canada, eh?

Click here to learn more about Liebherr-Canada's delivery of this machine!

READ THE FULL STORY →

Electrifying phosphate mining in Yunnan province

In late 2024 the first R 9200 E arrived in China. The 200 t electric excavator, in face shovel configuration, was delivered to Kunyang Phosphate Mine – the biggest phosphate mine in Yunnan province. So how has the R 9200 E been performing in the months since it was delivered? We can't wait to tell you!

The R 9200 E electric excavator is now the proud property of Yunnan Heshun Industry and Trade Co., Ltd – the subcontractor of Kunyang Phosphate Mine. Heshun's reasons for choosing a Liebherr machine were simple: the business wanted a machine with cutting-edge technology as well as outstanding reliability and quality that would be supported by a professional technical team. And as for why Heshun chose electric drive? That was easy. Using electric-drive machines in its fleet helps to reduce the greenhouse gases emitted during operation, helping the business meet its decarbonisation targets. And the cost savings were an added bonus!

'We made the right decision twice in this project,' says Mr Guo, chairman, Heshun. 'The first was that we chose a Liebherr machine, which guarantees reliability and availability. The second was that we chose the electric version of Liebherr's R 9200, which needs less maintenance and has fewer power costs than the diesel version.'

Let's talk numbers

Since arriving to site, the face shovel R 9200 E has worked an average of 21–22 hr every day. The only time this machine stops for longer than an hour is during the blasting period, which generally lasts for a full day. Given how hard this machine works, and for how long, is it any wonder that reliability is top of mind for Heshun? Each month the new excavator moves an estimated four million square metres of material – all while providing monthly savings of around ¥400,000 (€49,000).

'The R 9200 E is a star in this area and has exceeded my expectation in almost all ways: availability, service, costing savings and capacity,' enthuses Mr Guo.

'We made the right decision twice in this project. The first was that we chose a Liebherr machine, which guarantees reliability and availability. The second was that we chose the electric version of Liebherr's R 9200, which needs less maintenance and has fewer power costs than the diesel version.'

Mr Guo
Chairman, Yunnan Heshun Industry and Trade Co., Ltd

Comprehensive service solutions

The team at Liebherr (China) Co., Ltd. began supporting and collaborating with Heshun well before the delivery of the R 9200 E. Liebherr China's sales and technical team worked alongside Heshun to make sure that the R 9200 E would not only fit within the company's existing fleet and mining structure but would also boost productivity on site. During these discussions, Liebherr China and Heshun also worked out a customised service solution that would best support this new excavator. Experienced technical personnel from Liebherr China provided in-depth training sessions to ensure that Heshun's operators and technical teams had all the knowledge needed to get the most out of these new excavators. And now that the R 9200 E has gone to work, Liebherr China takes care of the excavator's regular maintenance and assists with spare parts planning – all to ensure a machine availability rate of 95 %.

'The excellent performance of the R 9200 E in recent months is the result of Liebherr's cutting-edge technology and professional service, which guide us to make the right decision at every step, from the machine type we selected to spare parts planning,' says Mr Guo.

Future opportunities

The success of this R 9200 E in Yunnan province opens some exciting possibilities for Liebherr China over the coming years.

'There are some big phosphate projects within China that are coming up in the next two years,' says Armin Natter, general manager, Liebherr China. 'And thanks to the proven success of the R 9200 E in this arena, we have the opportunity to put forward our range of 200 t to 400 t electric excavators as the loading solutions for these operations.'

What it takes to complete a world-first repower

In late 2024, Liebherr-Australia and Yancoal completed the first-ever repower of R 9800 excavators. Since then, the two repowered 800 t machines have been achieving some impressive results, thanks to their new D9812 engines. This project highlights just how much of a difference repowering can make to customers' existing fleet.

Repowers are just one of the many support services offered by Liebherr Mining Service. It is the process of replacing the existing diesel engine modules of Liebherr machines with either an electric drive system or with one of Liebherr's D98 internal combustion engines, which are designed specifically to thrive in the harsh conditions found on mine sites. For Yancoal, upgrading these R 9800s to D9812 engines – the V12 model in the D98 range – was the right decision for the work these machines would be doing at the Mount Thorley Warkworth (MTW) coal mining operation in New South Wales (Australia).

'Our aim is to be the highest producing and lowest cost operation, and in collaboration with our long-standing relationship and trust in Liebherr, this repower offered us the chance to continue to improve our productivity and lower operation costs, whilst reducing environmental emissions,' says Cris Shadbolt, general manager at Yancoal's MTW site.

Because this was the very first repower of R 9800s in the world, the Liebherr-Australia Pty Ltd technicians taking part in the project needed specialised training in order to successfully complete the engine exchange. After receiving foundational training at Liebherr-Australia's training facility in Adelaide, the Australian technicians travelled to Switzerland to build on their knowledge with the technical team at Liebherr Machines Bulle SA – one of the production facilities within the Group that manufactures diesel and gas engines. In Switzerland, the Australian technicians learned to perform advanced machine diagnostics and infield mechanical repairs.

A Swiss education

Since 2020, all of Liebherr's technical training for our range of combustions engines has taken place at the Training Academy at Liebherr Machines Bulle S.A. Since 2022, the Training Academy has dedicated three weeks each year to training Liebherr-Australia technicians. In 2024, one of those weeks was used to train the technicians involved in this repower project, where they gained a comprehensive understanding of the electronics and circuitry in D9812 and D9816 engines as well as advanced strategies for diagnosing any issues that may arise on site.

As Liebherr Machines Bulle personnel imparted their engine wisdom to the Liebherr-Australia team, the Swiss instructors learned a thing or two themselves.

'Working with Liebherr-Australia during this period has opened our eyes to improvements we can make in our training program,' says Christophe Petite, director of the training academy, Liebherr Machines Bulle S.A. 'This project has seen the basic and advanced training courses for our D9812 and our D9816 engines evolve to include additional video and practical training devices. We have also certified two Liebherr-Australia instructors so they can teach this program in country, rather than needing to travel across continents for this knowledge. Two more are set to be certified in early 2026. In fact, a new D9816 simulator has been developed here at Liebherr Machines Bulle and was delivered to Liebherr-Australia's Perth facility in Western Australia in the third quarter of 2025.'

What happens during repowering?

