
Groundbreaking

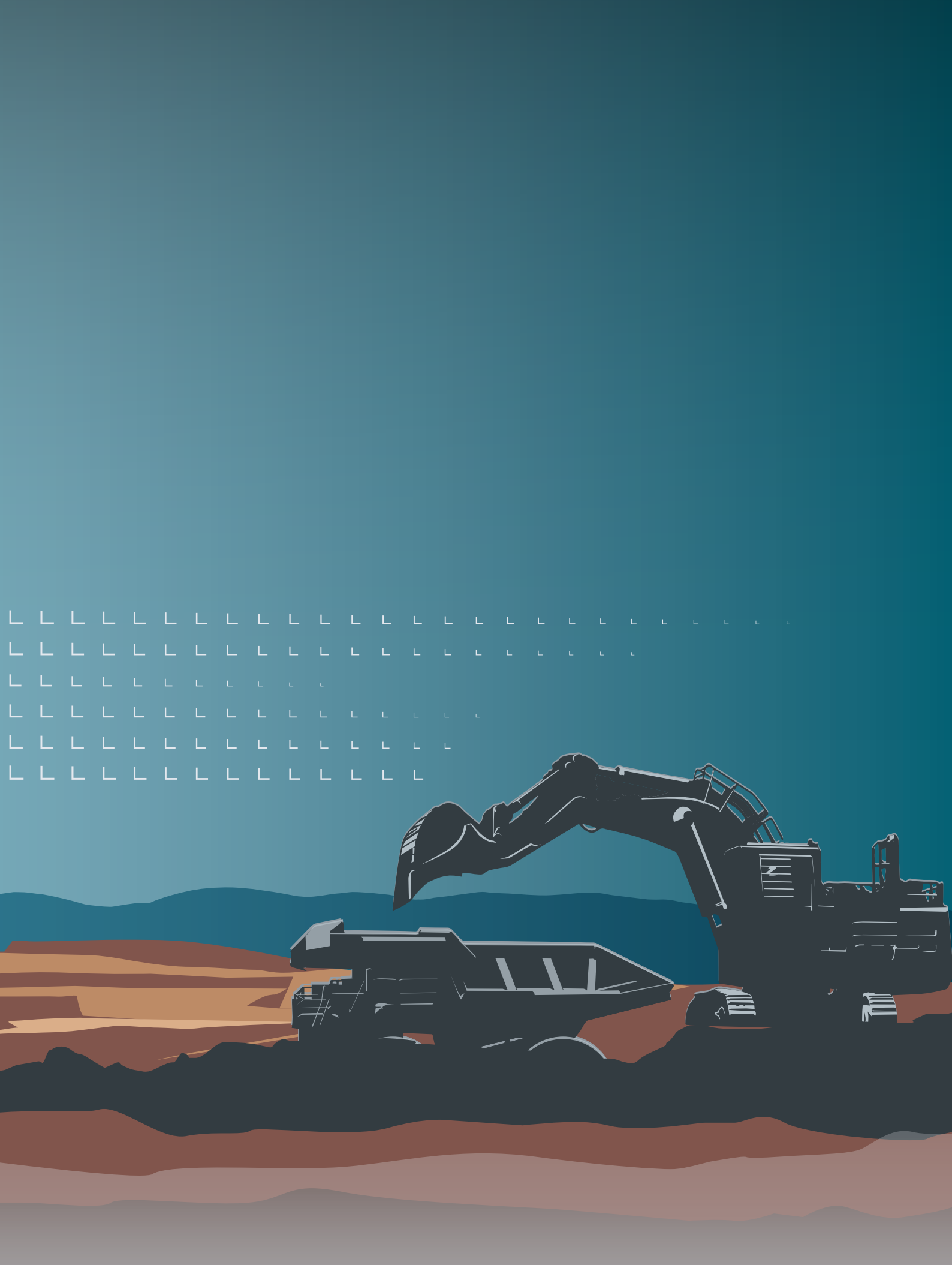
The latest from Liebherr Mining

1 | 2025

LIEBHERR







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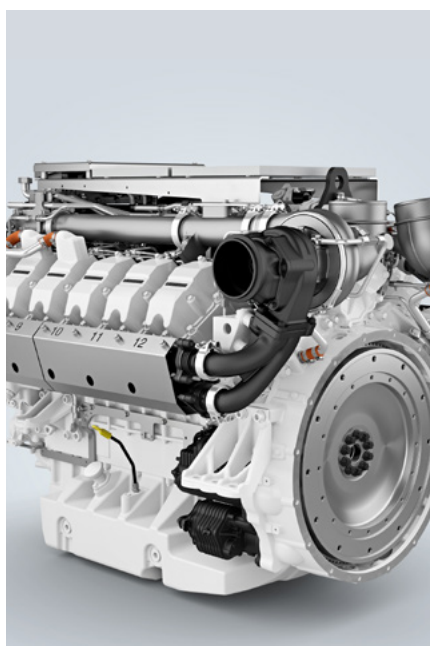
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Key updates from Liebherr Mining



Join us at Bauma 2025!

Liebherr is taking part in Bauma again in 2025 in our usual spectacular fashion. Bauma is the largest exhibition for the construction industry in the world and the Liebherr Group has been participating since 1956. So, what makes Bauma so special? Let us tell you!

Bauma: then and now

Bauma first started in 1954. At that time, the focus was on optimising work processes to accelerate the reconstruction of Germany after World War II. The first Bauma took place in an area of 12,000 square metres where 58 exhibitors showed their wares to more than 8,000 visitors. Bauma today looks very different to what it did 70 years ago! The last Bauma exhibition, held in 2022, spanned more than 600,000 square metres of indoor and outdoor space, had more than 3,000 exhibitors from 60 countries and around 500,000 visitors from approximately 195 countries.

Mining and Bauma

For the most part, Bauma is known as an exhibition for the construction industry, but did you know that the mining sector is also a big part of the show? In 2004, Bauma introduced a dedicated mining exhibition area that, over the years, has evolved and expanded to become a leading platform for the mining industry. In fact, during Bauma 2022, 41 % of all Bauma exhibitors displayed products and services for mining. There are unique synergies between the construction and mining industries and Bauma has been celebrating these for years.

Liebherr at Bauma

In the nearly seven decades since our first appearance at Bauma, Liebherr has become one of the premier exhibitors at the exhibition, with 14,000 square metres of exhibition space. This year, Liebherr's motto for the show is 'Hands on the future', which highlights both our proactive approach to preparing for tomorrow's challenges and that we work hand in hand with our customers and partners to develop highly innovative, dependable products, services and solutions of exceptional quality. Eight of Liebherr's thirteen product segments will be representing the Group at Bauma 2025 and sharing displays and demonstrations that highlight that Liebherr does, indeed, have its hands on the future.



Did you know...?

The name 'Bauma' comes from the German word 'Baumaschinen', which means construction machinery.

What you need to know about the Liebherr–Fortescue partnership

Our partnership with Fortescue will play an enormous role in both companies achieving their 2030 decarbonisation targets! Plus, the machines and technology we develop together will pave the way for decarbonising mining operations around the world. But how? Let us explain.



A historic equipment deal

At MINExpo in September 2024, Liebherr and Fortescue announced a major extension of our partnership, which was first established in June 2022. The extended partnership includes the supply of 475 Liebherr zero emission mining machines, some of which will be equipped with Fortescue's cutting-edge battery technology. Of these 475 machines, 360 will be autonomous battery-electric T 264 haul trucks, 55 will be R 9400 E electric excavators and 60 will be battery-electric PR 776 dozers.

This deal represents the single largest equipment deal in the history of the Liebherr Group, which spans over 75 years. It is also Fortescue's largest ever contract.



Exciting zero emission machines

In order to supply such an enormous number of zero emission mining machines, Liebherr and Fortescue are also developing battery-electric solutions for hauling and dozing. All 360 T 264s in this deal will be equipped with a zero emission battery power system developed by Fortescue Zero – Fortescue's technology arm. Fortescue Zero's battery power will also be integrated into the PR 776 – our flagship mining dozer.

But how far away are these solutions? The 360-strong T 264 truck fleet has already begun arriving at Fortescue's Western Australian operations. The trucks that have already arrived are equipped with internal combustion engines, but these will be converted to zero emission powertrains before 2030. The T 264 battery-electric truck itself will begin validation this year, with large volumes to be delivered from 2026 to ensure the 360-strong fleet is up and running by 2030! And the PR 776 battery-electric dozer is expected to enter series production in 2029.

As well as working with us on these impressive dozing and hauling solutions, Fortescue is developing a stationary fast charger for the battery-electric T 264. This solution is equipped with options for robotic connection and can provide up to 6 MW of power that is capable of charging the battery-electric T 264 in 30 minutes.

Innovative mining solutions for the digital age

As well as cutting-edge mining machinery, Liebherr and Fortescue are developing a range of innovative technological solutions designed to optimise a number of everyday mining activities.

The Autonomous Haulage Solution (AHS) enables the completely autonomous operation of our haul trucks by combining advanced automation with real-time data insights to enhance productivity, safety and efficiency. This solution is what will be installed onto the T 264 battery-electric truck to make it an autonomous battery-electric truck.

There's also the Fleet Management System (FMS), an OEM-agnostic solution that delivers real-time, end-to-end monitoring for all connected assets to offer a strategic overview of onsite activities. This helps to reduce non-productive time across the entire load-haul-dump value chain.

And lastly, the Machine Guidance System (MGS) delivers critical material information to minimise ore variability and dilution. Like the FMS, it can be integrated into multiple brands of loading and pushing machines and offers high-precision accuracy as well as real-time material tracking.

All three of these technology products can work independently or can be integrated together for a comprehensive technological solution.

Leading the pack

Once all 475 of the machines in this deal are up and running in Fortescue's Western Australian operations, they will form one of the first and largest full-scale operational autonomous, zero emission fleets by the end of the decade.

Proven solutions for everyone

Once validated, every single solution developed within the Liebherr-Fortescue partnership will be made available to other customers so that they too can progress in their zero emission journeys.

Sparking an electric revolution

The R 9400 E has been producing impressive results in Australia since first arriving at Fortescue's iron ore operations in the Pilbara region of Western Australia at the end of 2023. In fact, Fortescue has reported that the R 9400 E provides longer uptime, fewer failures and component changeouts, higher breakout force and smoother operation compared to its diesel counterpart. And since the R 9400 E will be playing a huge role in the decarbonisation of Fortescue's Australian operations – with 55 of these machines to be delivered by the end of the decade – results like these are incredibly important!

To hear more from Fortescue about the exceptional performance of the R 9400 E, [click here!](#)



Liebherr Mining at MINExpo

News and highlights from the MINExpo 2024 exhibition



MINExpo at a glance



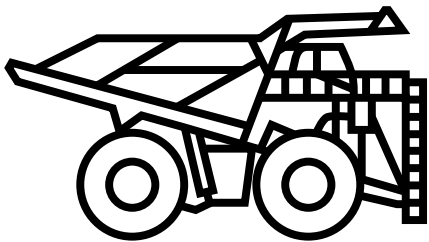
44,000+

mining professionals from **126** countries

3

exhibition halls

More than **65,000 m²** of displays



1,900+

manufacturers, suppliers and
service providers

Liebherr's booth was

2,777 m²

the **third largest** at the show!



A marvellous start to MINExpo

At an event packed full of drummers, dancers, an exciting light show and guest appearances from Dr Andrew Forrest and Dr Willi Liebherr, Liebherr and Fortescue celebrated some of the incredible milestones from the companies' industry-leading partnership. One of these was the unveiling of the autonomous battery-electric T 264 jointly developed by Liebherr and Fortescue. People lucky enough to attend the event were among the first in the world to see the cutting-edge machine.

This event also saw Dr Forrest and Dr Liebherr announce a significant expansion of the zero emission equipment partnership between the two companies. Under this expanded partnership, 475 zero emission machines will be delivered to Fortescue's Australian sites by the end of the decade. The two companies will also continue to develop innovative zero emission technology, which includes battery-electric dozing solutions. This expansion of the Liebherr-Fortescue partnership represents the single largest equipment deal in the over 75-year history of the entire Liebherr Group.

[Click here to relive the magic of this electrifying event!](#)





IoMine

Litron

austir

264

LIEBHERR

64

Powered by
Fortescue
ZERO



Introducing the autonomous, battery-electric T 264!

The autonomous, battery-electric T 264 presented at MINExpo represents years of hard work and the joining together of the autonomy and zero emission arms of the Liebherr-Fortescue partnership. The truck is powered by a 3.2 MW battery developed by Fortescue Zero – Fortescue's dedicated technology division – that can be charged in 30 minutes by a static charging solution developed alongside the truck.

The Autonomous Haulage Solution equipped on the truck was jointly developed by Liebherr and Fortescue. This technology includes an Energy Management System that coordinates the static recharge assignments for the autonomous, battery-electric T 264s on site and ensures the charger is fully utilised without causing queuing.



