Sandvik Group Magazine
Meet Sandvik #1–2024

# Meet

## Turn the power on


**Future:**
Heading towards an electric society

**Sustainability:**
Data unlocks energy savings

**Interview:**
“I love mining and underground is one of my favorite places to be”
Haley Blinn

SANDVIK

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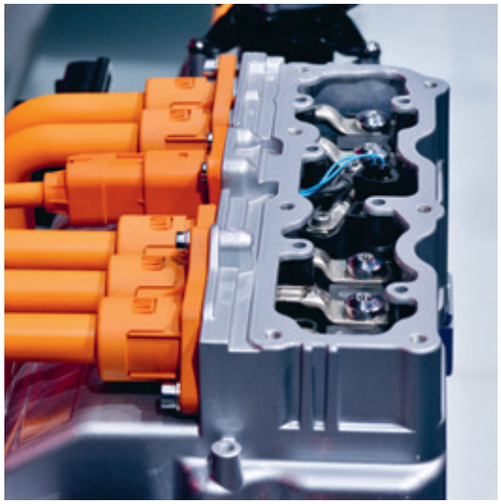

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# The era of electrification

The rapid electrification of society is affecting our world in everything from electric cars and smart homes to industrial manufacturing and mining. Sandvik identified early on that the electrification of society would have major consequences and that we need to adapt and be at the forefront of the developments to remain competitive.

Electrification is contributing to a significant increase in demand for electrification metals such as copper, lithium and cobalt. The increased demand for metals is positive for our mining business and we see other business opportunities as well. Electric mining equipment not only reduces customers' carbon dioxide emissions, but also increases their productivity and reduces their total investment cost. We are already number one in electric equipment for underground mining and are now focusing on electrifying our surface mining offering. Read more about this on page 16.

The rock obtained from mines has to be processed to extract the minerals and we have a wide range of eco-efficient equipment for crushing and screening. All of our stationary equipment is already electrified, and we have set a target that 90 percent of our mobile offering should be electric by 2025, which we describe in more detail on page 22.

The transition to electric vehicles can also provide business opportunities for Sandvik. On page 19 you can read about how electric cars are made with fewer, but more complex and expensive components and tools, and how the making of hybrid vehicles actually requires even more tools than today.