The repowering process for the R 9800s actually began at Liebherr Mining's excavator production facility in Colmar (France). The powerpack modules for the repower were pre-assembled and tested in the factory, with the new D9812 engines installed, before they were shipped to Australia. Further pre-assembly took place once these modules arrived at Liebherr-Australia's Mount Thorley branch in New South Wales, which included the installation of site compliance options in order to save time during the repower itself on site.

'In collaboration with our long-standing relationship and trust in Liebherr, this repower offered us the chance to continue to improve our productivity and lower operation costs, whilst reducing environmental emissions.'

Cris Shadbolt
General manager, Yancoal Mount Thorley Warkworth

At MTW, after the original powerpack assemblies were removed from the excavators, Liebherr-Australia's technical team undertook the necessary mechanical and electrical upgrades on the excavators so the powerpack exchange with the D9812 engines could be finalised.

'Thanks to the hard work and dedication of the Mount Thorley team, the entire repower process – from preparation to commissioning – was completed on time and the excavator was back to work for the customer on schedule,' says Jase O'Connor, customer support manager, New South Wales, Liebherr-Australia.

Supporting the new engines

With the integration of Liebherr engines into these Liebherr excavators, Yancoal now only has one point of contact for any technical or maintenance support they may need for these R 9800s.

'Any time a machine is offline – whether it's scheduled maintenance or unscheduled repairs – is unproductive time. That's why incorporating Liebherr parts and components, such as the D98 range of engines, is so important to us. It streamlines support requirements in these instances and guarantees that the parts being installed meet our stringent quality standards. This way, we can be confident that our customers are getting the very best performance and reliability from their machines,' explains Wayne Maher, national mining manager, engine solutions, Liebherr-Australia.

Benefits of repower

With their new D9812 engines, these two R 9800s have been performing exceptionally well and the MTW team are incredibly happy with what they've seen from the machines so far.

'Since the repowers of our two R 9800s in late 2024, Mount Thorley Warkworth has seen numerous benefits which include increased productivity, improved reliability and a common work platform to maintain. There has been a 125% or 113 hr increase in Mean Time Between Failures across our four engines and a material movement and load factor improvement of 5.1 BCM / l of fuel burn. These are exciting numbers as we look to reduce emissions and increase overall productivity,' shares Shadbolt.

The performance achieved by these machines for Yancoal demonstrates how powerful an option like repower is for customers' existing fleets.

'The results we've seen from the D98 engines at MTW so far show that repowering existing machines can go a long way to optimising productivity on site. We'll be sharing more detailed information about just how powerful this combination of D9812 engines and our ultra-class excavators can be in the near future,' says O'Connor. 'But right now we're hoping to see more and more customers repowering their existing machines with our range of D98 engines so they can see just how much of a difference it can make for their sites.'

'We're hoping to see more and more customers repowering their existing machines with our range of D98 engines so they can see just how much of a difference it can make for their sites.'

Jase O'Connor
Customer support manager, New South Wales, Liebherr-Australia

Liebherr dozers arrive in Colombia

The very first Liebherr dozer has landed in Colombia. In August 2024, Liebherr Colombia delivered a PR 766 to Cementos Argos, where it has been bulldozing expectations ever since.

The relationship between Liebherr Colombia SAS and Cementos Argos – the largest cement producer in Colombia – started well before the delivery of the 50 t class dozer. More than four years before, as a matter of fact.

At the time, Cementos Argos was looking to replace some of the older excavators in its fleet at the Santa Ana limestone mine in northern Colombia. It soon became clear that two R 9100s would be the right machines for the job. Cementos Argos received its first R 9100 in 2021 with a second unit delivered the following year.

It was the speed, productivity and versatility of these 100 t excavators that piqued Cementos Argos' interest in Liebherr dozers in general and the PR 766 dozer in particular. And the exceptional customer support provided by Liebherr Colombia further encouraged an expansion of the partnership between the two companies.

According to Santa Ana personnel, the performance and reliability of Liebherr's machines, as well as the support from Liebherr Colombia, has been unique and differentiates Liebherr from other OEMs that they've worked with in the past.

Experiencing the wide world of Liebherr

While Cementos Argos was excited about the Liebherr equipment in its fleet, and the fantastic support from Liebherr Colombia, the business wasn't overly familiar with the wider world of Liebherr at that time. So, to showcase the Liebherr Group in all its glory, Liebherr Colombia invited members of Cementos Argos' executive and operations teams to attend Bauma 2022 in Munich (Germany) and then to go on and visit some of Liebherr's production facilities in Europe.

'It was really important to us that Cementos Argos had the opportunity to better understand the Liebherr Group, its culture and the potential impact of our two companies working together,' says Alvaro Jimenez, mining operations and commercial manager, Liebherr Colombia. 'Bauma and the subsequent factory visits gave us the perfect chance to demonstrate all of this.'

While at Bauma, the Cementos Argos representatives were able to get up close and personal with the products, services and different innovations of the majority of Liebherr's product segments. What they saw thoroughly impressed them – as did the kindness and work ethic of each Liebherr employee they interacted with during the exhibition.

After experiencing the breadth of Liebherr's product offerings in Munich, Liebherr Colombia took the Cementos Argos representatives on a tour of a number of Liebherr's production facilities in France and Austria that are connected to the company's mining product segment. In all locations, Liebherr Colombia was able to showcase Liebherr's mining portfolio as well as the processes, production plants, machines and Liebherr employees that make Liebherr's machines the powerhouses that they are.

'Even though we'd known Liebherr for years, we were incredibly impressed with what we saw of the company on our trip. Each facility had a fantastic environment that we truly felt during our visits,' said Martin Monsalve, director of mining management and raw materials, Cementos Argos.

'On top of the fantastic performance of the dozer and the customer service from Liebherr Colombia, the amount of fuel we're saving with the PR 766 is currently fuelling a mining drill on site.'

Anyelo Alvarez
La Calera maintenance superintendent, Cementos Argos

Taking a chance
In 2023, a little while after the Cementos Argos and Liebherr Colombia delegates returned from their European experience, the companies got to talking about Cementos Argos' machinery requirements. During these discussions it became apparent that Cementos Argos was looking to modernise its dozer fleet at its La Calera mine in the Valle del Cauca department of south-western Colombia.