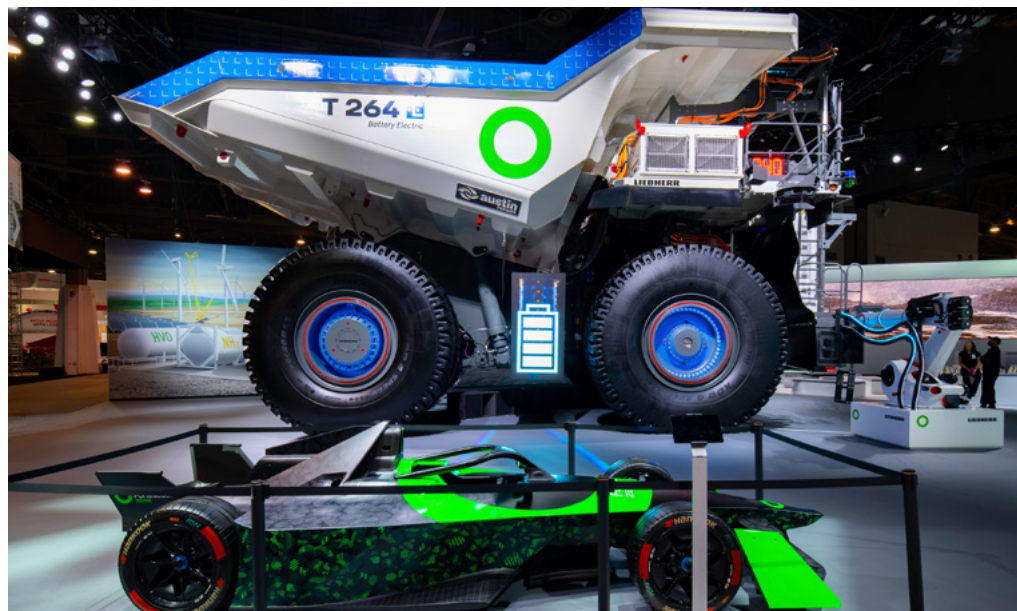
Equipped with first-of-their-kind tyres!



Did you know that the tyres equipped on the battery-electric T 264 at MINExpo were the first-ever energy-efficient tyres specifically designed for mining vehicles? These Michelin XDR 4 Speed Energy™ tyres have an optimised tread and are made of an energy-saving compound that means haul trucks fitted with these tyres experience less rolling resistance. This reduces fuel consumption and therefore decreases greenhouse gas emissions and increases cost savings. Talk about a win-win-win situation! Working with companies like Michelin helps us to move even closer towards a decarbonised future.

Racing towards a decarbonised future

Having a Formula E car on our booth helped us showcase that the technology in our new battery-electric T 264 has some pretty impressive origins. Before Fortescue Zero became part of Fortescue in 2022, it was known as Williams Advanced Engineering. The company was responsible for adapting the technology developed for the Williams Racing Formula One team for a range of commercial applications. Fortescue Zero uses its extensive technological expertise to develop technology – like the 3.2 MW battery in the battery-electric T 264 – that will help to decarbonise the mining industry.



An electrifying loading solution

Our R 9400 E is a shining example of our more than 40 years' experience in the development and manufacture of electric excavators. This machine features our latest innovations and, for increased manoeuvrability on site, can be equipped with our cable reel solution that offers up to 300 metres of autonomous cable management.





The PR 776 G8 makes its debut

MINExpo 2024 also saw the unveiling of the latest generation of our flagship 70-tonne mining dozer: the PR 776 G8. This dozer not only offers the lowest hourly fuel burn in the 70-tonne class, but also best-in-class efficiency! Plus, this latest generation PR 776 is compatible with our advanced Operator Assistance Systems to further optimise performance as well as our LiReCon teleoperation system, which improves operator safety on site.



Intercontinental dozer operation



Our teleoperations system, LiReCon, is designed to improve the safety of operators on site while also boosting productivity and uptime. By having operators use our teleoperation stand, rather than sitting in the cab of a dozer, our customers can reach new extraction areas previously inaccessible due to safety risks. So, to demonstrate the power and reliability of LiReCon at MINExpo, one of our experienced dozer operators sat in the state-of-the-art teleoperations stand at our booth in Las Vegas, USA, and operated a Liebherr dozer on a mine site in Austria!

Liebherr and Bruno Generators Group announce joint project for green ammonia power generators



At MINExpo 2024, Liebherr and Bruno Generators Group announced a joint investigation into the feasibility of green ammonia as the principal fuel for low and zero emission power generation solutions for mining. If successful, these solutions could help mining companies reduce their greenhouse gas emissions.

Liebherr's mining and components product segments will work alongside Bruno Generators Group (BGG) to determine how each party's expertise can be used to investigate low emission power generation with green ammonia as fuel. BGG is a premium Italian company that specialises in the design, development and production of cutting-edge power generators, battery energy storage systems and mobile energy solutions.

Liebherr has already investigated ammonia as a power source for dual-fuel internal combustion engines. The results of these investigations are promising and encourage the continued development of this solution.

The potential of green ammonia

Green ammonia is a hydrogen carrier that combines the advantages of lower transport and storage costs compared with compressed or liquified green hydrogen with its future usage as an energy vector in many areas of the world. Generators and off-board power units running on green ammonia could

provide low or zero emission ways of supplementing power supplies on site. Green ammonia generators could provide a reduced emission method of alleviating energy variations or blackouts on site while mobile off-board power units running on green ammonia could power electric excavators just outside the pit, reducing both emissions and infrastructure requirements.

'We're thrilled to be working with BGG in this incredibly exciting project. Their innovative mindset and tracked development and delivery of low emission solutions are a perfect match for us as we work towards our zero emissions targets,' says Oliver Weiss, executive vice president, R&D, engineering and production, Liebherr-Mining Equipment SAS. 'When our combustion engines business unit saw promising results from ammonia as a low and zero emission power source after multiple test bench runs, we were excited to see how we could capitalise on this to provide even more ways our customers can pursue zero emissions.'

'We are very proud of partnering and joining forces with Liebherr Mining in this project. Together, we share a common vision with an uncompromised commitment to sustainability, and we strive to lead the industry in responsible practices,' says Renato Bruno, chief executive officer, Bruno Generators Group. 'This partnership represents an incredible milestone in our pursuit of sustainable solutions for the benefit of our customers in the mining segment. Sharing and blending our respective expertise will further enhance and naturally boost our innovation mindset, accelerating our journey toward a net zero future.'

'We are excited to lay the foundation for this important step towards a low and zero emission solution for our mining customers,' says Steffen Apel, key account manager for combustion engines in the mining industry, Liebherr-Components AG.

BHP and Liebherr sign new Global Framework Agreement

At MINExpo 2024, Liebherr and BHP signed a new Global Framework Agreement. Built on an existing agreement, this solidifies Liebherr as one of BHP's preferred mining equipment suppliers across the company's global assets.

Liebherr and BHP, one of the world's foremost resources companies, announced a Global Framework Agreement (GFA). This agreement further cements the long-standing partnership between the two companies, uniting both companies in their shared pursuit of cutting-edge mining solutions.

Building on a history of successful collaboration, the GFA merges BHP's drive for responsible resource extraction with Liebherr's technological expertise in heavy machinery. Together, they aim to continue pushing the boundaries of operational efficiency while enabling greenhouse gas emission reductions for BHP's operations.

'This extension is a testament to the strength of Liebherr's relationship with BHP and our shared vision for the future of mining,' says Dr Jörg Lukowski, executive vice president, sales and marketing, Liebherr-Mining Equipment SAS. 'Over the years, we've worked closely with BHP to develop solutions that not only improve operational efficiency but also drive more sustainable outcomes. We are excited to continue this journey and deliver the latest advancements in automation, digitalisation and electrification to their operations globally.'

Under this agreement, Liebherr and BHP will collaborate closely on delivering world-class machine performance and integrating the latest advancements in safety, automation, digitalisation and electrification across BHP's global mining operations.

Partner for success

The partnership between Liebherr and BHP, which spans more than two decades, has seen the deployment of Liebherr ultra-class excavators across BHP's global assets, including R 9600 Generation 8 machines. Notably, BHP's flagship South Flank iron ore operation in the Pilbara region of Western Australia received its first R 9600 in March 2020. In early 2024, BHP took delivery of its first electric excavator at its Yandi mine – a Liebherr R 9400 E. This machine is a fully electric version of the R 9400.

BHP's chief commercial officer, Ragnar Udd, says, 'This renewed agreement between BHP and Liebherr not only reaffirms our trusted partnership over the years but also signals our collective ambition towards helping to influence the future of mining through innovation, safety, productivity, operational excellence and greater sustainability.'



Your mining partner for the long term



At Liebherr Mining, we strive to foster long-term relationships with our customers so we can support them with our high-quality equipment, technology and support services both now and in the future. That's why we chose 'Your mining partner' as our motto for MINExpo 2024.

But being 'your mining partner' is more than just a motto to us. Providing concrete ways for our customers to optimise their mining operations is what we do every single day. And we do it with our best-in-class equipment, decarbonisation solutions, cutting-edge technology and service excellence.

Best-in-class equipment

Our 50 years' experience in designing, manufacturing and supporting mining trucks, excavators and dozers has allowed us to develop mining equipment that offers maximum performance, safety, efficiency and reliability at the lowest cost per tonne. In fact, many of our machines offer the best digging forces, cycle times and cost per tonne in their class, making us an excellent partner for mining equipment solutions.

Decarbonisation solutions

We understand that no two of our customers' decarbonisation journeys will look the same. That's why, as a full solution provider, we have a range of services that can help make the transition as seamless as possible: from helping customers decide which solutions will work for their operations, to delivering the equipment and then supporting Liebherr machines in the field – we'll be there. Plus, our modular design philosophy makes it easy for customers to upgrade or repower their current Liebherr equipment with alternative drivetrain solutions whenever it makes the most sense for them.

Cutting-edge technology

With IoMine, our comprehensive technology portfolio, customers can optimise the operation, automation and maintenance of their Liebherr fleets. The solutions within IoMine use real-time data monitoring, visualisation tools and remote diagnostics to enhance fleet capabilities, simplify operations, foster autonomy and improve fleet management for higher profitability and smarter energy use.

Service excellence

Once a Liebherr machine goes to work at a customer's mine site, we will be there to support them throughout the machine's entire life cycle. This means operator training, everyday maintenance, parts inventory, emergency repairs and even offering upgradable solutions to future-proof customers' existing fleets. And because our service network spans more than 70 countries, we can provide fast and reliable support wherever our customers may be!

Click here to relive Liebherr as your mining partner at MINExpo 2024!

Mining rock stars

Our amazing people and achievements

Friends in faraway places: getting to know Liebherr-Australia

Australia is a unique place: it's the only country that's also a continent, the only continent without an active volcano and home to more camels than Egypt! But on top of all that, Australia is also the top overall mining country in the world.

Australia is a powerhouse within the international mining industry. The country is the largest global producer of bauxite, iron ore and lithium and is also among the top producers of coal, aluminium, copper, gold, manganese, nickel, silver, uranium and zinc.

It's no wonder, then, that Liebherr-Australia Pty. Ltd (Liebherr-Australia) has been a mainstay of Liebherr Mining for many years. The sales and service company was first established in 1981 and today has 17 locations across both Australia and New Zealand – one of Australia's closest geographic neighbours. The company is currently

experiencing astronomical growth that's expected to continue until the end of the decade, meaning that Liebherr-Australia is ramping up its workforce, overall infrastructure and expertise in new technologies to accommodate its rapidly expanding fleet.

How will Liebherr-Australia accommodate this growth while still providing exceptional service to customers across Australia? Trent Wehr, managing director, mining, Liebherr-Australia, took the time to share his thoughts.

'Our ability to operate in some of the world's most challenging environments while maintaining high safety and environmental standards is a testament to the innovation and resilience of the sector.'

Trent Wehr
Managing director, mining, Liebherr-Australia Pty. Ltd



Australia is a global leader within the mining industry. What is it that sets the Australian mining industry apart from others round the world?

The Australian mining industry stands out on the global stage due to its unique combination of vast mineral resources, advanced technologies and a strong commitment to sustainability. Our ability to operate in some of the world's most challenging environments while maintaining high safety and environmental standards is a testament to the innovation and resilience of the sector. What truly sets us apart, however, is our focus on collaboration between industry leaders, local communities and technology partners, which drives continuous improvement and ensures the industry's long-term success.

What have been some of the biggest changes within the Australian mining industry that you've seen since you first began working with Liebherr-Australia?

When I first started with Liebherr-Australia over 15 years ago, the focus was primarily on operational efficiency and basic automation. Today, we are embracing cutting-edge technologies like artificial intelligence, automation and data analytics to drive productivity and enhance safety. One of the most notable shifts has been the industry's growing commitment to sustainability and environmental responsibility, with a stronger emphasis on reducing greenhouse gas emissions and improving energy efficiency through measures such as alternative fuels and, more recently, battery technology. The way we collaborate across sectors and innovate to solve challenges has evolved immensely, and it's exciting to see how these advancements will shape the future of mining in Australia.