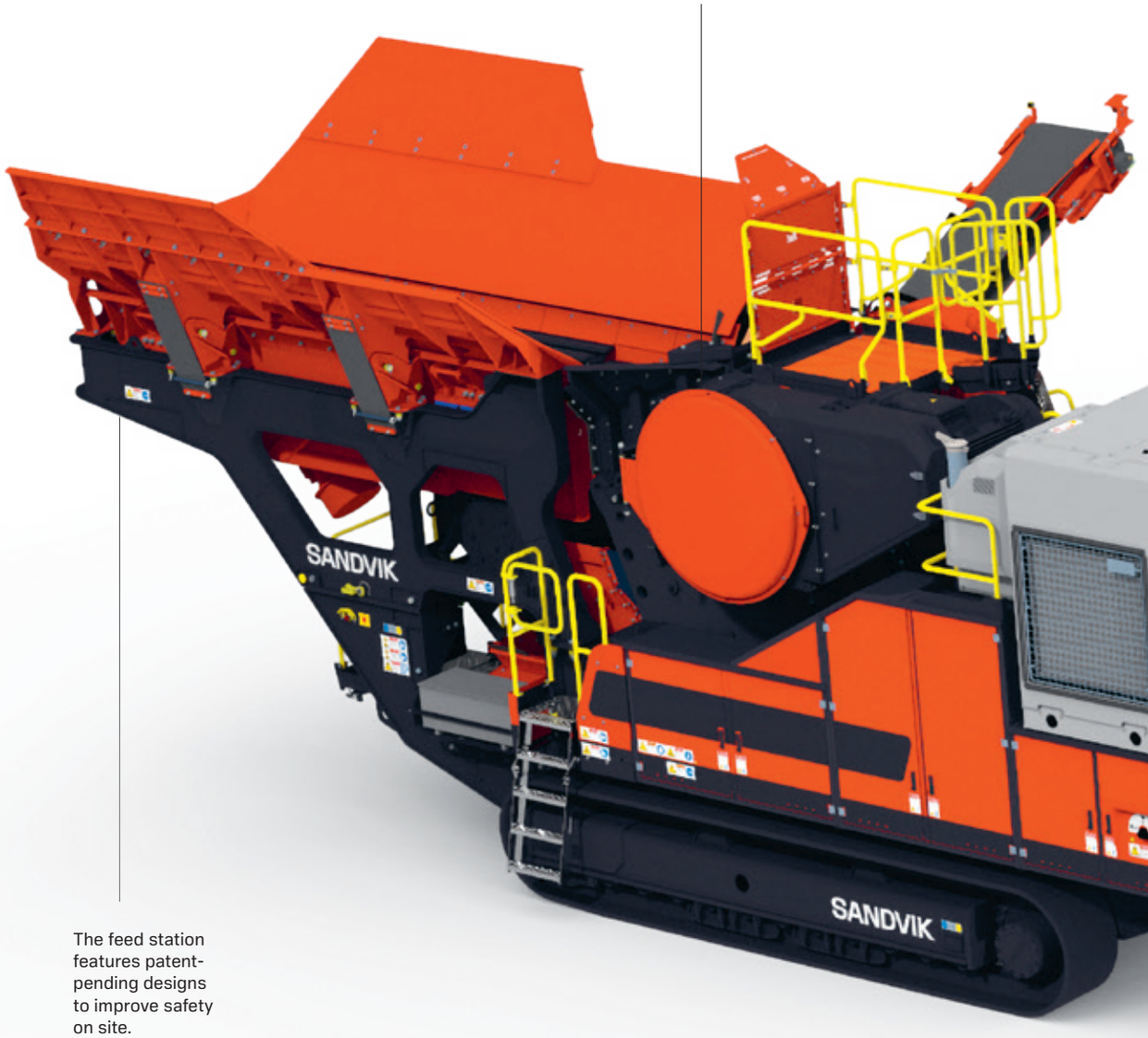
The electrification of society brings many exciting opportunities with it, and we look to the future with confidence.

**Stefan Widing, President and CEO**

# Crushing it!

## Electric crushing equipment will drive the sustainablity shift. The mobile heavy jaw crusher UJ443E is one of the latest launches.

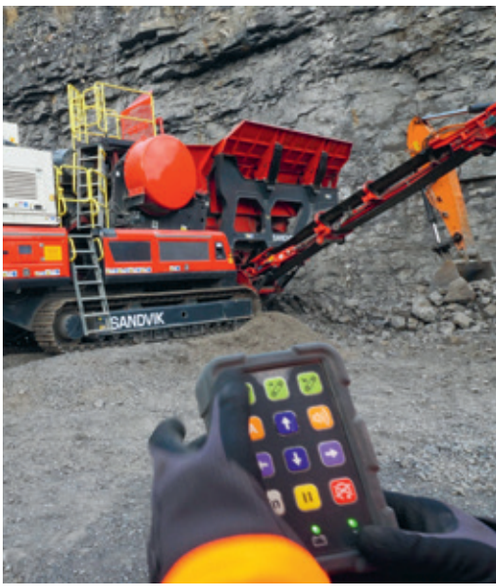
The jaw crusher can be removed and transported separately in regions with restrictive weight regulations.




The feed station features patent-pending designs to improve safety on site.

**30%**

Up to 30 percent more fuel efficient compared to existing generation.