However, with no other Liebherr dozers in Colombia at that point, it wasn't possible for Cementos Argos to know for sure whether a Liebherr dozing solution would be the right fit for La Calera. So together with Liebherr Colombia they came to an agreement: Cementos Argos would trial the PR 766 dozer for six months at La Calera. At the conclusion of that period, Cementos Argos would then add the 50 t class dozer to its fleet permanently – so long as the machine achieved the KPIs agreed upon by the two companies.

And achieve them, it did! The PR 766 met – and exceeded – the KPIs set at the beginning of the trial period. Not only did the PR 766 provide exceptional fuel efficiency compared to other 50 t dozers on site, but it also achieved 91.7% availability in the six-month period. And on top of all of this, the new dozer also gave operators a safe, reliable and comfortable ride on shift thanks to its hydrostatic system and automatic gearshift.

Operations and maintenance staff at La Calera were amazed with the performance and results of the PR 766 and continuously praised the support they received from Liebherr Colombia as something very different than anything they had experienced with any other OEM.

'On top of the fantastic performance of the dozer and the customer service from Liebherr Colombia, the amount of fuel we're saving with the PR 766 is currently fuelling a mining drill on site,' says Anyelo Alvarez, La Calera maintenance superintendent, Cementos Argos.

Exceptional all-around support
To ensure that both the Cementos Argos team and the PR 766 were set up for success at La Calera, Liebherr Colombia provided detailed training to the customer's technicians and operators prior to the arrival of the PR 766. But the support didn't stop there. Liebherr Colombia embedded two experienced technicians at La Calera to perform routine maintenance on the PR 766 once it arrived on site. These technicians executed daily checks on the dozer's structure, lubrication and hoses while also ensuring correct operational processes were being followed.

Once the PR 766 became a permanent fixture at the mine, the Liebherr Colombia technicians remained at La Calera for another six months to give them the chance to implement a long-term technical assistance plan to support this machine in the years to come. The plan includes phone support, periodic visits and maintaining spare parts at Liebherr Colombia's warehouse in Barranquilla.

'We are so excited to see the PR 766 continue to exceed our customer's expectations on site,' says Jimenez. 'This now gives us the opportunity to showcase the strength of Liebherr dozers in the Colombian mining sector. We are committed to being a reliable and trustworthy partner for our customers and to provide the best experience when they work with us and now, with the success of this project, we can support even more customers.'

91.7% 24/7

Availability

95%

Fill factor

4.0 km/h

Average reversing **speed**

2.9 km/h

Average pushing **speed**

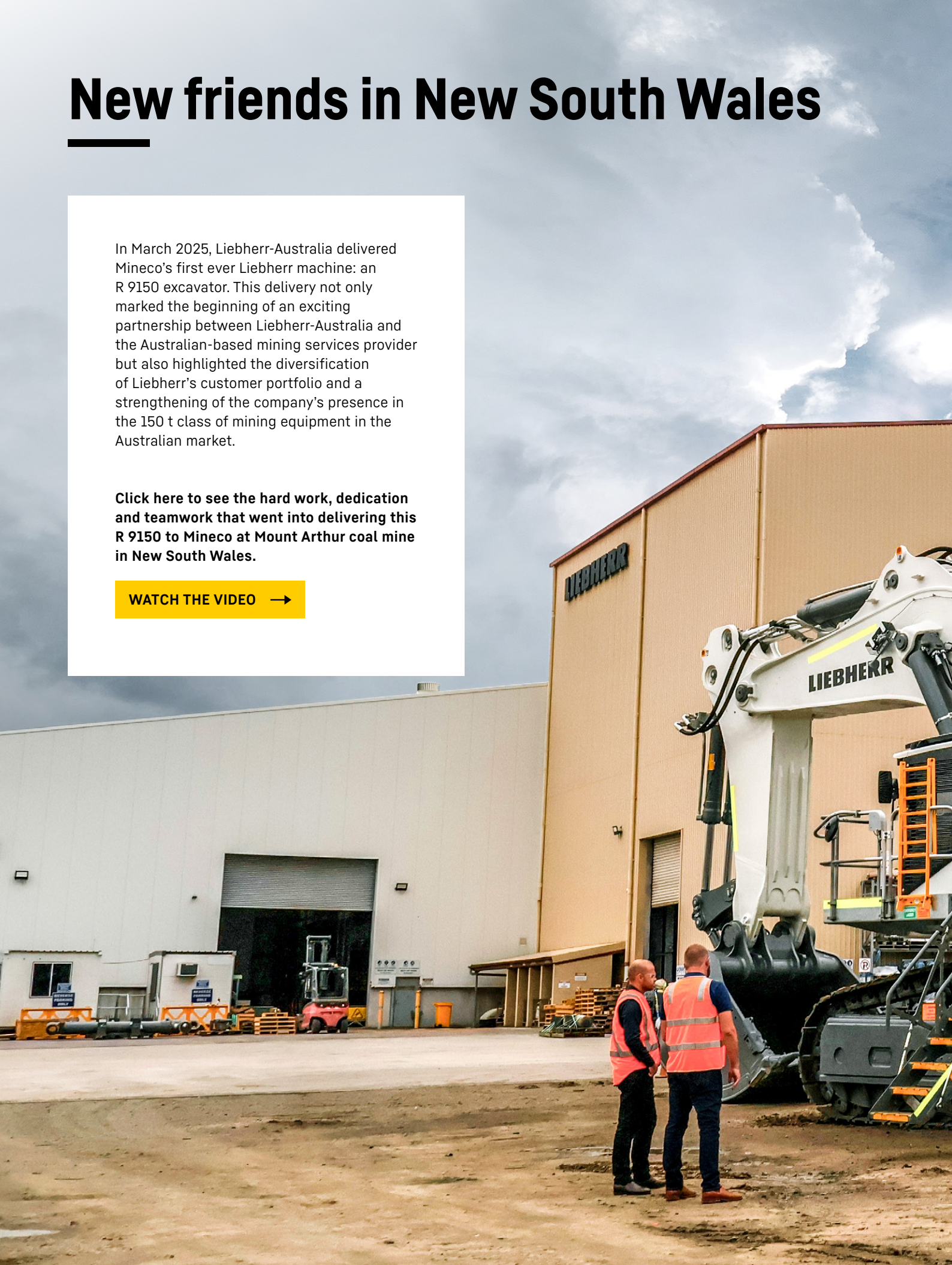

766

New friends in New South Wales

In March 2025, Liebherr-Australia delivered Mineco's first ever Liebherr machine: an R 9150 excavator. This delivery not only marked the beginning of an exciting partnership between Liebherr-Australia and the Australian-based mining services provider but also highlighted the diversification of Liebherr's customer portfolio and a strengthening of the company's presence in the 150 t class of mining equipment in the Australian market.