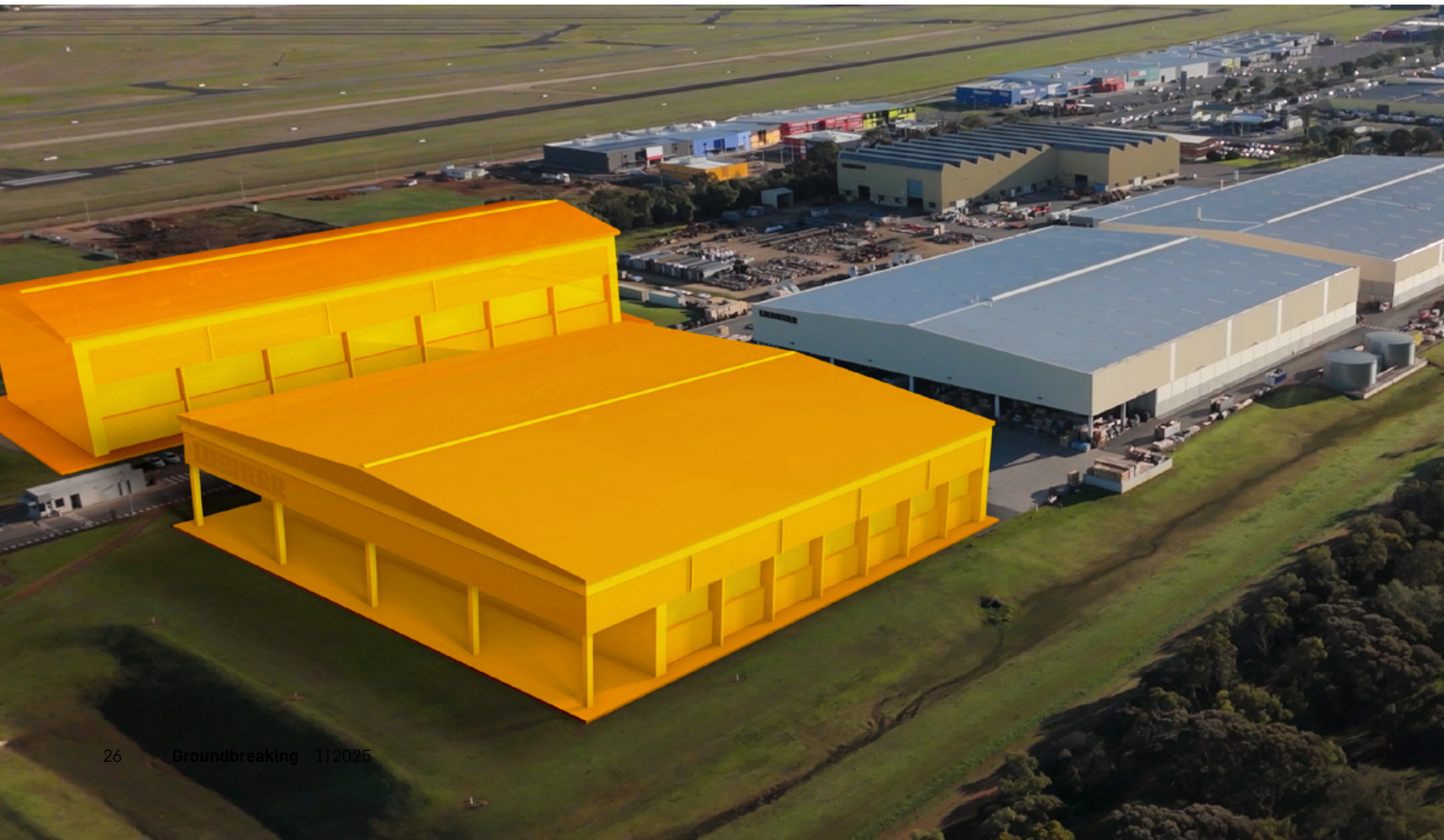
The incredible growth of Liebherr's footprint within Australia in recent years has been exciting to see! Can you describe what's been happening?

Over the past few years, we've seen not only new customers come on board but also our existing partners, like BHP and Glencore, significantly expand their fleets. This speaks to the trust they place in our equipment and services. One of the most memorable milestones has been the record-breaking deal with Fortescue, which reflects the strong demand for Liebherr's world-class machinery and our commitment to supporting customers at every stage of their operations. As we continue to grow, we remain dedicated to delivering the exceptional service and innovation that has always been at the core of Liebherr's success.



Liebherr-Australia in a nutshell

- Founded in 1981
- 1,700 employees – 1,200 of which are part of the mining product segment
- Head office in Adelaide, South Australia
- Also includes the earthmoving, mobile and crawler cranes, maritime cranes, tower cranes and components product segments



Liebherr across Australia and New Zealand



‘Customer support has always been our top priority, and we’ve built our reputation on delivering not just high-quality equipment but also unparalleled service.’

Trent Wehr

Managing director, mining, Liebherr-Australia Pty. Ltd

How has this remarkable growth impacted Liebherr-Australia's day-to-day operations and will there be more changes to come in the future?

Liebherr-Australia's growth over the past few years has had a significant impact on our daily work. As demand for our products and services continues to rise, we've adapted by enhancing our operational capabilities and the skillset of our workforce to ensure we can meet these evolving needs. For example, we're moving towards 24/7 operations in our warehouses to improve efficiency and reduce lead times for our customers. Additionally, we're actively expanding our facilities and investing in new technologies to ensure we have the infrastructure to support future growth. These changes are just the beginning. As we continue to grow, we will adapt and innovate to stay ahead of the curve and continue providing the exceptional service our customers rely on.

With such a high number of new machine deliveries into the Australian market in the next few years, how will Liebherr-Australia continue to provide exceptional support to both its new and existing customer base?

Liebherr-Australia remains deeply committed to providing exceptional support to both our new and existing customers. Customer support has always been our top priority, and we've built our reputation on delivering not just high-quality equipment but also unparalleled service. The positive feedback we consistently receive from our customers is a testament to this commitment. As we continue to expand our fleet and presence across the country, we will ensure that our support infrastructure – from parts supply to maintenance and training – evolves alongside the growing demands of the industry, so our customers can be confident in us every step of the way.

almost double in the coming years, and we are particularly focused on the future by more than tripling the number of mining apprentices we intend to bring on board by 2030. This is part of our long-term strategy to not only support our growing customer base but also to invest in the next generation of skilled professionals who will help drive the industry forward. Our commitment to local talent, job creation and evolving the skillset of our existing workforce will ensure we can continue to deliver the exceptional service Liebherr is renowned for.

There are a range of new and exciting technologies that will be coming to Liebherr-Australia in the next few years, such as the autonomous, battery-electric T 264 as well as Liebherr's Autonomous Haulage Solution, Fleet Management System and Machine Guidance System. How is Liebherr-Australia ensuring that its current and future workforce has the capacity to handle these new innovations?

We know that ensuring our workforce is fully equipped and trained to handle these innovations and changes will be key to their, and our, success. That's why we're focused on bringing in new talent with expertise in these areas while also upskilling our current employees to work with these advanced systems. Additionally, we'll be offering comprehensive training programs to ensure our teams are not only capable of operating these new technologies but are also empowered to lead the industry forward. This ongoing investment in our people will ensure Liebherr-Australia continues to deliver the highest level of service and support for our customers as we enter this exciting new chapter.

'I encourage the mining industry in Australia to stay tuned and watch Liebherr closely.'

Trent Wehr

Managing director, mining, Liebherr-Australia Pty. Ltd

Handling this influx of machines will also require a substantial increase in the number of people needed to support them. Is there a plan to expand Liebherr-Australia's workforce?

With the significant increase in machines being deployed across mine sites in Australia, it's clear that we'll need a substantial expansion of our workforce to support them. We've already put a comprehensive plan in place to ensure we can meet this demand. Our Australian workforce is set to



This growing fleet will require a significant increase in parts from Liebherr-Australia. How is Liebherr-Australia shoring up its supply chain to ensure that these machines receive parts they need when they need them?

As we deploy a substantial number of new machines across Australia, it's clear that the demand for parts and components over their service lives will be huge. We're fully committed to ensuring these machines receive the parts they need, when they need them. To meet this demand, we are doubling our components and parts inventory, streamlining our internal processes and advancing the sophistication of our systems to meet this demand. Our strong cooperation with Liebherr's mining factories in Europe and the USA, as well as the wider Liebherr Group, ensures a seamless supply chain that can respond rapidly to customer needs. We're also working closely with local suppliers in some instances to enhance our service capabilities and reduce lead times. This integrated approach, fuelled by teamwork and collaboration, ensures that we can support our customers with the reliability and efficiency they've come to expect from Liebherr, no matter how many machines are in operation across Australia.

Is there anything else you would like to highlight about the Australian mining industry or Liebherr-Australia?

The next few years are set to be incredibly exciting for Liebherr-Australia and the broader mining industry. As we continue our exponential growth across all areas of our mining business – from expanding our fleet to embracing new technologies and enhancing our support capabilities – there's a lot to look forward to. I encourage the mining industry in Australia to stay tuned and watch Liebherr closely. We are committed to delivering exceptional value and service, and with our continued investment in people, technology and infrastructure, we'll be leading the way through these transformative times.

As a family-owned company, Liebherr values long-term relationships, not only with our customers but with our employees. We are dedicated to creating a work environment where our team members feel supported, valued and motivated to grow alongside the company. We want our employees to stay with us and experience our exciting future growth first-hand, knowing they will be a vital part of Liebherr's legacy and ongoing success.



Fun fact:

Aussies do not typically use the word 'shrimp'. The infamous line, 'throw another shrimp on the barbie', came from a tourism advertisement in the 1980s designed to encourage people from the USA to travel to Australia.



Australian slang dictionary

Australian, or Aussie, slang is renowned around the world. Here's a brief introduction to the fantastical world of Australian English:

Arvo – afternoon
Brekky – breakfast
Digger – excavator or a war veteran
Fair dinkum – genuine, true
Hard yakka – hard work
Flat out – busy
Smoko – a short break at work
Sunnies – sunglasses
Tradie – tradesperson
Ute – utility vehicle, pickup truck
Woop woop – the name given to any small town located a long distance from large cities or towns

A partner for the long term

One of our greatest joys is to celebrate our customers' wins right alongside them. So, when Thiess reached the incredible milestone of 90 years as a company in 2024, our colleagues from Liebherr-Australia Pty. Ltd (Liebherr-Australia) were more than happy to help them mark the occasion! The fabrication team at Liebherr-Australia's Adelaide branch installed a special bucket, painted in Thiess blue and emblazoned with 'Thiess90', onto one of the R 9600 excavators delivered to Thiess at Mt Arthur South in the Upper Hunter Valley region of New South Wales.

Thiess and Liebherr have worked together for more than 30 years and in that time the two companies have achieved some impressive goals together. Like moving 1.64 million bank cubic metres (BCM) of material at a mine site in New South Wales!

**[Click here to see the Thiess90 R 9600
be built, right before your eyes!](#)**





Growing and expanding with Liebherr Indonesia

As our customer base grows and changes, so do we! With a growing fleet of machines in Indonesia, Liebherr Indonesia has built a new remanufacturing centre to accommodate the needs of its expanding customer base.

In February 2025, PT. Liebherr Indonesia Perkasa (Liebherr Indonesia) inaugurated its new remanufacturing centre at its Balikpapan location. Liebherr executives and members of the Group's administrative board as well as Liebherr Indonesia's business partners and customers travelled to the site to mark this momentous event.

'It was wonderful to see so many people come to celebrate this important milestone with us,' says Christian Bombenger, managing director, sales and operations, Liebherr Indonesia. 'This remanufacturing centre represents Liebherr's bright future in the Indonesian mining industry.'

The new centre adds an additional 3,800 square metres at the Balikpapan site, which includes 3 storeys of office space and 2,650 square metres of workshop space. The extra room will allow Liebherr Indonesia's remanufacturing team to handle a wider range of parts with greater efficiency and precision, including Liebherr's internal combustion engines, gearboxes and hydraulic cylinders. Liebherr Indonesia had been operating a remanufacturing facility in Balikpapan before the opening of this new facility; however, the new centre will incorporate the latest in remanufacturing technology and processes and will therefore expand Liebherr Indonesia's capabilities.





Overcoming challenges

While Liebherr Indonesia was building its brand-new remanufacturing centre in the East Kalimantan province, the Indonesian Government was in the middle of constructing its new capital city, Nusantara, in the very same region. As Balikpapan is the closest city to Nusantara, local resources – especially building materials – were in high demand.

‘Despite the challenges, the project was completed on time, ready to serve as a model for future initiatives in Balikpapan,’ says Wisnu Aji, general affairs and facilities manager, Liebherr Indonesia.

Liebherr Indonesia leading the way in Balikpapan

Innovation thinking, a focus on sustainability and meticulous attention to detail went into the building of this new centre – all of which made this particular project unique within the Balikpapan region. Each and every detail was carefully considered from material selection all the way through to waste treatment and disposal. This approach is what ensured that the project not only met all of Liebherr’s requirements but could also handle the intense rainfall in the region – all while meeting high standards of environmental care and sustainability.

Not only can this new centre withstand the rush of water during severe rainstorms, but it is capable of collecting up to 270,000 litres of rainwater, which is treated and then used for drinking purposes.

‘This project represents a seamless blend of thoughtful design, sustainability and collaboration,’ says Aji. ‘From the initial planning stages in 2018 to its completion in 2024, every aspect has been carefully considered, from materials selection to waste management.’

Christian Bombenger, director of Liebherr Indonesia, is excited to see what this new remanufacturing centre means for Liebherr within the Indonesian market in the coming years.