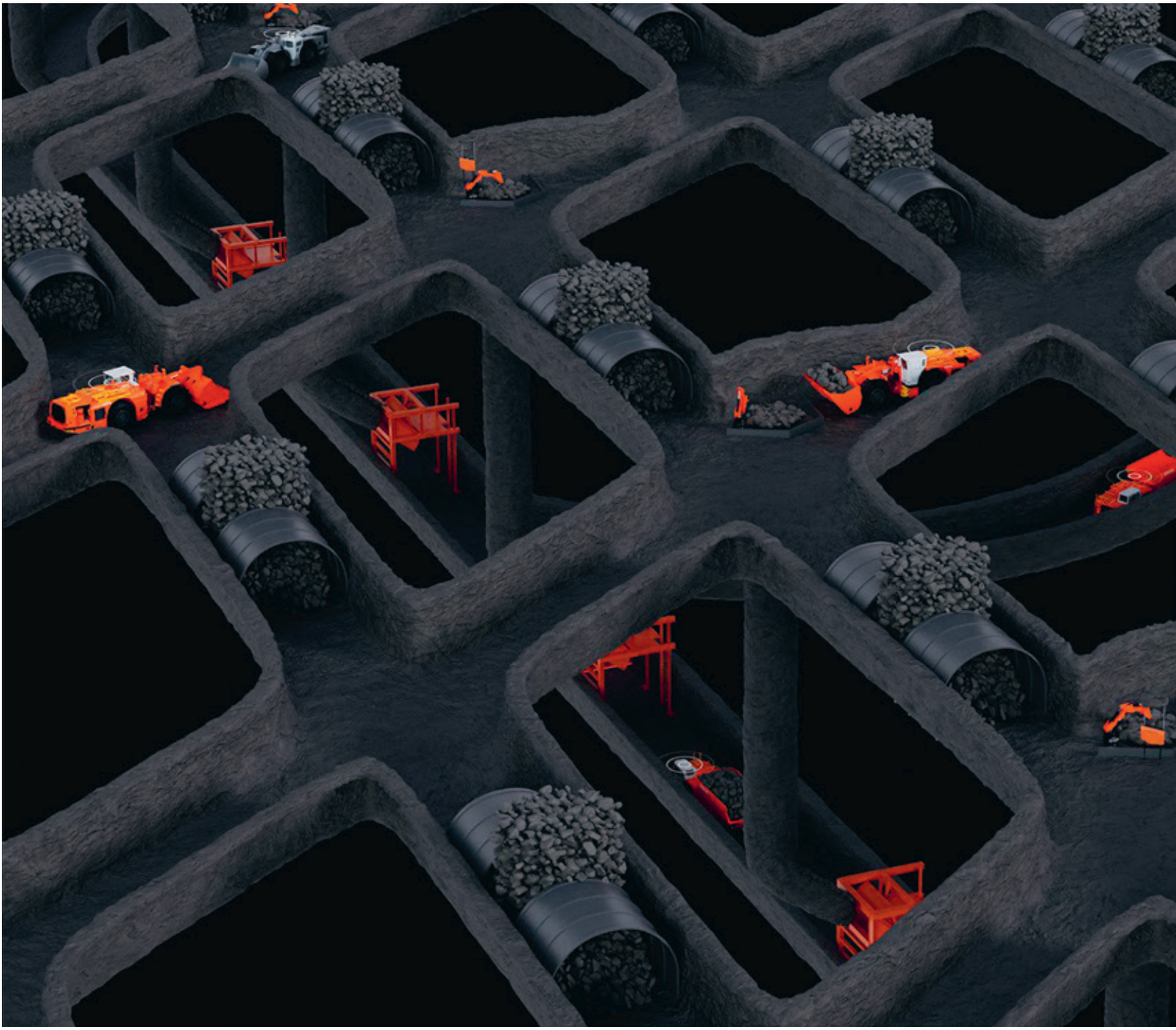

New automation system with an intuitive user experience.

<9%

Less than 9 percent hydraulic oil required with over 10,000 hours of machine usage versus existing generation.


Features an electrical outlet for powering a downstream plant.

Can be powered by an external electricity supply or via the onboard genset using HVO or diesel.



# Mining automation order from Codelco

Sandvik has received a major order from Codelco, the world's largest copper producer, to supply an AutoMine® load and haul automation system for use in the new Andesita project at the El Teniente mine in Chile. The order is valued at approximately SEK 300 million.

"We are very pleased to expand our partnership with Codelco and look forward to providing our leading mining automation solutions to the new Andesita project, enhancing safety, efficiency and productivity in the operations," says Mats Eriksson, President of Sandvik Mining and Rock Solutions.