Click here to see the hard work, dedication and teamwork that went into delivering this R 9150 to Mineco at Mount Arthur coal mine in New South Wales.

WATCH THE VIDEO →




258
MINECO
9150
LIEBHERR

Product spotlight

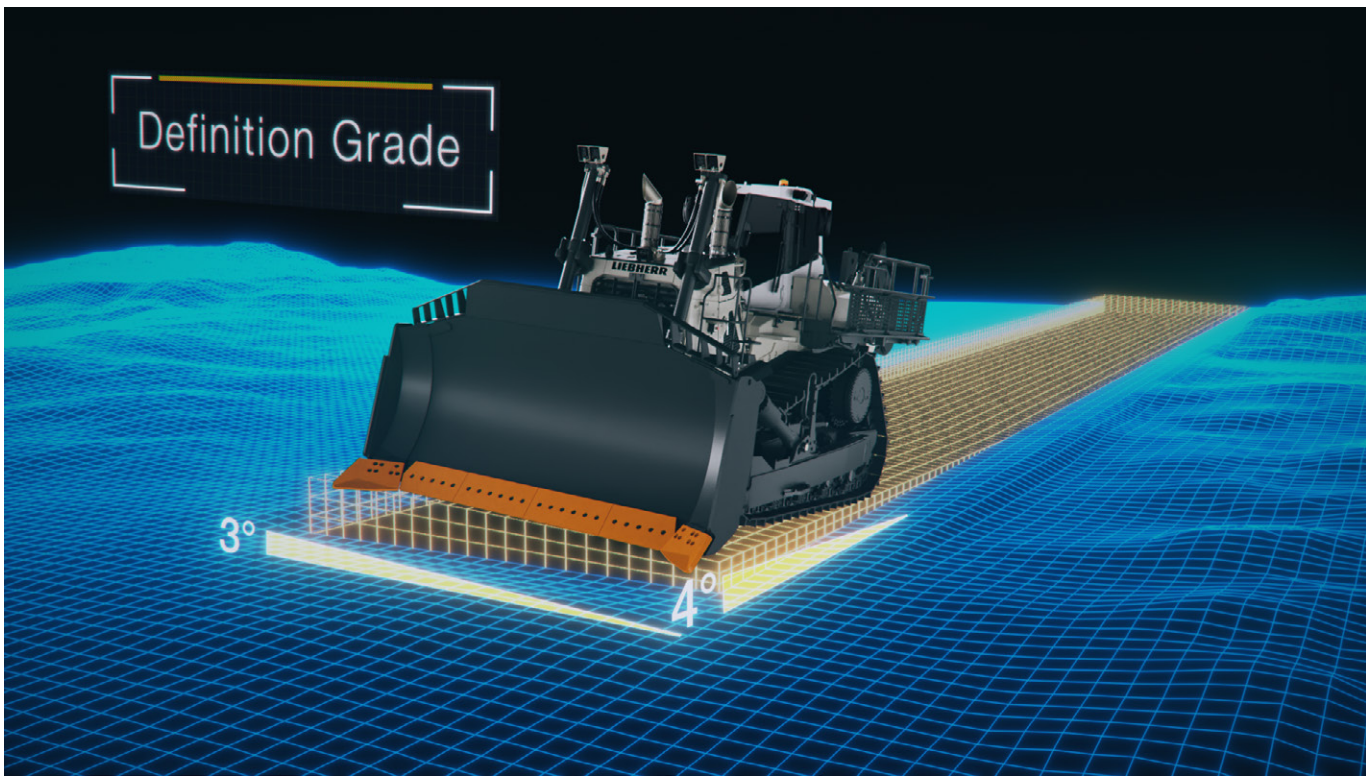
An in-depth exploration of Liebherr Mining solutions

Technical Spotlight: Operator Assistance Systems for mining dozers

Liebherr's range of dozers are powerful pushing machines. To help our customers release their full potential, we developed a suite of Operator Assistance Systems to unlock even greater fuel efficiency and productivity while reducing operator fatigue. But how? Let's take a look!

The Liebherr Group introduced Operator Assistance Systems (OAS) for its latest generation – Generation 8 – of small to mid-sized dozers in 2019. Since then, these systems have been enhancing productivity, improving fuel efficiency and reducing operator fatigue on work sites all over the world. And with the 2024 launch of the PR 776 G8 – the next generation of our flagship mining dozer – customers seeking a 70 t dozing solution could also experience the powerful combination of Liebherr dozers and OAS.

So what do these systems actually do? Well, it depends on which package you're talking about. Liebherr's range of OAS includes two tailored packages: one for blade control and another for ripper control. The Blade Control Assistance package provides operators with positional awareness and assistance with blade movement, while the Ripper Control Assistance package reduces operator workload by automating repetitive tasks.



The power behind the scenes

Even though these packages control opposing ends of the dozer, they both depend on the same core technologies. The foundation upon which each OAS is built is the electronic machine architecture of our Generation 8 dozers. This architecture underpins the electronic pivot control that gives the OAS their mastery over the blade and ripper. Smart technology detects the dozer's position, speed, specific force and angular rate and feed this information back into the OAS, so they always have an accurate representation of the dozer on site. This technology also makes it possible for these systems to operate entirely without additional stationary equipment or GNSS/GPS signals to ensure consistent and reliable performance in any environment, setting these solutions apart from other OEM offerings.