‘The future of our new facility marks an important milestone in Liebherr’s journey in Indonesia. As we expand and strengthen our presence, we are committed to driving innovation, creating value for our partners and supporting sustainable growth in this dynamic market,’ he says.

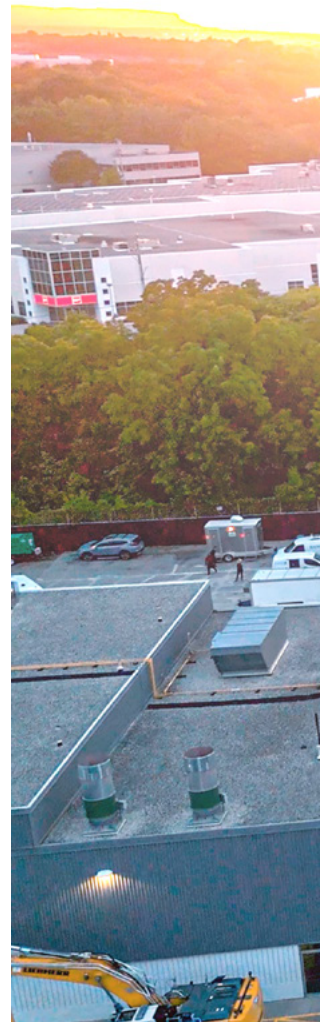
50 years of moving forward with Liebherr-Canada

In July 2024, Liebherr-Canada Ltd. (Liebherr Canada) marked its 50th anniversary with a memorable two-day celebration hosted at the company's branch in Burlington, Ontario. The event began with an evening gathering for clients and business partners, followed the next day by a family day for employees and their loved ones. Members of Liebherr's administrative board also attended the festivities to commemorate this significant achievement.

Reflecting on the company's journey and future, Tom Juric, managing director, Liebherr-Canada, shares, 'The next 50 years hold immense potential and prosperity for Liebherr-Canada. We see a strong and bright future across the country. Here's to another 50 years of moving forward together.'

'Canada's history reflects the pioneering entrepreneurial characteristics of the Liebherr Group,' affirms Paul Robson, managing director, Liebherr-Canada.

Liebherr-Canada's story began in 1973 in a warehouse in Mississauga, Ontario, where it originally operated as a branch of Liebherr-America that focused on hydraulic excavator sales and service. Over the past five decades, the company has evolved into a diversified sales and service leader, representing nearly every product segment of the Liebherr Group. Today, Liebherr-Canada operates from 11 primary locations across the country and employs over 500 hard-working individuals.



'The next 50 years hold immense potential and prosperity for Liebherr-Canada. We see a strong and bright future across the country.'

Tom Juric
Managing director, Liebherr-Canada Ltd.





Liebherr Mining around the world

The Liebherr Mining team is made up of over 4,400 hard-working and talented individuals who go above and beyond for our customers all over the world. Let us introduce you to just two of them and the incredible work they do every day.



Samuel Allan Abban

When Samuel started working with Liebherr-Ghana Ltd. (Liebherr-Ghana) back in 2005, he was only expecting to stay for a year, not nearly two decades! Back then, Samuel stepped into the fascinating world of service, maintenance and repair at the branch in Accra, Ghana's capital city.

Building a service station from the ground up

Three years after joining Liebherr-Ghana, Samuel was offered the chance to help set up a service station for Liebherr mining equipment in Ahafo, in the south-west of the country. He knew that the living and working conditions in the area would be challenging – the infrastructure providing the local population with a reliable supply of water and electricity was only just starting to develop. Coming to terms with these living conditions was therefore a 'huge effort' and he is thankful that his wife made the journey with him all those years ago.

'I'm still very grateful to her for that today,' he says. Samuel is every bit the family man. Those closest to the 43-year-old's heart are his wife and three children – two girls aged 10 and 13 and a boy aged 15. Right after that comes his Liebherr family.

In Ahafo, Samuel helped to establish a comprehensive, modern parts service and maintenance structure that has since evolved into the 12-strong warehouse and field service team that he leads today. Samuel and his team work with the service department to provide technical and warehouse support for Liebherr machines in the Ghanaian open-pit mines.

Unfortunately, amidst his incredible success, Samuel experienced personal tragedy in 2018.

'My boss died unexpectedly. He had always encouraged and supported me. His death has left a huge void, but I'm still always reminded of his exemplary focus on the customer,' he says.

A lifelong learner and community supporter

Education is of particular importance for Samuel. He graduated from Takoradi Polytechnic, one of ten technical colleges in Ghana, in 2003. Then, with the support of Liebherr, he went on to study in Wales at the University of Glamorgan, for a master's degree. He also achieved the MCIPS (Member of the Chartered Institute of Procurement and Supply) qualification from CIPS, UK.

'You must never stop being curious and expanding your knowledge,' he says with conviction.

He is also involved in the Liebherr Scholarship Excellence Award. In partnership with the non-profit Newmont Ahafo Development Foundation (NADeF), Liebherr provides scholarships to particularly enthusiastic and talented science and maths students within Ghanaian mining communities. Since the program launched 11 years ago, it has supported 15 young professionals in the area of the mines' operations, 40 % of whom have been women.

'Ghana is clearly moving forward,' Samuel says. 'Liebherr is leading the way here with its pioneering spirit and by setting a good example. It's great. I'm proud and pleased to be a part of it,' he says.

Lionel Oberhauser

Lionel Oberhauser is the manager of the testing department at our mining excavator facility in Colmar, France. It's his job to match each job that comes across his desk to a member of his highly skilled team. The testing department uses its extensive product knowledge to define and fine-tune the parameters of an excavator prototype to ensure that the machine functions as the designers expect and is as productive and efficient as possible. They are also responsible for checking that components within subsystems, such as the cooling system, have been installed correctly.

The perfect fit

Lionel has been part of Liebherr Mining for nearly 14 years! He worked as a test engineer in the testing department for eight years before becoming manager for the same team in 2019.

'Applying for a job with Liebherr Mining was the best career decision I've made so far!' he enthuses.

The nature of the role was a perfect fit for Lionel; it allowed him to mix the theory he'd learned throughout his mechanical engineering studies with the practical skills he gained working as a structural design engineer for a company that manufactured car-carrying trucks. Plus, the work itself – overseeing the testing, validation and

fine-tuning of Liebherr's huge mining excavators – was a multidisciplinary and complex challenge that he thoroughly enjoyed when he first started and still enjoys to this day. 'Although my title has changed, my job still involves handling test engineering tasks about 40 % of the time, which I love as this kind of job opportunity is rare,' Lionel says.

The importance of teamwork

Having a team that he can rely on is a huge part of why Lionel enjoys his work. During one particularly challenging period, Lionel had to work out how his four testing engineers could manage the validation of seven different machines all at the same time. This was all while members of his team needed to make multiple trips around the world, some of which took them as far away as Australia and Indonesia! This not only represented technical, strategic and test equipment management challenges but also challenges in diplomacy.

'In our work, we're facing the customer. We represent the image and quality of Liebherr Mining products both inside and outside the factory and it can be a lot of pressure,' says Lionel. 'But because the members of our group are motivated, trained and committed, we were able to navigate our way through this intense period. We know we can count on each other. It's priceless.'



30 years of trucking along in Newport News, USA

2025 is a historic year for our truck production facility, Liebherr Mining Equipment Newport News Co.: it's the factory's 30th anniversary! To celebrate this momentous occasion, come with us as we explore the past, present and future of Liebherr in Newport News, Virginia, USA!

Liebherr's foray into mining truck production began in 1995, when the Group acquired Wiseda Ltd. – a North American haul truck manufacturer based in Kansas. At the time, Wiseda was manufacturing two trucks that would eventually become part of Liebherr's early mining truck portfolio. There was the KL-2420, a 195-tonne

(215-ton) haul truck that would become the Liebherr T 252 in 1998. And then there was the KL-2450 – the world's first two-axle 217-tonne (240 ton), diesel-electric haul truck. This truck was renamed to the T 262 not long after the acquisition. The acquisition of Wiseda, as well as these two trucks, marked the beginning of a

new era of Liebherr Mining as we were now able to offer customers solutions to meet their haulage needs as well as their loading and dozing requirements.

For the first twelve months after the acquisition, Liebherr worked from the previous Wiseda facilities in Kansas. However, it wasn't long before the company decided to move operations to Newport News in Virginia, where Liebherr had been manufacturing crawler excavators for the earthmoving industry since the 1970s. The 'new' haul truck production facility was in fact an old manufacturing plant, complete with dirt floors, that had laid dormant for more than 20 years.

Jimmy Pfizenmayer, production supervisor at Liebherr Mining Equipment Newport News Co., has been with the company for 29 years – almost since the very beginning! – and remembers what it was like in those first few years.

'We only had a small team in the early days. About five people worked the assembly line and maybe ten people worked in fabrication,' he says.

The facility was officially named Liebherr Mining Equipment Newport News Co. in 1997 and it was that tiny team, toiling away on dirt floors, that laid the foundation for the enormous, state-of-the-art production facility we know today.



The evolution of Liebherr's mining trucks

Our T 264 and T 284 haul trucks can trace their lineage all the way back to the very early years of Liebherr Mining Equipment Newport News Co. The predecessor of the T 264, the T 262, was actually one of the very first trucks that we offered after acquiring Wiseda. The progenitor of the T 284, the T 282 C, was introduced a bit later, in 2010. However, the two trucks took two very different journeys to get to where they are today.

Transforming the T 262 into the T 264 we know today was a carefully considered process. After nearly a decade on the market, the 217-tonne capacity truck was discontinued in 2003. The T 252 followed suit not long after, and was discontinued in 2004. However, as the years went on, we were seeing growing demand in the market for a slightly larger truck with a 240-tonne payload. The first step towards having a 240-tonne capacity T 262 truck in our portfolio was to adapt the design of the T 262. We updated the frame and the gearsets and also added in the Liebherr Litronic Plus Drive System – all of which gave us a truck with a 220-tonne payload. This first iteration of the T 264 was launched in 2012. But we still hadn't given up on our ambition of having a 240-tonne truck among our haulage solutions. And so, in 2016, we completely revamped the existing T 264 to reach that coveted 240-tonne capacity. This involved redesigning the suspension and drag links, installing bigger tyres and rims, adding inboard five-calliper brakes on the casings for the new front wheels, integrating a higher horsepower engine with a larger heat rejection radiator, increasing the size of the dump body, increasing the weld geometry in the frame and axle box and changing the planetary gear ratio. Once all of these changes had been completely validated, we started producing the newly minted T 264 – with the 240-tonne payload – in 2017.

The journey from the T 282 to the T 284 of today took a bit longer, and



had a few more pitstops, than that of the T 264. The first prototype of the T 282 was built when we still worked out of Wiseda's Kansas facilities in the 1990s. We took what we learned from this first build and continued to develop the design after we'd relocated to Virginia. The design for the T 282 remained unchanged for the first few years of its life. However, based on customer and operational feedback, we started making changes to improve the performance and efficiency of this ultra-class machine. Over the years, whenever we made major updates to our trucks in the name of continuous improvement, it resulted in new generations of the same truck – even though the design of the overall truck remained the same. This happened twice in the lifespan of the T 282. The first time this happened, and the T 282 B was introduced to the world, was in 2004. The cab of the base machine was upgraded so that it had ROPS and FOPS (roll-over protective structure and falling object protective structure) integrated into its design. A few years later, in 2010, the world was introduced to the T 282 C. This time, the truck had been updated

to include the Liebherr Litronic Plus Drive System as well as a new frame, where the lower hoist pin was changed from the mechanically swinging single-shear design of the T 282 B to a double-shear casting design. The final stop on the journey was MINExpo 2012, when the T 284 was unveiled to the world. This new truck now had even more Liebherr-made parts and components integrated into the design of the 363-tonne capacity truck.

Today, our mining trucks can be found on every continent around the world in a wide range of commodities including iron ore, coal, copper and gold. Our global fleet is made up of trucks running with traditional diesel internal combustion engines, on trolley and even one that is powered by hydrogen fuel cells! And in 2025, our battery trucks will begin the validation process, with over 350 of them set to be operational before the end decade. We are also developing a next-generation Autonomous Haulage Solution and will have fleets of autonomous haul trucks operating on site in the near future!



Our mining truck manufacturing facility today

To keep up with the rising demand for our mining trucks, the Liebherr Group will invest a total of US\$72.3 million to expand the infrastructure, facilities and personnel at the Newport News factory in order to accommodate the ramping up of production.

'A lot of exciting work has already been completed here at Newport News!' exclaims Chris Guilford, general manager, facilities and maintenance, Liebherr Mining Equipment Newport News Co. 'Construction of our new coating facility finished back in May 2024, which means we can now blast and paint all of the products being built here, rather than needing to outsource. We've also been able to increase our shipping capacity by 200% thanks to the new shipping annex. And, as part of these expansions, we installed three brand new robotic welding machines, bringing us to a grand total of six, as well as a new horizontal milling machine – all of which is helping us to boost our production capacity.'

And there's even more to come! The front of the manufacturing building is set to expand by more than 1,800 square metres to give the Newport News facility the ability to produce medium-sized parts for our mining trucks like side frames and upper and lower front crosses. The expansion will include a plate preparation system along with a robotic load and unload plasma cutting table.