Sandvik will provide an automation system to the world's largest copper. producer.

The king of Sweden in conversation with Mats Eriksson during the Business Forum.

# Royal state visit in Mexico

In March, the Swedish king and queen made a state visit to Mexico at the invitation of the country's president, Andrés Manuel Lopéz Obrador. The royal couple participated in, among other things, a forum arranged by Business Sweden with 300 participants from business, government and academia. One of the main topics was sustainable mining. Mats Eriksson, head of business area Sandvik Mining and Rock, delivered a presentation emphasizing Sandvik Mining and Rock Soulutions´commitment to responsible and sustainable mining practices. Sandvik also displayed a Sandvik®DI650i drill rig desktop simulator.

## News in brief

**Sandvik acquires Cimquest**
Sandvik has completed the acquisition of Cimquest, a US-based reseller of Computer Aided Manufacturing (CAM) solutions and one of the largest resellers in the Mastercam network. Mastercam was acquired by Sandvik in 2021.

Cimquest will be a part of business unit Mastercam and will be reported within business area Sandvik Manufacturing and Machining Solutions.

Cimquest, founded in 1990, is headquartered in Branchburg, New Jersey, and has 55 employees.

**Order in Mongolia for electric rotary drill rigs**
Sandvik has received an order from Mongolyn Alt MAK LLC to supply electric rotary drill rigs for use at the Tsagaan Suvarga Project in Mongolia. The order is valued at approximately SEK 170 million and includes five cable-electric DR410iE drill rigs, with deliveries scheduled to begin in the second quarter 2024 and concluded by the fourth quarter of 2025.

# Startups rewarded


The award ceremony in Stockholm.

Talented digital innovators from around the world took up the challenge to develop concepts that make mining and manufacturing safer, smarter and more sustainable.

The Startup Challenge is a worldwide call for innovative startups to interact and collaborate with Sandvik experts. The challenge is run by Sandvik, together with its partners SynerLeap and Microsoft.

Each of the three Sandvik business areas offered a unique challenge. The winning teams were startup Dreija from Finland, Luxemburg-based startup Warden Machinery and startup Loopr AI from USA. Each team received Swedish crystal artwork and funding up to USD 30,000 to collaborate with Sandvik on the development of a Minimum Viable Product (MVP) that can be productized and offered to Sandvik customers.

Warden Machinery receives the award.

# Awards to innovations

At the Annual General Meeting 2024, the team behind the Leopard® DI650i drill rig with AutoMine® surface drilling autocycle was awarded the Wilhelm Haglund Medal to the Product Developer of the Year. The team included Pertti Parkkinen, Mika J. Nieminen, Jarkko Uotila, Juha Ketomäki and Petri Suomi from Sandvik Mining and Rock Solutions.

The Sustainability Award in Memory of Sigrid Göransson went to a customer recycling program from Sandvik Machining Solutions. The program has made a substantial impact on reducing material waste and implemented effective recycling strategies.

The winning team included Jill Glynn, Malvina Roci, Sigrid Surkamp, Maria Alexandersson Kathrin Lampel and Eva Kyriakopoulus.


The happy winners: (second row) Petri Suomi, Eva Kyriokopoulou, Jarkko Uotila, Pertti Parkkinen, Malvina Roci, CEO Stefan Widing and Antonia Dåderman (stand in for Jill Glynn), (front row) Juha Ketomäki, Sigrid Surkamp and Maria Alexandersson. Jill Glynn, Kathrin Lampel and Mika J. Nieminen could not attend.


# Record order for surface drill rigs

Sandvik has received its largest ever order for surface drill rigs, valued at SEK 248 million. The order from US-based Sandvik dealer Country Boy Supply, LLC consists of 34 surface drill rigs to replace the dealer's current contractor fleet in Georgia and Tennessee. With automation being a key feature in the fleet upgrade, part of the equipment will have Sandvik AutoMine® readiness. Deliveries are scheduled for 2024.