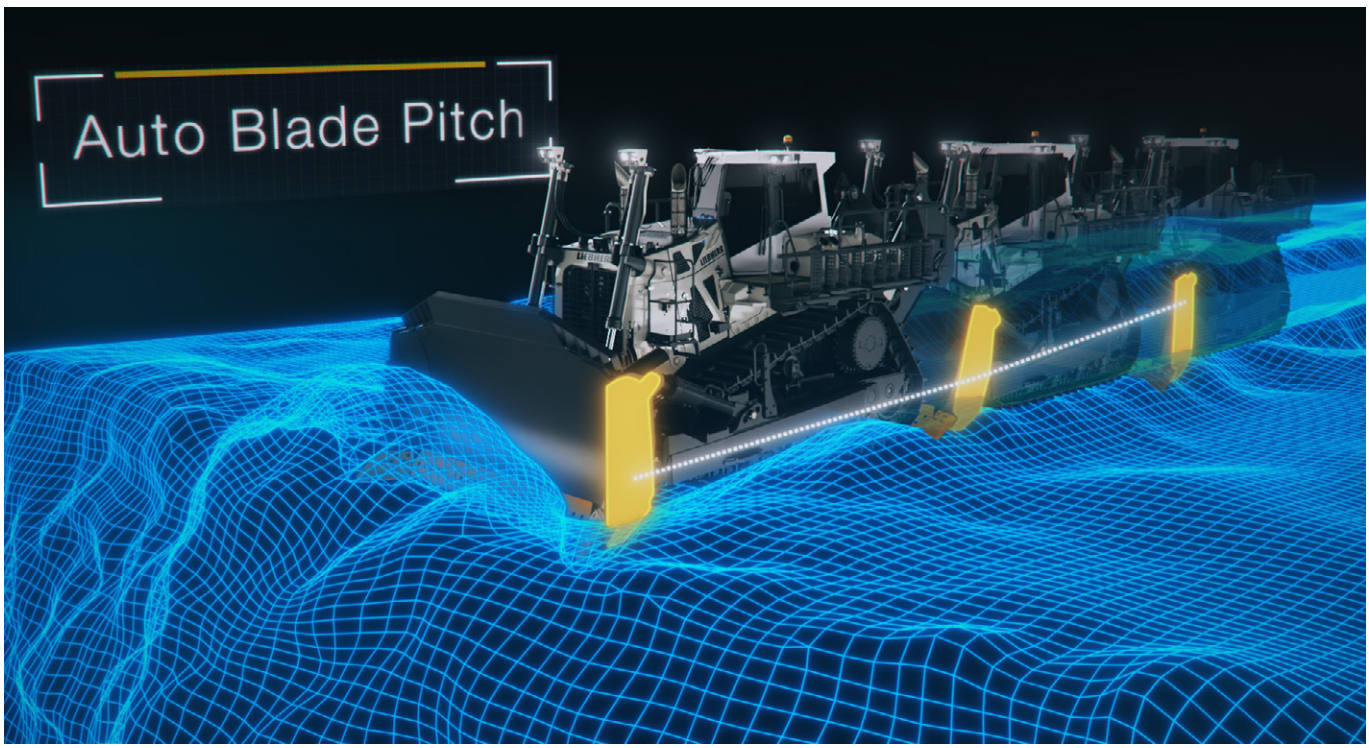
Blade Control Assistance package

This comprehensive package includes a range of OAS that offers precision control over the blade with minimal manual input, which increases pushing performance and operating accuracy while lessening operator fatigue. Each system uses the data collected by a variety of sensors to understand the position and inclination of both the dozer and the blade in relation to their surroundings. Operators can view this information on the main touchscreen display in the cab, along with all other vital machine data. The systems also use the information gleaned from these sensors to keep the blade stable, save preferred blade positions for levelling and automatically lift and lower the blade when needed. Operators can amend the blade's position with just a few taps on the touchscreen or by using the joysticks in the cab and their buttons.

A closer look at the Blade Control Assistance package

There are five OAS within the Blade Control Assistance package, each handling a different aspect of precision blade control. These are:

- **Indicate:** displays the exact inclination of both the blade and the dozer in longitudinal and lateral directions.
- **Free Grade:** keeps the blade stable, in longitudinal and lateral directions, when pushing material or levelling flat surfaces, ramps or embankments.
- **Definition Grade:** actively, and automatically, controls the blade to keep it at a predetermined angle for modelling basic 2D surfaces.
- **Auto-Blade-Lift and Auto-Blade-Return:** automatically lifts the blade while reversing and lowers it when travelling forwards.
- **Auto-Blade-Pitch:** saves and stores three different cutting angles so the blade can automatically be set to the right positions during the load, carry and dump work phases of a push cycle.



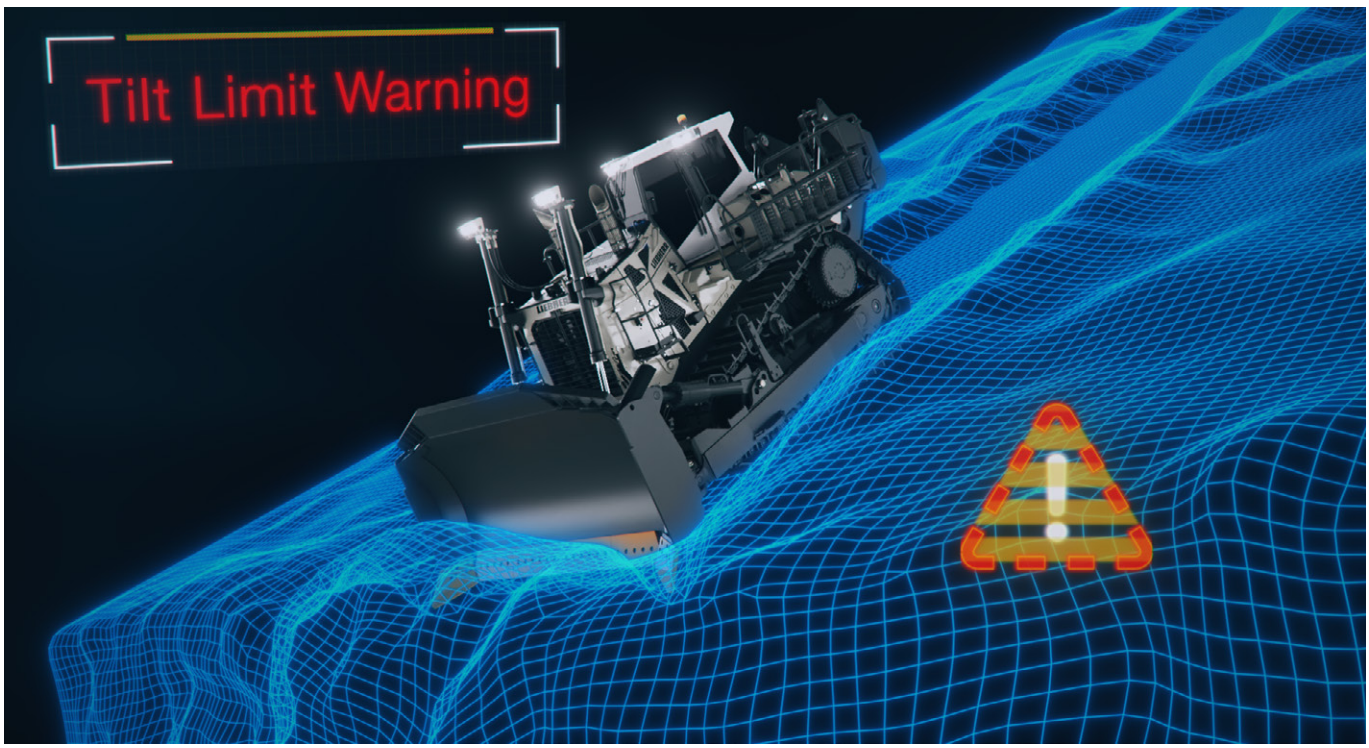
Ripper Control Assistance package
In this package, the data collected by a range of sensors is used in conjunction with the joystick in the cab to automate repetitive ripper tasks like lifting, retracting and moving into working and cutting positions. Automating these tasks helps to reduce operators' mental workload which in turn helps to keep stress and fatigue to a minimum.