'Expanding the factory in this way will ensure we have the capacity and resources to deliver all 360 trucks to Fortescue by the end of the decade while also supporting all of our new and existing customers,' adds Guilford.

Adapting to change

'The progress and change that I see happening is invigorating. In my almost 30 years here, I've seen the Newport News facility move from building only small parts with a handful of people to what it is now,' says Pfizenmayer. 'I have seen a lot of people come and go but the people that stay, they stay for a long time because they see the potential and growth of the company.'

Almost two-thirds of my first shift employees have been here for more than twenty years! And now, both my son and son-in-law are working here and learning the business.'

With so many changes on the cards for Liebherr Mining Equipment Newport News Co., it's important that we support our team in the factory by providing comprehensive training in all of the new processes and procedures. That's why we've expanded the training department at the factory to handle the influx of new people. Plus, our apprenticeship program at the factory is still going strong. The fifth class of this two-year program graduated in October 2024!

Looking ahead

The mining trucks will continue to evolve and get better through the development of new technology. We aim to find different ways to meet market demands, lower customers' costs and increase productivity with our haulage solutions. One such avenue is to reduce the number of maintenance activities each truck

needs when it's on site. The engineering team is currently looking into ways to make the structures within the trucks lighter and more durable so that they not only need less maintenance during their lifetime but also provide greater efficiency.

Alternative drives and powertrains are also an enormous focus for the future. The team is investigating new and emerging battery technologies that are faster charging, have a longer service life, are more productive and more cost-effective than those currently available. And because of our powertrain-agnostic approach to

mining equipment, as well as our modular design philosophy, we will be able to quickly adapt our trucks to these new technologies.

Then, of course, there are more conceptual projects that investigate what the future of material haulage could look like. Take the S1 Vision, for example. This is a concept based on the radical idea of stripping a truck all the way down to its most basic components and leaving only what's necessary for moving material from one place to another. While this is just a concept at this stage, it's ideas like this that highlight our excitement

about the future of what's possible for our haulage solutions – and the production facility that builds them – moving forward.

'With such an enormous increase in Liebherr's truck fleet planned between now and 2030, as well as all the new technology coming our way, Liebherr Mining Equipment Newport News Co is entering an incredibly exciting era of its history,' says Joshua Brown, general manager, product engineering, Liebherr Mining Equipment Newport News Co. 'We are unbelievably excited to see what the next 30 years will bring.'

'Liebherr Mining Equipment Newport News Co. is entering an incredibly exciting era of its history. We are unbelievably excited to see what the next 30 years will bring.'

Joshua Brown

General manager, product engineering,
Liebherr Mining Equipment Newport News Co.



Our mining solutions in action all around the world

Our mining solutions in action all around the world

Not an ordinary partnership



Liebherr and Monnis Group have a unique relationship. Monnis is not only a Liebherr customer but also a Liebherr equipment dealer and has been for more than 20 years. In that time the two companies have supplied Mongolian mining and construction companies with approximately 500 Liebherr machines!

In the early 2000s, major deposits of coal and gold-copper ore were discovered in Mongolia, leading to an increased interest in mining projects in the region. At this time, Monnis was primarily engaged in gold mining and in the automotive industry as an official distributor for Nissan Motors. Recognising the potential for growth that the mining boom presented, Monnis' owners foresaw an opportunity to establish themselves as a mining equipment and service provider. However, Monnis didn't want to supply Mongolian miners with any run-of-the-mill equipment – they wanted to be sure companies had access to machinery with a reputation for reliability and efficiency.

The early days

The partnership between the two companies began with a tour of Liebherr's European factories, organised by the then Asia Director of Liebherr-Export AG. The tour included comprehensive tours of Liebherr's production facilities in Colmar, France, and Kirchdorf, Germany, so that the Monnis executive team could experience Liebherr's attention to detail and stringent quality assurance practices first-hand. It was during this time that the foundation for the relationship between the two companies was laid; a relationship that has remained close and friendly to this day.



This steadfast partnership served both companies during the, sometimes challenging, early years of establishing a new brand of equipment in a burgeoning market. One of the most memorable – and, in retrospect, somewhat amusing – moments from this time came about when Monnis was expected to deliver Mongolia's first Liebherr electric excavator, the R 994 E, to Erdenet Mining Corporation in 2005. Assembling one of these machines requires a 100-tonne crane to handle all of the heavy lifting. Unfortunately, there wasn't a single crane that fit this description in all of Mongolia.

So, in order to overcome the problem, Monnis purchased an LTM 1100-5.3 100-tonne mobile crane from Liebherr to ensure the R 994 E was assembled and delivered to Erdenet Mining Corporation on time.

In the following years, as Monnis' business began to grow and expand, it became more and more apparent that the company needed a branch that was central to its client base. Thus, in 2011, the company opened its Gobi branch, which is close to both Tavan Tolgoi and Ukhua Khudag mines – both of which are part of one of the world's largest coking and thermal coal deposits. Once the Gobi branch had

opened, mines working with Liebherr equipment had fast and reliable access to Liebherr spare parts and OEM-trained technicians. This came in handy in 2016 when Monnis extended its Liebherr product offerings to include mining trucks and dozers due to the significant growth of Mongolia's mining exports at that time.

Today, Monnis is one of the largest companies within Mongolia and works across a wide range of industries, such as aviation, automotive, energy, property and infrastructure. The company has won countless awards for business excellence – both for its parent company and for each of its 16 subsidiaries – and is supported by a dedicated team of more than 1,500 personnel working across all of Mongolia.

'Despite the logistical, environmental and regulatory challenges of the Mongolian mining market, there is immense potential for growth,' explains Bertrand Bedo, regional sales manager, Liebherr-Mining Equipment Colmar SAS. 'By addressing these challenges with innovative solutions, Liebherr and Monnis have positioned themselves as key players in the mining market with promising returns and strategic importance.'

Monnis and the Mongolian mining industry

Monnis supports its customers within the mining sector in a number of different ways. For customers wanting to use Liebherr equipment on their own sites or within their own businesses, customers can purchase Liebherr equipment directly from Monnis as the company is the official distributor for the Liebherr Group within Mongolia. Monnis takes the orders from its customers and then imports the machines directly from the Liebherr Group. Through Monnis, businesses within Mongolia not only have access to Liebherr's entire range of mining trucks, excavators and dozers but also the Group's cranes and construction equipment. The company has supplied Liebherr mining equipment to 11 customers across 9 mine sites throughout Mongolia. Most recently, Monnis has supplied a total of 17 Liebherr mining machines – a mixture of excavators and dozers – to its long-term customer Erdenes Tavan Tolgoi, the largest coal exporter in Mongolia.

'The reliability and efficiency of the Liebherr machines is very satisfying,' says the mine master of Erdenes Tavan Tolgoi.

And it's not just management that holds this view of Liebherr machines – so do the people in the operator's chair!

'We hope that our company will purchase more of these machines. They are very reliable and operator friendly,' says an R 9600 operator.

Another recent success for Monnis was the delivery of two R 9350 E electric excavators to the largest copper exporter in Mongolia. Together, both of these recent successes propelled Mongolia to Liebherr Mining's third-largest market behind Australia and Indonesia in 2024.

Monnis is also a mining service provider in its own right and has its own fleet of 32 Liebherr machines – including excavators, mobile and crawler cranes, off-highway trucks, crawler dozers and wheel loaders – that the company uses in its mining contracts all over Mongolia. At present, Monnis currently provides its mining services to some of the largest mining companies in Mongolia, such as Erdenes Tavan Tolgoi, and has made significant contributions to Mongolia's coal exports while also supporting Mongolia's copper and gold production.





More than machines

To support its fleet of Liebherr machines working throughout Mongolia, Monnis also supplies genuine Liebherr parts and aftersales support. Regardless of whether customers buy Liebherr equipment from Monnis in its capacity as a Liebherr dealer or work with the company as a mining contractor using Liebherr equipment, Monnis provides crucial aftersales support for all Liebherr machines in the country.

Ensuring its customers have timely access to genuine Liebherr spare parts means leveraging the global Liebherr network as well as the resources available closer to home. Monnis liaises with Liebherr's factories all around the world to make sure that whichever part a customer may need at any given time is near to hand. In addition to providing new parts, Monnis also operates a thriving remanufacturing and repair centre. The 1,350 square metre facility not only refurbishes essential machine components to as-new quality, in line with Liebherr's fastidious quality standards, but also has the resources necessary to provide comprehensive repair services for the Liebherr equipment currently hard at work throughout Mongolia.

'Our Reman program has seen significant success in both the mining and earthmoving sectors. We provide major repairs on key components and cylinders for Liebherr mining excavators and trucks as well as repairs on critical spare parts for earthmoving equipment,' says Mr Erdenebayar, maintenance service manager, Monnis. 'Feedback from our customers has been overwhelmingly positive, with many appreciating the high quality, cost-effectiveness and reliability of our reman components.'

An important part of aftersales support is making sure that personnel on the ground know how to handle Liebherr machines. As such, Liebherr provides operator and technical training to Monnis' onsite technicians.

'It's vital that Monnis can support their customers as soon as there is any kind of issue or maintenance request on site. That's why we offer training to Monnis technicians for everyday machine operation and maintenance tasks as well as in-depth technical training,' says Bedo. 'Through this comprehensive training program, Monnis is able to train its own customers in the maintenance and repair of Liebherr machines, which drastically reduces machine



downtime since the people needed for maintenance and repair are already on hand.'

Service excellence in Mongolia

But there's more to aftersales support than just knowing what to do – you have to know the best way to do it. That's why, as an official Liebherr dealer, Monnis is part of Liebherr Mining's Service Excellence Program – an internal quality assurance scheme that optimises and standardises best practices from all of Liebherr's sales and service affiliates. If one of Liebherr's branches around the world discovers a faster, more efficient or safer way of doing things, the Service Excellence team ensures this information is disseminated across all branches.

'The knowledge Monnis has gained through the Service Excellence Program has been invaluable. The results and recommendations from the audits have helped us refine and enhance our operations, not only improving our internal processes but also positively impacting the results Monnis delivers to clients. As a result, Monnis has received encouraging feedback from its customers, further reinforcing the value of this program in driving both our growth and customer satisfaction,' says Erdenebayar.

A partnership for the ages

Mr Chuluunbaatar Baz, chief executive officer and president of the Monnis Group, has worked with Liebherr for over 20 years and has seen how the relationship between these two companies has evolved over the years.

'We've enjoyed our successful partnership with the Liebherr Group for over 20 years. Looking ahead to the next 10 to 20 years, we envision that we will deepen our collaboration and introduce low and zero emission technologies into the Mongolian mining sector. Monnis Group is committed to helping ensure a cleaner environment for future generations, and the technologies Liebherr is developing with major global mining companies will play a crucial role in this mission. Monnis, alongside Liebherr, is already in discussions with Mongolia's leading mining companies about implementing these technologies, and we are confident that this collaboration will help drive significant progress toward a more sustainable and environmentally responsible future for the mining industry,' says Baz.

What it takes to succeed in Serbia

We work hard to be a long-term partner for our customers. This means not only providing top-notch mining equipment but also impeccable customer support. Thanks to our ability to deliver this complete solution, we have been able to build a successful partnership with Serbia Zijin Copper Doo Bor.

Our reputation for exceptional mining equipment and customer support is something we are incredibly proud of. In 2020, it was our stellar reputation that helped us to finalise a deal with Serbia Zijin Copper Doo Bor (Serbia Zijin Copper) for the company's first Liebherr machine. Our ability to uphold our reputation and provide the customer with incredible equipment and support is why this customer still works with us five years on, and why their Liebherr fleet is steadily expanding over time.

A brief history

Serbia Zijin Copper is part of Zijin Mining – a multinational mining company, headquartered in mainland China, that specialises in the extraction of materials like copper, gold, zinc, lithium, silver and molybdenum. In 2018, Zijin Mining acquired majority interest in a Serbian state-owned copper business called RTB Bor and renamed the company Serbia Zijin Copper Doo Bor. Thus, Serbia Zijin Copper as we know it today was born.

A short time after the acquisition, Serbia Zijin Copper found itself needing a large excavator to join the fleet at Bor Copper Complex, located in Bor, Serbia. During discussions in December 2019 Serbia Zijin Copper's top management expressed their admiration for Liebherr machines. One member of the management team had worked with Zijin Mining for nearly two decades and in that time had worked with Liebherr's smaller sized excavators from the earthmoving product segment. As such, they were familiar with the impressive quality of our products. The management team was also aware of our reputation in mainland China as a reliable service and spare parts supplier, thanks to the hard work of Liebherr (China) Co., Ltd. (Liebherr China). It was our outstanding reputation, as well as our willingness to help Serbia Zijin Copper find the perfect solution for their needs, that helped us to secure that initial deal for an R 9400 E electric excavator in 2020.

'We decided to add an R 9400 E to our fleet for a couple of important reasons,' explains Serbia Zijin Copper's management team. 'We know that Liebherr's mining equipment offers strong performance on site – especially its electric-drive solution. Several Liebherr R 9350 E

excavators have been running in China for more than 10 years and are still running now, highlighting the longevity of this equipment. And besides the machine itself, Liebherr was also able to provide an onsite service team that met our requirements, which gives us operational peace of mind.'