## News in brief

**LKAB order for automated loaders**
Sandvik has received a major order from the Swedish mining company LKAB to supply automated loaders for use at the Kiruna mine in northern Sweden, the world's largest underground iron ore mine. The order is valued at approximately SEK 250 million. It follows a recent SEK 120 million order from LKAB for automated loaders, received in 2023.

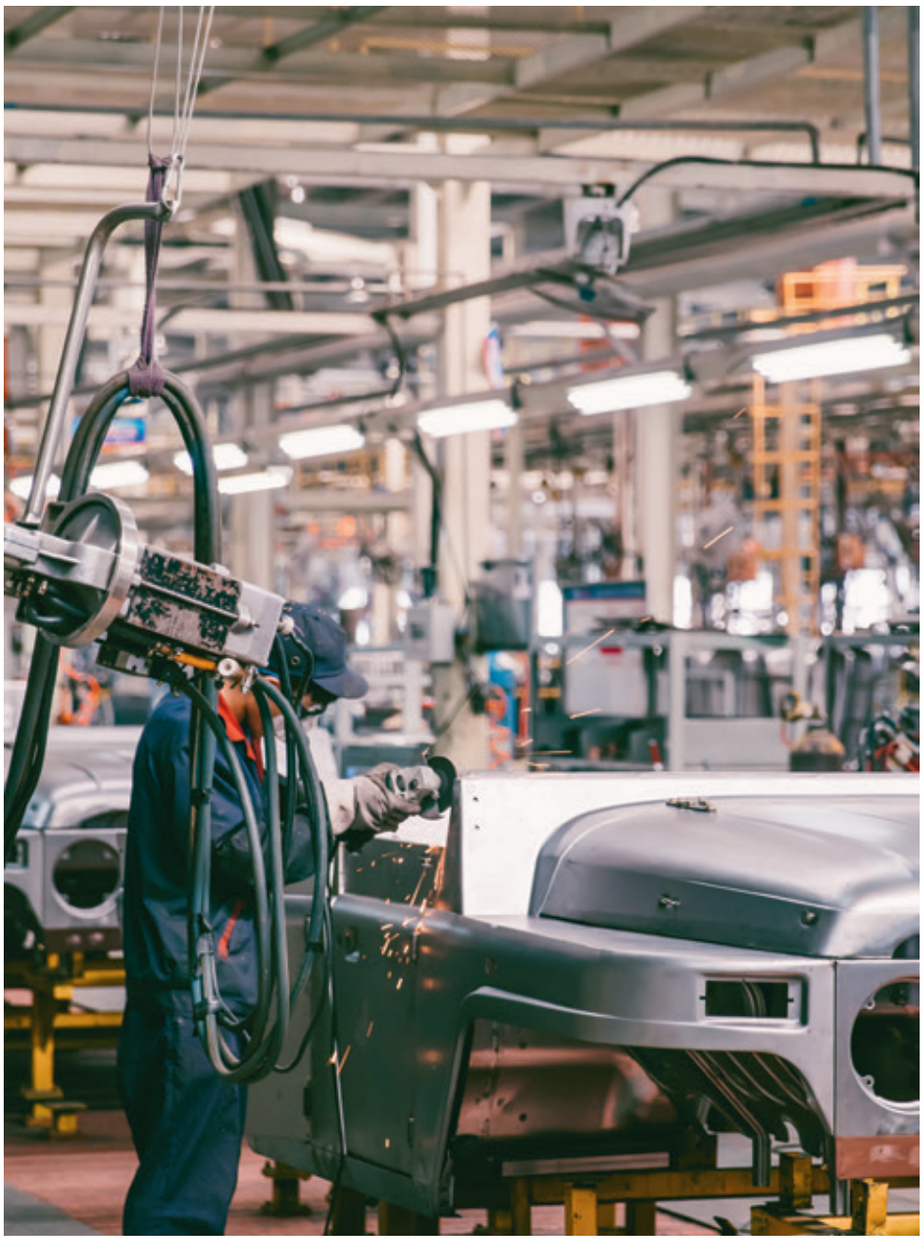
**Election of new board member**
At the Sandvik Annual General Meeting in April, Susanna Schneeberg was elected new board member. Schneeberger, born in 1973, has a Master of Science in International Business and extensive experience from various executive roles in both traditional industry and software companies in a global environment.