Operators can save their preferred ripping positions within the system and then use the joystick controls to move the ripper as needed. Pressing the buttons on the joystick sends different electrical signals to the ripper's hydraulic control valve, depending on the number of times the joystick button is pressed and which system is active at the time. A single press can either raise the ripper or move it to the first of two saved positions. On the other hand, a double press can retract the ripper or move it to the second of two saved positions.

Availability and retrofitability
All of our OAS are available for the latest generation of our PR 776 mining dozer, the PR 776 G8, and can be installed at first fit or retrofitted onto machines already in operation. Other dozers in the Generation 8 range, up to the 40 t class, have Free Grade and Definition Grade OAS installed at first fit.

A peek into the future
In 2026 we'll be introducing a new Load Control package that builds upon the existing Blade Control Assistance and Ripper Control Assistance packages for our PR 776 G8 mining dozer. This upcoming package includes two advanced, non-GNSS-dependent assistance features – Blade Load Control and Ripper Load Control – engineered to enhance pushing and ripping efficiency. These systems will monitor real-time machine load, blade and ripper pitch and ground interaction while integrated control algorithms will process this data to automatically adjust the blade or ripper position for optimal material engagement. The Load Control package will maximise traction, reduce track slip and support consistent performance across varying ground conditions – all while reducing operator workload.

A closer look at the Ripper Control Assistance package
There are two OAS in this package, and each automates a different ripper task. These are:
- **Auto-Lift and Auto-Stow:** automatically lifts and fully retracts the ripper.
- **Auto-Lower:** saves and stores two ripper positions- a cutting angle position for cutting into the first layer of ground material and a working position for penetrating ground material.

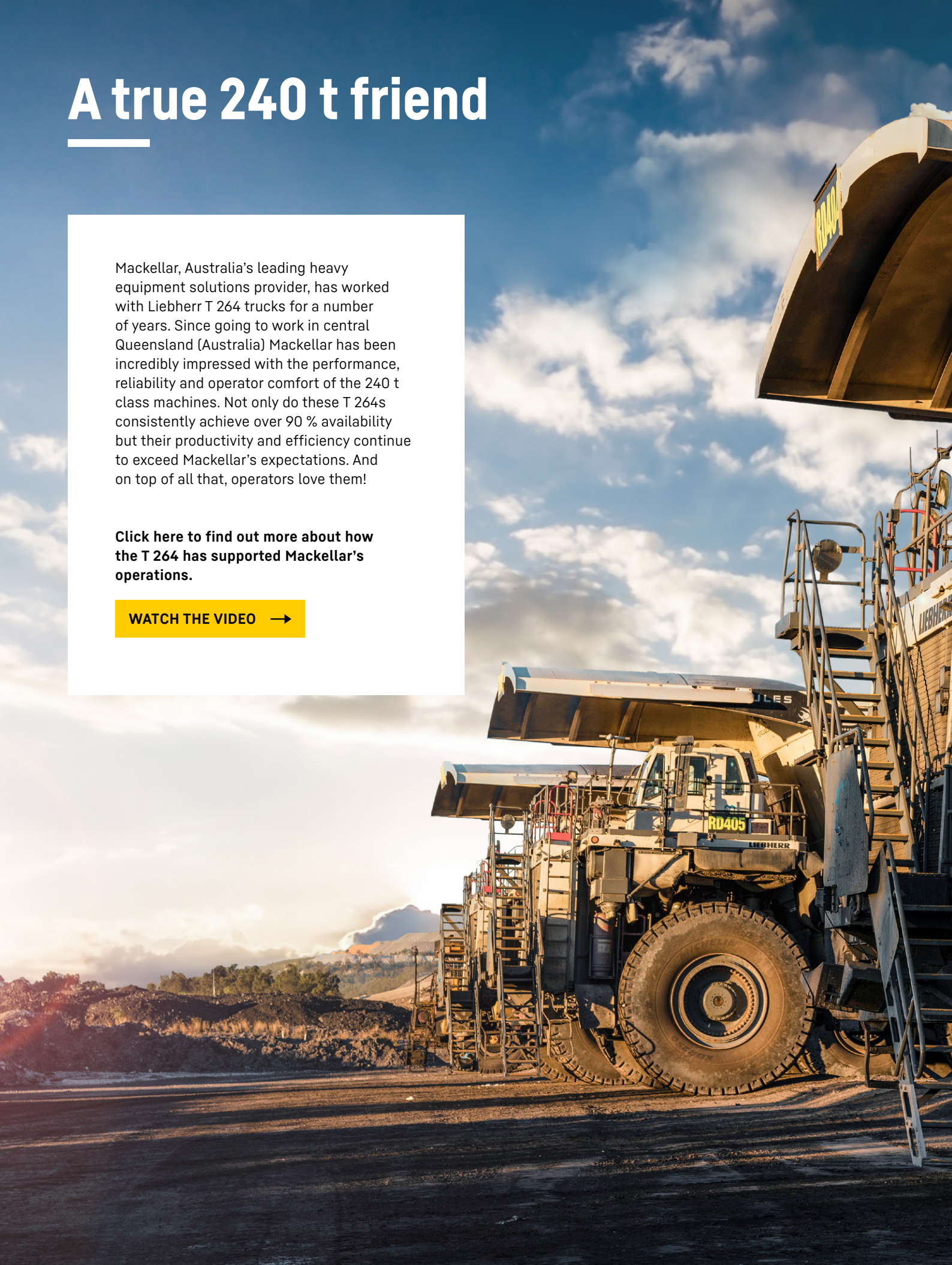


A true 240 t friend

Mackellar, Australia's leading heavy equipment solutions provider, has worked with Liebherr T 264 trucks for a number of years. Since going to work in central Queensland (Australia) Mackellar has been incredibly impressed with the performance, reliability and operator comfort of the 240 t class machines. Not only do these T 264s consistently achieve over 90 % availability but their productivity and efficiency continue to exceed Mackellar's expectations. And on top of all that, operators love them!