An increased need for decreased fuel consumption

According to recent data from the Association of Oil Companies of Serbia (UNKS), Serbia has the second-most expensive diesel in the Balkans – a group of Eastern European countries that are located, or partially located, in the Balkan Peninsula. Diesel in Serbia can cost up to 15 % more than the average price within the region. As such, with fuel such an enormous operational expense, many companies, like Serbia Zijin Copper, are opting to use electric excavators in their mining operations. With our 40 years of experience in the development, manufacture and support of electric excavators, we are known to have high-quality, reliable electric loading solutions for the mining industry. Serbia Zijin Copper experienced this for themselves in 2020 and noted the incredible productivity of the machine on site. They were so impressed with the machine's performance that after just two months of operating our R 9400 E, the company ordered a second unit to join the fleet at the Bor Copper Complex.

'The R 9400 E's performance exceeded our expectations. It's fast, smooth and operators feel it's easier to control – and so are more willing to operate it – than some other excavators of the same size. And if something happens on site, Liebherr's service team always helps to solve the issue quickly, which really helps us to easily meet our annual target,' says Serbia Zijin Copper management.

A growing Liebherr fleet for Serbia Zijin Copper

Serbia Zijin Copper's Liebherr fleet has continued to expand with the introduction of an R 9350 E in 2021. The company's most recent acquisition is our latest excavator, the 250-tonne R 9300. Armin Natter, Liebherr China's general manager of earthmoving and mining equipment, travelled to the Bor Copper Complex to attend the handover ceremony in December 2024.



'The onsite service team works really hard. They will come to check our Liebherr machines and solve any problems immediately, no matter whether it's a harsh winter midnight or during a hot summer noon time.'

Management team
Serbia Zijin Copper Doo Bor

As the mine continues to develop, Serbia Zijin Copper found that it needed a smaller sized excavator with the manoeuvrability to navigate the deepest, narrowest parts of the pit. The R 9300's size, proven performance, reduced fuel consumption and increased service life made it the perfect fit for the Bor Copper Complex.

'While the R 9300 will be supplied with a diesel internal combustion engine, this excavator will still help Serbia Zijin Copper reduce its fuel consumption on site while also helping to improve their onsite productivity,' says Natter. 'As well as this, the R 9300 is equipped with our latest technologies that makes it compatible with future product requirements such as automation and zero emission options.'

Customised, comprehensive service

To ensure that Serbia Zijin Copper always gets the most out of its Liebherr fleet, comprehensive customer support is of the utmost importance. As a Chinese-based company operating outside of China, Serbia Zijin Copper has specific needs when it comes to its onsite technical support. They need to ensure that staff on the ground speak a mixture of the local language and Chinese. Meeting this requirement requires considerable cooperation between Liebherr-Export AG (Liebherr-Export), Liebherr China and Liebherr China's local service agent.

'Our local service agent is responsible for daily machine inspection and troubleshooting on site,' explains Natter. 'The Liebherr China service team regularly visits the jobsite to provide technical training and is on hand to solve any major problems that may arise, while Liebherr-Export and its local dealer are responsible for major components storage to ensure Serbia Zijin Copper receives what they need in as short a span of time as possible.'

Serbia Zijin Copper's management team has expressed their admiration of the service received on site.

'The onsite service team works really hard. They will come to check our Liebherr machines and solve any problems immediately, no matter whether it's a harsh winter midnight or during a hot summer noon time. The availability of the R 9400 E as well as our R 9350 E availability is always over 92 %, working more time than any other machines.'

A bright future ahead

With such a solid foundation of trust and reliability built between Serbia Zijin Copper and Liebherr, we're excited to see what the future holds for this exciting partnership!

'Liebherr is thrilled to be a strategic partner for Zijin Mining and to support the fast growth of its global business with tailor-made product and service plans, like the one in place for Serbia Zijin Copper,' enthuses Natter.

Better than ever

In May 2024, Liebherr-Australia Pty. Ltd (Liebherr-Australia) delivered five PR 776 dozers to its new customer, Western Plant Hire – a contractor based in Western Australia that works in a range of industries like mining, construction and civil works. While this is the first time Western Plant Hire has worked with these machines, its parent company, MacKellar Group, was the first Australian company to put these dozers to work after their market release in 2016.

MacKellar has worked directly with the local Liebherr-Australia customer support teams and Liebherr-Werk Telfs, Liebherr's dozer factory in Austria, and has provided invaluable feedback to assist with the development of the PR 776. This dozer is now an international success, providing its best-in-class efficiency and impressively low fuel consumption in a range of applications and commodities around the world.

[Click here to read more!](#)





Reliable, high-performing machines for today and tomorrow

The R 9400 – with its reputation for reliability and incredible productivity as well as its ability to be repowered from an internal combustion engine to an electric powertrain – was a perfect fit for Norsk Hydro's Brazilian operations.

Norsk Hydro has relied on Liebherr excavators for its Brazilian operations for nearly 20 years; ever since Liebherr Brasil LTDA (Liebherr Brasil) delivered three R 994 excavators in 2006 to help develop Mineração Paragominas, Norsk Hydro's bauxite mine in the Brazilian state of Pará. A few years later, when production had started to ramp up, Norsk Hydro added five R 9250s to its fleet in order to continue meeting its production targets.

'We've worked alongside Norsk Hydro at Mineração Paragominas for nearly twenty years,' says Jair Machado, divisional commercial manager, mining equipment, Liebherr Brasil. 'Together, we have learned to navigate the changing needs of the mine and meet the ever-evolving demands of production levels, maintenance and safety requirements and ore price oscillations. When our customers need something new or different from us because their circumstances have changed, we just say "yes" and adapt ourselves to meet their needs.'

Mineração Paragominas produces 11.4 million tonnes of bauxite ore per year. As such, having powerful equipment on site to handle the sheer volume of material is crucial.

For many years, Norsk Hydro has enjoyed the durability, reliability and productivity of Liebherr's excavators. And so, when the company decided to introduce larger excavators to its Brazilian fleet, it chose to invest in two R 9400s – Liebherr's 400-tonne class machine with a reputation for reliability. These brand-new R 9400s are the largest Liebherr excavators currently at work in Brazil.

Preparing for an electric future

There was considerable collaboration between Liebherr Brasil's sales team and Norsk Hydro's operations manager to ensure that the customer walked away with the best possible option for their specific needs. In the end, while the R 9400's respected reputation for reliability and all of its technical features contributed to Norsk Hydro's purchasing of this model, there was one thing in particular that was most important: its ability to be repowered to electric drive.

Norsk Hydro is currently working on a road map for decarbonising its operations and electrification is one of the many initiatives that the company is exploring. This means the company will need zero emission solutions for its machines in the pit, which is what makes the R 9400 a perfect fit.

'When our customers need something new or different from us because their circumstances have changed, we just say "yes" and adapt ourselves to meet their needs.'

Jair Machado

Divisional commercial manager, mining equipment, Liebherr Brasil LTDA



'We are always looking for innovations that can bring value to our customers' operations,' says Machado.

The electric conversion kit available for the R 9400 makes it possible for customers like Norsk Hydro to gain the benefits of Liebherr's excavators today while they work towards electrifying their loading fleets. These kits provide all of the parts and components necessary to transform a diesel-powered excavator to an electric-powered one. Because of Liebherr's modular approach to its large excavators, like the R 9400, these parts and components are generally the same for each customer. However, there may be some small technical variations between machines, depending on the specific build of a customer's diesel excavator and whether they opt to use Liebherr's cable reel solution on their newly repowered machine.

Liebherr's modular approach to its large excavators also helps to simplify the repowering process. With up to 70 % parts commonality between Liebherr's diesel and electric-drive excavators, the repower process can be completed in a matter of weeks.

'We're excited about what the future holds for our relationship with Norsk Hydro, especially as the company embarks on its decarbonisation journey,' Machado enthuses.



Pushing forward in the Powder River Basin

In a region as resource rich as the Powder River Basin in the north-west of the USA, operating as efficiently as possible is paramount. That's why Eagle Specialty Materials – a Wyoming-based mining services provider and owner-operator of Belle Ayr Mine – chose two PR 776 dozers to provide essential dozing support on site.

When production began at Belle Ayr Mine in 1972, it became the very first modern coal mine in the Powder River Basin – a geographic basin that spans two states, Wyoming and Montana, and is known for its extensive coal deposits. More than 40 % of all coal produced in the USA comes from the Powder River Basin, which has made Wyoming the top coal-producing state in the country since 1988.

Belle Ayr Mine produces several million tonnes of coal each year and so needs reliable, high-performing machines on site that can meet its high production targets. So, when the time came to replace some of the older machines at

the mine, Eagle Specialty Materials chose two PR 776 dozers. What made these 70-tonne machines a perfect fit for the company was the dependable performance of the dozers' Tier 4 engines – especially in cold weather conditions. Winters in the region are long, windy and freezing with minimum temperatures ranging from -12 °C to -15 °C throughout the season. As such, it's vital that the machines used on site can thrive in such a climate. And with the PR 776's proven experience in climates with -49 °C temperatures, the dozer was a simple choice for Eagle Specialty Minerals, and one that's been appreciated by the operators!





‘Our operators have uniformly reported experiencing less fatigue over the course of our 12-hour shifts and often point to the reduced cab noise they experience from the PR 776 dozers. They also appreciate the improved sight lines, which assist with performance and situational awareness,’ says Jordan Hoff, mine manager, Eagle Specialty Materials. ‘What we have seen in practice from the PR 776s is performance and power that not just competes with but outperforms other dozers in the 70-tonne class.’

Powerful partners on site

The dynamic dozing duo has been instrumental at Belle Ayr Mine for handling overburden dumps, creating ramps and supporting road maintenance. With rugged internal combustion engines designed to handle tough mining applications and hydrostatic travel drives automatically adjusting working speed to suit load conditions, the PR 776s not only make operating easier but also reduce fuel consumption. All while overcoming weather challenges, unpredictable ground conditions and production swings.

‘Liebherr has achieved notable success with the PR 776 dozer, which has proven to be highly effective in demanding mining environments such as those found at high altitudes and in cold weather regions like the Powder River Basin. This hydrostatically powered 70-tonne dozer is praised for its fuel efficiency, productivity, reliability and operator comfort, making it a strong competitor in such environments across the USA market,’ says Cory Wasson, regional sales manager, mining, Liebherr USA, Co.

Providing customers with powerful products that exceed expectations is incredibly important to Liebherr, and to Liebherr USA. However, developing robust and long-term relationships with customers like Eagle Specialty Materials is just as important.

‘Because Liebherr focuses on communication, providing solutions and aftersales support, we excel in building strong customer relationships. Our dedication to each of these things has, in turn, strengthened our position as a trusted mining partner for Eagle Specialty Materials,’ continues Wasson.

Blowing minds in Indonesia

PT Karunia Armada Indonesia (Karunia) has been working with our newest excavator, the R 9300, since 2022. The company received a pre-series unit in September of that year to help meet production targets at Tabang mine. Karunia was so impressed with the increased production and reduced fuel consumption of the new 250-tonne excavator that they placed an order for four more less than six months after receiving the pre-series machine. And then, with the machines continuing to wow Karunia for two years with their incredible onsite performance, the company ordered another two in late 2024!

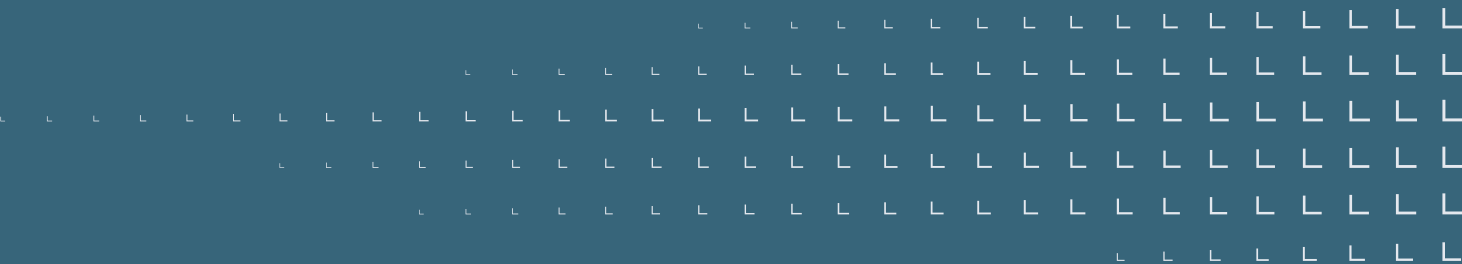
If that's not a glowing endorsement of this powerful loading solution, we don't know what is!





Product spotlight

An in-depth exploration of Liebherr
Mining solutions



Technical Spotlight: Liebherr Power Rail

Liebherr offers a wide array of products, technologies and services that can support customers' decarbonisation journeys. One such solution is Liebherr Power Rail – a class-agnostic dynamic power transfer system that can be used with both battery-electric and diesel-electric Liebherr trucks.

It's not possible for every single mine site around the world to approach the reduction of greenhouse gas emissions the same way. There's mine commodity, layout and geology to consider as well as the price and availability of diesel, electricity and alternative fuels such as ammonia, hydrogen and hydrotreated vegetable oil in each country. That's why our approach to decarbonising our mining equipment is both energy and powertrain agnostic: no matter which pathway to zero emissions our customers choose to take, we'll have a solution for them. A solution like Liebherr Power Rail: a dynamic power transfer concept that's class agnostic, is based on our proven trolley bar technology and can work with our existing diesel-electric and battery-electric haulage solutions as well as alternative powertrain technology such as ammonia and fuel cell.