Click here to find out more about how the T 264 has supported Mackellar's operations.

WATCH THE VIDEO →




RD404
LIEBHERR
AUSTRALIA

The world of Liebherr

A taste of the wider world of the Liebherr Group

Aerospace

Ultra-precise teamwork: saving lives by helicopter

The alarm sounds for the Christoph Regensburg helicopter of the DRF Luftrettung air rescue service: now, every second counts – and every movement too. Pilot Christian Daxer checks the weather conditions, since the surrounding Regensburg area is often shrouded in mist. In daylight hours, he needs a minimum of 800 m visibility in order to take flight. Once that's guaranteed, Christian Daxer completes the necessary checks inside the cockpit. He is assisted through this process by a paramedic with additional training. Meanwhile, lead doctor Katrin Judemann inspects the outside of the H145 – an ultra-modern helicopter from Airbus, a company for whom Liebherr technology plays a vital role. Shortly afterwards, the rotor blades start to turn, the doctor climbs aboard and the H145 rises up. Within just two minutes, the machine and its crew are ready for action.

Right of way on the flight path

This series of actions precedes every launch of DRF Luftrettung's Regensburg-based crew. Routines are important to the station situated at Regensburg University Hospital, especially since the team never knows what to expect at their destination. Contrary to popular belief, helicopter rescues are not the reserve of only very complex emergencies. Ultimately, it comes down to which mode of rescue transport can get an emergency doctor to where they're needed the fastest. The helicopter has a clear advantage in this regard. 'Up in the air, we're simply faster than on the ground, since there are no bends, no red lights and no traffic jams,' explains Judemann.

She takes great pleasure in flying and in the close bond she has with the rest of the crew. Mutual trust is hugely important, she explains, and this is what glues the team together.

Emergencies and urgent transfers

The emergency responses are by no means always dramatic. Sometimes, the injury is less serious than initially feared or the professional care provided by the team soon has the patient feeling much better. Being a dual-use helicopter, 70 % of the Christoph Regensburg's deployments are emergency call-outs, with the other 30 % being what are known as secondary deployments.
The latter involves flying patients who are already under medical care from one hospital to another: this may be because they need a particular operation or specialist treatment that is only available there.

'Up in the air, we're simply faster than on the ground, since there are no bends, no red lights and no traffic jams.'

Katrin Judemann
Lead helicopter doctor on the Christoph Regensburg

However, these patients may be in a critical condition and the transfer is a matter of urgency. Judemann prepares for each transfer by discussing the case beforehand with the doctors responsible for the patient's care.

It is an entirely different approach for incidents involving lots of severe casualties and multiple emergency services, such as the fire brigade. 'In those instances, it's really important to give clear commands to ensure everything is coordinated smoothly,' explains the emergency doctor.

Judemann has extensive experience in such situations. Those working on board the Christoph Regensburg come from the field of anaesthesia, have previously worked in the conventional emergency services and have completed additional training. Due to their experience and their professionalism, the crew does not take every job home with them. That being said, now and again there are incidents that Judemann can't put to the back of her mind. 'That's when it's really helpful to speak with the others in the team,' she explains.

Specialist technology is vital

Daxer also greatly values these conversations. He explains that the work is demanding for all those involved, and it calls for resilience and stamina. The pilot has been working for DRF Luftrettung since 2018. Previously, he flew all over the world for air carriers, most recently in the Caribbean. That's how he knows that by no means all helicopters are up to the job of emergency rescue. The Regensburg model is apparently not only certified, but 'state of the art'.

'That means we're flying the market leader in the helicopter business,' explains a visibly impassioned Daxer. In his job, you have to have total faith in the technology.

One aspect that's always challenging is the weather. Daxer gets his information from the German Meteorological Service, as well as numerous webcams distributed between Nuremberg (Germany) and the Czech border. The cloud base determines everything. 'It's not so much that pouring rain means I can't see. We have to be able to avoid the clouds and the wafts of mist,' explains the pilot.

'The H145 is state of the art – we're flying the market leader in the helicopter business.'

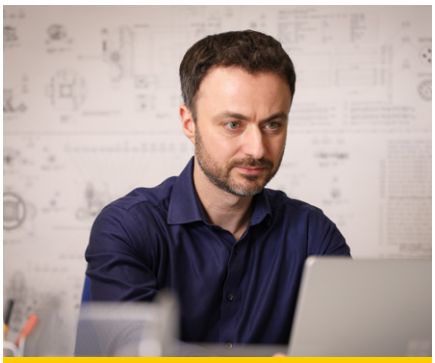
Christian Daxer
Pilot of the Christoph Regensburg

At night, the weather has to be even better than in the day. For added safety, the Regensburg crew fly with two pilots for services after dark. They even use special night-vision goggles.

Pinpoint accuracy in challenging terrain

The Christoph Regensburg is on call 24/7, while the crew changes every twelve hours. In daylight hours, manoeuvres in impassable terrain demand maximum concentration. After all, the pilot can rarely expect to find a tarmacked helicopter landing pad awaiting their arrival. The relative proximity to the Danube River and the Bavarian Forest means the Regensburg team often attends rescue operations on the water or in the mountains. Here too, the pilot needs to control the machine with expert precision – without having to contemplate the technology at great length.

This is where Liebherr comes into play. The company supplies control elements, among other things, to the helicopter manufacturer Airbus. Integral to these elements are the actuators: components that convert a pilot's signal into a control signal for the rotor blades.



'We put every part through its paces.'

Christopher Fenner
Chief engineer for helicopter actuation, Liebherr-Aerospace Lindenberg GmbH

The rotors of a helicopter always turn at virtually the same speed. To alter the airstream and steer the aircraft, the blades of the main rotor and tail rotor have to be adjusted. And that is the job of the actuators from Liebherr.

'In aviation, some parts are often technically speaking redundant: if one fails, another takes over its function,' explains Christopher Fenner, chief engineer for helicopter actuation, Liebherr-Aerospace Lindenberg. 'But some elements are not doubly integrated, it would be catastrophic if one of those were to fail.'

This includes the actuators. Consequently, they are tested multiple times to make sure that they are completely reliable in their function. 'Even when the analyses show that there are no problems, we still put every part through its paces,' Fenner reports.

Components to take off

This extensive testing is all the more important because a helicopter can be in service for decades, so the parts need to last a long time. In the H145, it's not just the actuators that this applies to. Liebherr also supplies hydraulic pumps, which ensure the actuators can function, and the gearbox.

'Everyone recognises that distinctive high-pitched whistling sound of a helicopter's turbine engine. That's down to the high rotation speeds. To translate this speed to the rotor speed, our gearboxes are essential,' explains Fenner.

This means that, like many other helicopters, the Regensburg helicopter simply would not be able to take off without the products from Liebherr.

Each year, Liebherr delivers over 1,000 different components to manufacturers like Airbus. And that figure is just the assemblies and components; it doesn't account for every last bolt or washer. Fortunately for the engineers, Liebherr is a company highly driven by innovation – always on the cutting edge and involved in many research projects. At the same time, the company has a bank of expertise amassed over 60 years in the field of aerospace.

'We don't start from scratch. If a customer has a specific wish, we generally find a similar product that we can then adapt to meet their individual requirements,' explains Fenner.

More precise than millimetre work

The need for accuracy at every work step is tremendous. What that means in real terms can be explained by manufacturing engineer Danilo Martina. He works at Liebherr in Friedrichshafen (Germany) where the helicopter gearbox parts are fitted with gearwheels. One of the final steps in production is gear grinding.

'I align the clamping material and the grinding wheel to thousandth-of-a-millimetre accuracy to ensure the product is the very best quality possible,' he explains.

To meet the safety requirements for aerospace, he cannot allow himself to make mistakes. That's why Martina personally checks the dimensions of every component first. Then, he takes the component to the quality

department, where it is inspected again and ultimately approved for release.

'It makes me feel so proud to know that these components can take to the skies and save lives,' explains Martina.

Fenner places great value on the fact that he can play his part in the missions of the Christoph Regensburg and other rescue helicopters. As an amateur pilot in his free time, he occasionally hears reports of helicopters on missions over the airwaves. Perhaps it could even be pilot Christian Daxer and Dr Katrin Judemann on their latest rescue operation. The ability of them and their colleagues to help those in need quickly and in adverse conditions is dependent on the earlier efforts of many hard-working people. After all, successful helicopter missions are reliant on two things: an experienced rescue team and high precision technology that can be trusted to work smoothly every time.

Ideas become reality

Did you know that there's been a Liebherr presence in Biberach (Germany) since 1954?

To commemorate the special connection between Liebherr and this southern German city, Museum Biberach had an exhibition dedicated to Liebherr's history in the region that ran from May until October 2025. Entitled 'Ideas become reality', this exhibition included more than 20 exhibits inside the museum, including an interactive crane model, that were complemented by a mixture of graphics, interactive elements, films and models showcasing Liebherr's achievements through the years.

The exhibit continued outside, in the courtyard, with an R 9150 mining excavator bucket to illustrate just how big Liebherr equipment can get! In fact, a Liebherr LTC 1050-3.1E compact crane with electric motor – which was also part of the exhibition – was used to lift that enormous excavator bucket into position. A real-life example of Liebherr products working together.

Highlights from other product segments

Deep foundation

New piling and drilling rig: LRB 19

Liebherr has launched the successor to the tried-and-tested LRB 16 and LRB 18 models – the new LRB 19 piling and drilling rig. The compact all-rounder is designed for all common applications in the deep foundation sector. The all-rounder is equipped with the H 6 hammer or the LV 23 and LV 23 F vibrators, all from Liebherr.

Earthmoving

First battery-powered electric crawler excavator

The R 920 G8-E is the first battery-powered electric crawler excavator from the Liebherr Group. Manufactured at Liebherr-France SAS in Colmar (France), the excavator was presented for the first time at Bauma 2025.
The R 920 G8-E has the same capability level as a crawler excavator with a combustion engine and features particularly low noise levels and a lack of emissions.

Aerospace

Liebherr on board DECADE-X

Liebherr-Aerospace has joined forces with other major companies of the aerospace and defence industry to launch DECADE-X, the Digital Ecosystem for Aerospace and Defence. The association is aiming to build up a new trusted digital ecosystem for the industry. Together with Airbus, BoostAeroSpace, Collins Aerospace and Thales, Liebherr will collaborate on the first bricks of a new trusted digital ecosystem to tackle the challenges of the industry with a digital collaborative ecosystem for interoperable solutions.

Earthmoving

Free Modelling: improving efficiency in construction site management

Liebherr has presented the new Free Modelling assistance system, a technology designed to improve efficiency in construction site management. This innovative solution allows machine operators to create and modify simple 3D site models directly from their Liebherr crawler cabins. By integrating a GNSS machine control system with advanced sensors and real-time data visualisation, Free Modelling empowers operators to make informed decisions based on current site conditions.

Maritime cranes

Liebherr manufactures 2,000th LHM

The 2,000th Liebherr mobile harbour crane has been manufactured by Liebherr's Rostock production facility. The historic moment underscores Liebherr's five decades of engineering excellence and innovation in mobile harbour cranes. The LHM 600 crane was delivered to Marcegaglia – a global leader in steel processing – for loading and unloading products such as steel coils, billets and plates.

Components

LiGO injection systems – the new generation of sustainable injection technology

With LiGO injection systems, Liebherr introduces innovative injection solutions for climate-friendly fuels, such as hydrogen, methanol, ethanol and ammonia. LiGO offers port fuel and direct injection systems with a standardised platform design. This enables efficiency and flexibility in upgrading engines for different combustion concepts, since fewer different parts are used, which simplifies production and maintenance. This is a significant milestone in the journey towards circular economy for the entire industry.

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