Class-agnostic dynamic power transfer

So, what is dynamic power transfer?

It's a way of supplying electrical power to a truck while it's in motion. Traditional trolley technology supplies this power via an overhead catenary system supported by masts that stand up to 15 metres tall. The trucks on site connect to the catenary system using either a pantograph or bar connection that then passes electricity through to the truck's powertrain.

On the other hand, Liebherr Power Rail will have a current collector installed onto the side of the truck that extends out and connects with the system's current conducting rail profile.



The rail profile will be supported by precast concrete foundations and standard H-beam masts that stand 4.5 metres tall – one-third of the height of those needed for traditional trolley.

The infrastructure that will be used for the Liebherr Power Rail concept is a ready-made solution from the rail industry we've harnessed for mining operations. This is one of the factors that will make Liebherr Power Rail much faster and easier to install than traditional trolley. And while this part of the system is not unique, the current collector – which is currently in development – will be.

Innovations based on proven technology

The current collector's design is based on our proven trolley bar technology. In previous iterations, our trolley bar technology used two bars. For the Liebherr Power Rail's current collector design, we combined the two bars into a single insulated trolley bar with carbon-based sliders that will act as the point of contact between the rail and the current collector. We are working with key industry partners for the design and supply of the current collector and our engineering teams are working to integrate this new technology into our range of mining trucks.

The current collector will allow up to 2.6 metres of lateral freedom. We understand that no matter how well-kept haul roads on site are, obstacles can crop up. This lateral freedom will allow operators to avoid these obstacles while maintaining optimal levels of productivity. We can achieve this level of lateral movement because of the length of the current collector itself. The length will allow the current collector to rotate around the axis at the base of its fibreglass pole, meaning the system won't be at risk of being pulled down. When trucks need to drive off of the haul roads to avoid obstacles they're more likely to 'bounce' over the rough terrain – like driving over loose gravel in a car. The torque at the base of the pole will capture the upward force from the truck's vertical movements, preventing the impact from affecting the current collector.

When trucks need to avoid obstacles that require more clearance than the lateral freedom will allow, the current collector can disconnect and reconnect as needed. The collector will be able to do this by using a similar system to our trolley bar connector. Funnels installed at strategic locations within the system's infrastructure will guide the head of the current collector into the correct position to ensure a secure connection. The trucks will then be able to safely disconnect from the system at any point during the haul cycle with a simple flip of a switch – whether this is done manually by the operator in the cab or autonomously by one of our Assistance Systems.



Fewer components, faster results

Outside of reducing fuel consumption – and therefore greenhouse gas emissions – the biggest benefit of Liebherr Power Rail will be that it has fewer components than traditional trolley; fewer components that will be easier to install. In fact, installing the masts will be quite similar to installing streetlamp posts. With fewer components, Liebherr Power Rail will be able to be installed in a fraction of the time needed to install a catenary system – which means you'll be able to see the benefits of dynamic power transfer technology on your site much faster. Having fewer components also means that Liebherr Power Rail will be able to be more easily relocated to other locations on site. And with fewer components, Liebherr Power Rail will be a more economical option than traditional trolley.

This system will also be far less intrusive on the haul roads than traditional trolley, adding to its ability to be easily installed or relocated on site. Rather than needing up to five metres of clearance between a truck and traditional trolley system infrastructure, the masts and rail of Liebherr Power Rail will take up essentially the same amount of space as a berm.

Optimised productivity

Trucks running under Liebherr Power Rail will be able to travel at higher speeds than those not connected to a dynamic power transfer system – even when hauling a full payload uphill – which will increase the productivity of haulage fleets. However, reaching these speeds will depend on how the system is to be used. Things like the inclination of the haul road and whether the system is used for charging or propulsion will impact the speeds that vehicles can reach while connected to Liebherr Power Rail.

To further optimise productivity, Liebherr Power Rail will be compatible with our Trolley Navigation Assist system. This is a semi-autonomous system that extends and retracts the current collector so trucks are connected to Liebherr Power Rail for the longest possible time, helping you to get the maximum benefit out of the dynamic power transfer. Our Assistance Systems will ensure a constant connection between the current collector and the rail. This connection will help to minimise stress on operators by automating the connection and disconnection process, while preventing damage to the truck and to the Liebherr Power Rail system as a whole.

On top of all of this, the sliders on the current collector will be able to be easily changed from ground level without needing the specialised scaffolding or lifts required when working on pantographs in traditional trolley. The current collectors will have a 'maintenance mode' built into their logic that moves the sliders to an ergonomic height so they can be quickly changed out. This will help to minimise downtime by reducing the amount time needed to remove or service these components – which will come in handy as the sliders will be the highest wear item in the entire system as they will be in constant contact with the electrified rail.

The Liebherr Power Rail concept presents another pathway towards a decarbonised future for the mining industry and another way for us to support our customers seeking to meet their emission reduction targets. We're looking forward to seeing it in action!



What's new on the PR 776 Generation 8?

At MINExpo 2024, we unveiled the latest generation of our flagship mining dozer: the PR 776! What sets the PR 776 G8 apart from its predecessor? We can't wait to tell you!

New electronic architecture

The biggest change with the PR 776 G8 is the introduction of its new electronic architecture. Liebherr has used this technology in its earthmoving dozers for years, but this is the first time it has been implemented in our flagship mining dozer! This electronic architecture forms the basis of the PR 776 G8's electronic pilot control, which gives operators the ability to personalise their operational experience in ways that weren't possible in the previous generation.

With the electronic pilot control, operators can tailor the PR 776 G8's controls to suit their personal preferences. The working hydraulics, travel hydraulics and settings within the cab – like fan speeds, auto idle and even the display lights for night shift – can all be adjusted. In fact, the electronic pilot control allows every operator to save their personal settings as a profile on the machine, allowing them to be retrieved for each and every shift.

And thanks to the electronic pilot control, the PR 776 G8 is compatible with our Operator Assistance Systems and LiReCon, our latest teleoperations system. All of these can be installed at first fit or as retrofit options, providing customers with the flexibility to adapt machines as their requirements change.

Brand new technology

The cutting-edge Assistance Systems available for the PR 776 G8 offer operators unparalleled precision, efficiency and ease of use. There's Free Grade, which provides active blade stabilisation while fine levelling subgrades like flat surfaces, ramps and dams. Definition Grade provides automatic active position control of the blade, which comes in handy when operators are levelling ground with specific longitudinal grade and cross slope. With Auto Blade Pitch, operators can set and save three pitch positions for the blade and switch between them with just the joystick button. Liebherr Indicate displays the dozer's position at any given time and reliably warns operators should the machine reach a critical tilt position.

There are also Assistance Systems for ripper control! Auto-Lift and Auto-Stow automatically lift the rear ripper and retract the cutting angle to enhance operational convenience and efficiency. Auto-Lowering, on the other hand, automatically lowers the rear ripper to two pre-defined positions, enabling precise control and faster setup for repeated tasks.

On top of all of this, operators' preferences within these Operator Assistance Systems can be saved to personalised profiles within the systems, in the same way that their preferred settings for working



hydraulics, travel hydraulics and settings within the cab can be saved. This helps operators to work with the machine in the best, most effective way for them, while also optimising their productivity.

Streamlined maintenance and repair needs

We know that equipment durability on site is crucial for smooth, uninterrupted operations. This is why we took the opportunity to boost the durability of the dozer's undercarriage.



We partially redesigned the structural steelwork of the undercarriage and made component-specific improvements to extend the service life of the entire machine and of specific components – all while bolstering the machine's load carrying capacity.

All together, these improvements significantly increased the design life of the PR 776 G8 above that of the previous generation, while also reducing the maintenance and repair required over the dozer's lifetime.

When maintenance does take place, we wanted to make it as effortless as possible, which is why we've made the fuel and air filters much more accessible. These filters can now be accessed through the front of the dozer's bonnet, just in front of the cab.

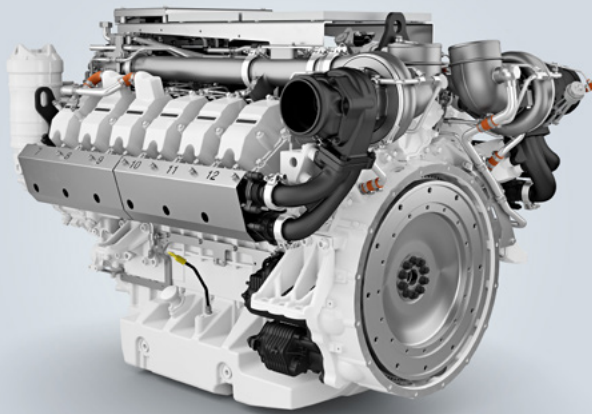
Upgraded cabin design

Reducing stress and fatigue for the hard-working individuals operating our dozers is not only beneficial for the people themselves, but also helps to boost productivity.

Because of this, the cab in the PR 776 G8 has been updated to be more ergonomic for operators in a number of different ways. We reduced the sound pressure level in the cab, provided automatic climate control as standard and increased the size of the operator's touch screen display to nine inches so everything is just that little bit easier to see.

D9512 engines: the powerhouse of Liebherr's small mining excavators

Liebherr has developed engines for decades. One of them is the D9512, a 12-cylinder internal combustion engine that powers our small excavators. We spoke to two of our D9512 experts to find out what it is that makes this engine what it is today.



The D9512 engine for mining applications is the result of close collaboration between two Liebherr production facilities: Liebherr-Mining Equipment Colmar SAS, in Colmar, France, responsible for developing and manufacturing our range of mining excavators; and Liebherr Machines Bulle SA in Bulle, Switzerland, responsible for producing diesel and gas engines, hydraulic components and splitter boxes for multiple product segments within the Liebherr Group. To better understand the D9512 engine, we spoke to Thibault Charmetant, head of engine design at Liebherr Machines Bulle SA, and Ghislain Peterschmitt, diesel engine point of contact for Liebherr-Mining Equipment Colmar SAS. Charmetant has worked with Liebherr for 11 years and leads the department that first conceived of the D9512. Peterschmitt has been part of Liebherr for 18 years and is in charge of coordinating the different design and integration evolutions of the D9512 with Liebherr Machines Bulle. With their combined almost 30 years of Liebherr experience, these two gentlemen were the perfect people to chat to about this engine!

Both Liebherr-Mining Equipment Colmar SAS and Liebherr Machines Bulle SA were involved in the development of the D9512. Can you tell us a bit about what that process was like?

Peterschmitt: Because the D9512 was set to be installed into our R 9100 and R 9150 excavators, it needed to withstand the intensities of working in a mine site. This is where the excavator expertise of the Colmar team came in handy! To be mining friendly, we know that an engine has to be able to adapt to extreme temperatures, high altitudes, elevated humidity levels and large amounts of dust. Not to mention, they also need to have a high load rate as mining equipment often runs for 23–24 hours per day and they need to be shock and vibration resistant to handle the rough terrain. So, to be sure the D9512 could do all of this reliably, day in and day out, a team made up of R&D, project management and product management personnel from Colmar defined the specifications for this engine.

Charmetant: An R&D team of over 300 employees then took these specifications and worked with the Colmar team and representatives from different sales and service companies around the world to perfect the design. Working with Liebherr's global network of sales and service companies allowed us to field test the new parts and components for the D9512. At Liebherr Machines Bulle we are responsible for ensuring the parts and components we use are right for the application they'll be working in – from first prototype all the way through to final production.

What is it about the design of the D9512 that helps it to withstand the intense conditions often seen on mine sites?

Charmetant: Developing dedicated components for different applications enables us to meet the specific durability and availability requirements of this industry. The base design for the D9512 was no different. However, a number of parts within the engine have been adapted to suit the harsh conditions of the mining industry.

The oil filter, fuel filtration system and the belt tensioner have all been bolstered with enhanced dust handling capacity; the fuel filtration system has both a prefilter and a main filter and the belt tensioner has a dust-resistant bearing. The twin-scroll turbocharger was designed to be large enough to minimise power derating, even in high temperatures and at elevated altitudes, and also has an optimised exhaust pulse delivery at low speeds for superior low-end torque and performance. All fuel pipes were engineered to prevent fire hazards in the intense heat often found at the bottom of the pit. And last, but certainly not least, the deep oil sump ensures continuous operation under all required working inclinations.

Keeping operations sustainable is a major concern for mining companies around the world. How can the D9512 help?

Peterschmitt: We have seen impressive fuel consumption figures from customers around the world that are running R 9100s or R 9150s with the D9512 engine. In Pakistan, the average fuel consumption for one of our customers' R 9100s is only 84 litres per hour, which ranks among the best for equipment of the same level. Furthermore, a customer in Indonesia that runs six R 9100 excavators on one of their sites has been thoroughly impressed with the low fuel consumption of these machines.

Charmetant: To further help with reducing fuel consumption, D9512 engines with Liebherr injection

systems are 100 % HVO (hydrotreated vegetable oil) compatible, meaning customers can run their R 9100 or R 9150 excavators on an alternative fuel today without needing to make costly amendments to the engines. We also work to ensure that customers get as long of a service life out of these engines as possible. In fact, all of the amendments we made to the base design of the D9512 to make the engine suitable for mining had the added bonus of extending its service life to 18,000 hours!

You mentioned some feedback that you have received from a customer in Indonesia. Does customer feedback ever result in changes to the D9512's design?

Peterschmitt: We rigorously document all feedback – regardless of whether it's about the engine's strengths or areas for improvement – so we can continuously work to make these engines as productive for our customers as possible. We developed an air filtration system for engines being used in particularly dusty conditions based on customer comments. Similarly, we are currently working on a more maintenance-friendly fuel filtration system as a result of customer feedback.

It's also fantastic to hear from customers about how our existing engines help their operations today. Across the board, customers that run excavators powered by the D9512 appreciate their durability and reliability as these machines often operate for two shifts of 12 hours each and every day.



The world of Liebherr

A taste of the wider world of the Liebherr Group

The Group

S1 Vision: disruptive innovation for the future

Innovative thinking is what Liebherr is all about! Our latest innovation, the S1 Vision, is a concept that embodies the essence of forward-thinking and cutting-edge technology. This solution is designed to revolutionise material hauling.

The S1 Vision is a scalable, single-axle truck concept that could be used in a range of different applications. So, what makes the S1 Vision different to normal haulage solutions? We can't wait to tell you!

Minimalist design

The idea behind the design of the S1 Vision is an ambitious one: completely rethink truck design to focus on the core components for moving material from point A to point B. What you're left with is a vehicle comprised of a single axle with two wheels, a body, a drive system and a self-levelling

system that keeps everything balanced – regardless of the condition of the terrain. With such a minimalist design, the S1 Vision provides high manoeuvrability even in the tightest of spaces thanks to its zero-turn radius. Plus, its minimal components make this truck easier to maintain and to transport, which all contribute to the S1's reduced cost per tonne.

Technology for today and tomorrow

This haulage concept is designed to be an autonomous solution, with advanced sensors that allow the S1 Vision to effectively avoid obstacles

and navigate any traffic in its vicinity. Autonomous haulage helps to optimise fleet operations by reducing congestion and improving overall safety and efficiency. Plus, if there are multiple S1 Vision units on the one work site, they can all connect with each other and work collaboratively like a swarm to increase site productivity.

The S1 Vision is also designed to be a zero emission haulage solution that will use a battery-electric drive system. As such, this truck will operate quietly and without needing to rely on fossil fuels, making this an impressive way to reduce greenhouse gas emissions as well as operating costs.

Scalable versatility

Because the S1 Vision is available in a range of payload capacities that span from as little as 250 kilograms to an enormous 145 tonnes, it can be scaled to suit a range of needs. With such a variety of sizes, this truck could be used in a number of different applications, such as earthmoving, construction, mining and even farming!

Click here to learn more about the S1 Vision!



The Group

Bringing Liebherr-Logistics to the Americas

The Liebherr Group's presence in the Americas is expanding. As such, the Group is investing in a new logistics facility in Tupelo, Mississippi, that will provide the services necessary for the burgeoning North and South American markets.

To keep up with increased orders in recent years, the Liebherr Group is investing in new and expanded facilities around the world to ensure that its global infrastructure and logistics network is robust enough to support this growth. One such facility is the new logistics distribution centre planned for Tupelo, a city in the USA state of Mississippi. The Group will invest more than €161 million (US\$175 million) to build this facility.

Substantial growth in the Americas

Over the next few years, Liebherr is expecting to see double digit growth in its North and South American spare parts business, with the number of spare parts held in stock due to increase to 100,000 units by the end of the decade. This is on top of sales and service companies in the USA and Canada already needing more warehouse space to house the spare parts for existing customers. As such, the Group has acquired 480,000 square metres of land within Tupelo's Hive Business Park to build new logistics facilities that will support the growing North and South American markets.

Logistics for the Liebherr Group

This new site will fall under the jurisdiction of Liebherr-Logistics GmbH (Liebherr-Logistics) – Liebherr's internal logistics provider that has been managing spare parts for the Group's earthmoving, components, concrete technology, tower cranes and maritime cranes product segments since 2013. The Tupelo logistics centre will be the third for Liebherr-Logistics, joining the two sites in Europe: Oberpfingen in Germany and Born in the Netherlands. From Tupelo, Liebherr-Logistics will handle a range of logistics and service operations – including warehousing, distribution and value-added services like pre-assembly, kitting and repackaging – as well as customs and export services for North and South America.

'Our state-of-the-art warehouse in Germany with various technologies, such as shuttle systems, self-propelled transport units, automatic pallet warehouse and more, serves as a model for the Tupelo site to ensure very fast processing times and the highest quality for our customers,' says Joerg Stroebele, managing director, Liebherr-Logistics.

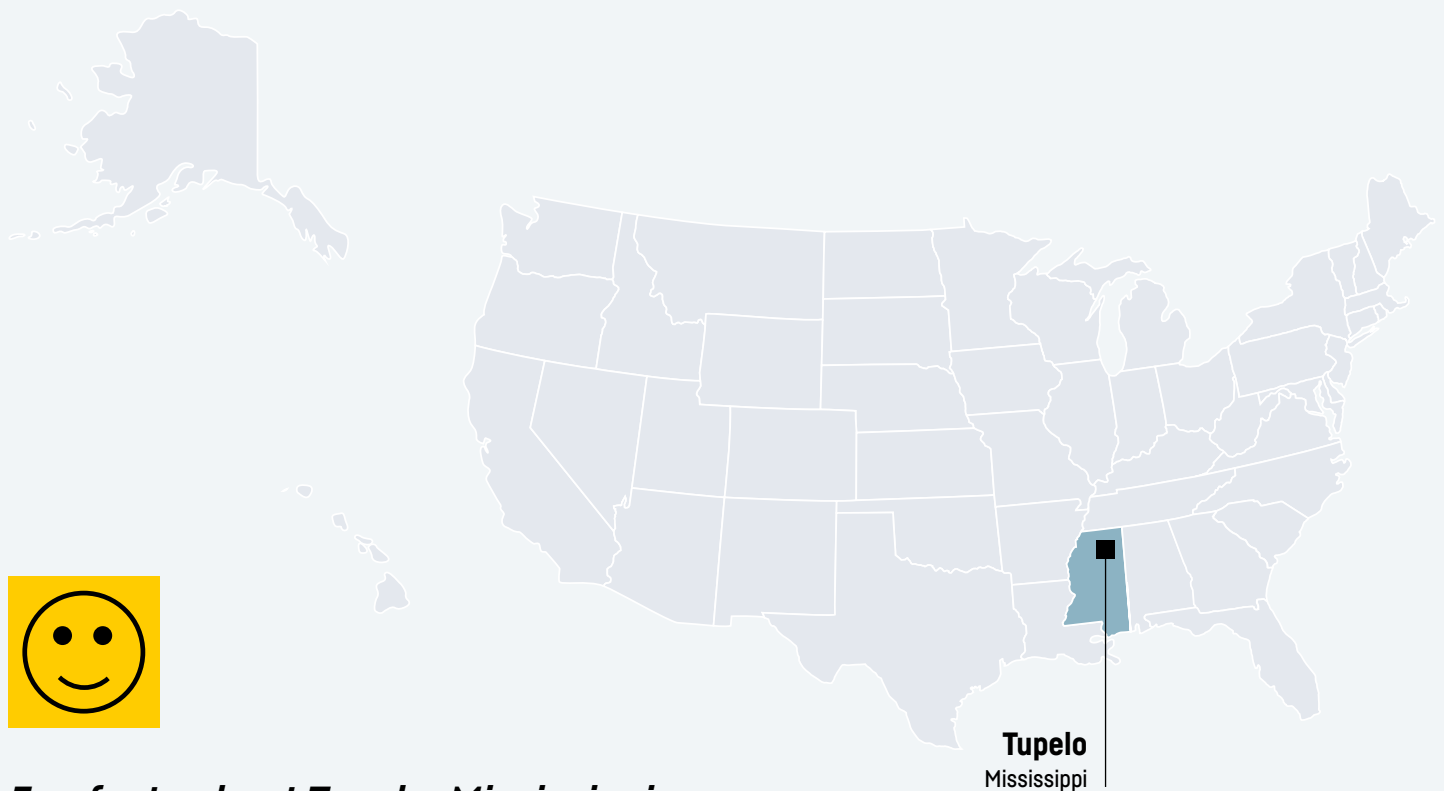


Envisioning a bigger future

One of the reasons that Tupelo, Mississippi, was chosen as the logistics hub for the Americas is because the site gives the Liebherr Group the opportunity to expand. Of the 480,000 square metres of land acquired by the Group, only 263,000 of them are earmarked for the logistics centre. The remaining land will be used to build additional facilities for other Liebherr companies that will provide even more services and produce new and innovative products for the American markets and Liebherr customers around the world.

Construction of the Tupelo logistics centre is planned to start at the end of Q1 2025 and is estimated to be completed by the end of 2026. Once established, the logistics centre will create approximately 180 new jobs for the local area.

'We are very excited about taking the first steps towards a great project and to be able to launch this new plant for Liebherr and deliver spare parts to our customers in a short period of time,' says Stroebele.



Tupelo
Mississippi

Fun facts about Tupelo, Mississippi

- Elvis Presley, the King of Rock 'n' Roll, was born in Tupelo and spent the first 13 years of his life there.
- The Natchez Trace Parkway – a scenic drive that spans three states and more than 700 kilometres – is headquartered in Tupelo. The Parkway follows the Old Natchez Trace, a forest trail with 10,000 years of North American history.
- Tupelo has won the 'All-America City Award' five times. The award celebrates communities that address important local issues through collaborative and innovative civil engagement.

Highlights from other product segments

The Group

Liebherr-Werk Nenzing GmbH converts to HVO fuel

In August 2024, the Liebherr factory in Nenzing, Austria, switched to HVO (hydrotreated vegetable oil) for the machines it produces. The use of HVO in the machines at the Liebherr factory in Nenzing can save 300,000 litres of diesel per year and reduce CO₂ emissions by 810 tonnes. This corresponds to a 20 % reduction in direct CO₂ emissions at the site. Liebherr-Werk Nenzing GmbH is also collaborating with a well-known transport company based in Vorarlberg, Austria, so all transport operations for the factory are carried out using HVO-powered vehicles. This conversion can save 23 % of transport emissions and 3,500 tonnes of CO₂.



Mobile and crawler cranes

Liebherr's mobile construction crane range expands

With a jib measuring in at 52 metres and a maximum lifting capacity of 2,100 kilograms at its jib head, the new MK 120-5.1 delivers impressive performance. One of the key advantages of the new mobile construction crane is its agility; its small turning circle facilitates site access via narrow streets and intersections. The new crane is based on the established MK 140-5.1. Crane operators who know how to operate this model can work with the new one without extensive additional training.



The Group

100,000th machine: Liebherr sets milestone on its 75th anniversary

It is an exciting milestone in the history of Liebherr-Hydraulikbagger GmbH: the production of the 100,000th machine at the Liebherr Group's founding site in Kirchdorf an der Iller. The anniversary machine – an LH 22 M Industry – is absolutely unique, with a 100,000 emblazoned in large black numbers on the white machine. The machine was presented to employees for the first time as part of the celebrations to mark the Liebherr Group's 75th anniversary. As a special highlight, all employees were able to sign the LH 22 M Industry personally.



Refrigeration and freezing

For the first time, a freezer achieves Cradle to Cradle Certified® status

With the exciting vacuum perlite technology, BluRoX, circular economy is closer than ever. At 2024's IFA Berlin – the world's largest consumer and electronics show – Liebherr Appliances presented the innovative full-vacuum freezer FNXa 522i, which is the first freezer – in fact, the first major domestic appliance – worldwide to achieve the Bronze Cradle to Cradle Certified® status. This was made possible by the use of the unique BluRoX insulation technology throughout the appliance. This is a significant milestone in the journey towards circular economy for the entire industry.



Aerospace

Liebherr to provide next generation of flight control computers for Airbus

Liebherr-Aerospace was selected by Airbus to deliver flight control computers for the A320 family of commercial aircraft. Two new integrated flight control computers will be developed and manufactured at Liebherr-Aerospace Lindenberg GmbH, Germany, and Liebherr-Electronics and Drives GmbH in Lindau, Germany. These flight control computers are part of the continuous evolution of the Airbus flight control system. The awarded contract is the outcome of Liebherr's clear focus on R&D for highly integrated solutions in the area of high performance and multicore processing control computers.

Tower cranes

Future-ready crane production: Liebherr invests in metal processing system

A world first innovation: the new deburring line for cut parts at the Liebherr production site in Biberach. Working with specialists from ARKU Maschinenbau GmbH, Rösler Oberflächentechnik GmbH and Teqram B.V., Liebherr-Werk Biberach GmbH has automated the edge rounding of plasma, oxyfuel and laser-cut metal sheet. This new system does it all: removing slag, descaling, deburring and rounding edges. This means that metal sheets weighing up to 200 kilograms can be optimally prepared for subsequent production steps. The parts are then turned into components for crane jibs and tower sections. Robots with state-of-the-art camera technology position the sheet – which are up to 1,250 millimetres wide and 100 millimetres thick – and remove them again after processing.



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