The board members Claes Boustedt, Marika Fredriksson, Johan Molin, Andreas Nordbrandt, Helena Stjernholm, Stefan Widing, and Kai Wärn were re-elected, Molin as Chairman of the Board.

The employee unions have appointed Fredrik Håf and Thomas Lilja as members of the Board and Carl-Åke Jansson and Jessica Smedjegård as deputy members.

Resigning Board member Jennifer Allerton, employee representative Thomas Andersson and deputy employee representative Erik Knebel were thanked for their services. The General Meeting resolved on a dividend of SEK 5.50 per share.


Susanna Schneeberger



# Acquisition of China-based Suzhou Ahno

Sandvik has signed an agreement to acquire a majority stake in the leading China-based company Suzhou Ahno Precision Cutting Tool Technology Co., Ltd. (Ahno) from the current majority owner, Ningbo Baosi Energy Equipment Co., Ltd and related parties.

Ahno has sales of about CNY 812 million (SEK 1.2 billion), mainly in China, and has about 1,200 employees. The company has a leading position in precision cutting tools in the premium segment, and an extensive sales, distribution and production footprint in China.

## News in brief

**Software acquisition**
Sandvik has acquired Pro-Micron, a supplier of sensorized tools and automation software. Pro-micron, founded in 2002, has around 56 employees and is headquartered in Kaufbeuren, Germany.

**Sandvik to acquire Almü**
Sandvik has signed an agreement to acquire Almü Präzisions-Werkzeug GmbH, a Germany-based cutting tools and solutions provider within high-precision drilling, reaming, milling and tooling systems. With the acquisition of Almü, Sandvik will strengthen its offering towards lightweight components in the automotive segment.

**New restructuring program**
Sandvik is implementing a new program of restructuring measures that support the strategy and the financial targets of the Group. The program will generate annual savings of about SEK 1.2 billion. Out of the planned savings initiatives, 85 percent are structural and 15 percent are volume related.

"Driving efficiency in various ways also becomes important in times of macro-economic uncertainty. These initiatives will make us more resilient as well as further improve our ability to capture the growth opportunities ahead," says CEO Stefan Widing. Costs related to the restructuring are expected to amount to SEK 2.4 billion.

# Q+A: Sofia Sirvell

The Chief Digital Officer at Sandvik answers three quick questions about the impact of digitalization.

"Sandvik is the perfect place for anyone who wants to contribute to a sustainable future."

Listen to the podcast with Sofia Sirvell:

**Why is digitalization so important for Sandvik?**

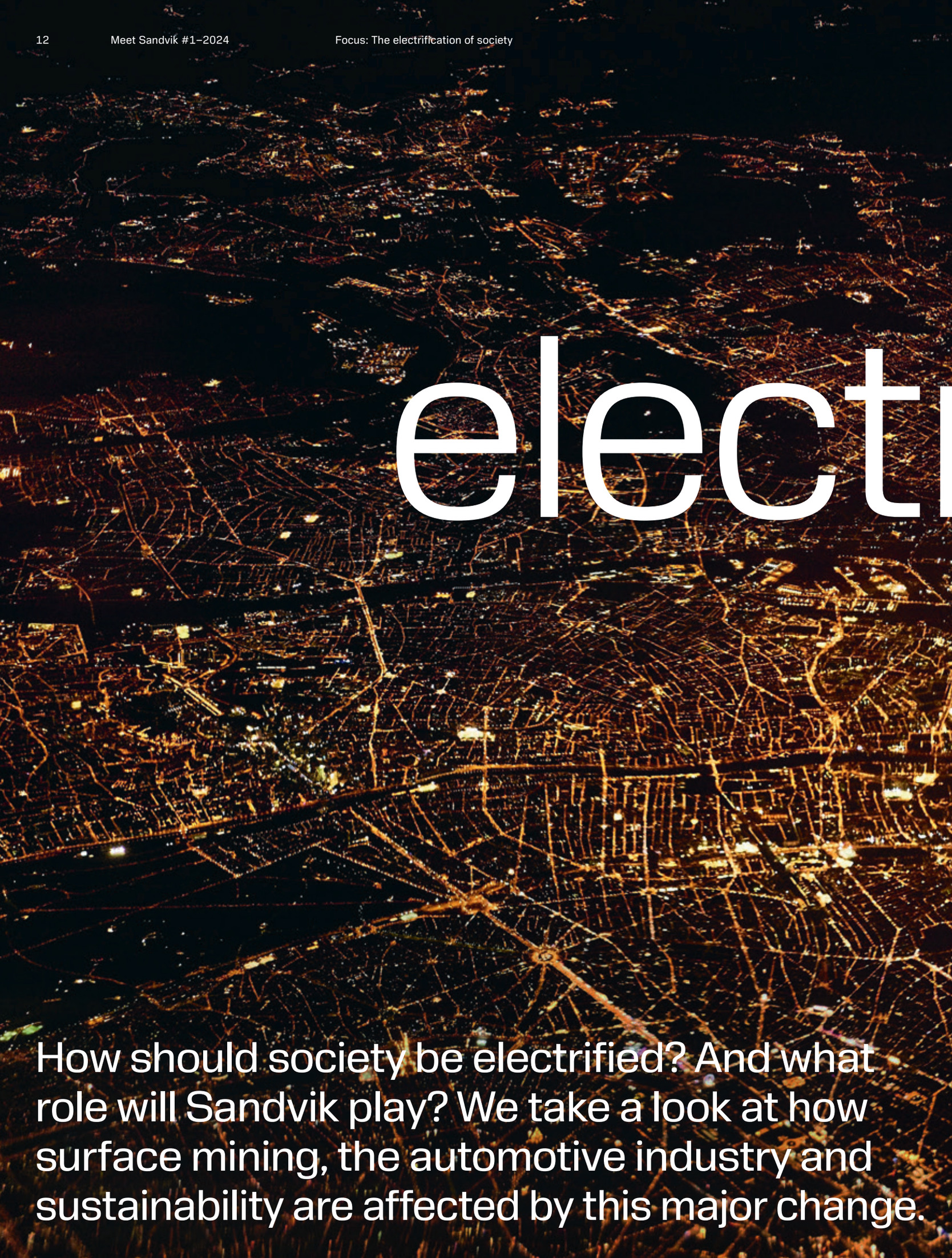
"Data enables us to create value for our customers. We've had the best cutting tools and mining equipment for a long time. By adding data to our superior physical products and by developing new software, we are creating new digital products that make our customers even more productive, sustainable, and safe. Digitalizing our company also reduces manual and repetitive jobs so that we can all focus on more value-adding tasks."

**Is Sandvik a digital pioneer?**

"We are a true digital pioneer in the mining segment, with world-leading mining automation products, and we are on the path to becoming world-leading in digital machining and manufacturing. Sandvik is also shifting from being a company full of engineers to a company with over 1,000 software developers."

**Why is it so exciting to work in the industry?**

"Some industries, such as retail, were transformed by digitalization when e-commerce changed all the rules. I believe that is happening now in our industries, such as mining, where the underground environment is becoming fully automated. That is why Sandvik is the perfect place to be if you want to contribute to a sustainable future."



# electr

How should society be electrified? And what role will Sandvik play? We take a look at how surface mining, the automotive industry and sustainability are affected by this major change.

# The rification of society

By Jonas Rehnberg

# Plug in and cool down

The electrification of society is a key element to combatting global warming and encompasses our daily lives in multifaceted ways.

Photos Getty Images

The global economy runs on approximately 20 percent electricity.

The escalating pace of global warming is unleashing more extreme weather, threatening tipping points and breaking temperature records. To slow the pace of global warming, governments and companies around the world have made a commitment to reach carbon neutrality by 2050, cutting emissions of the greenhouse gases that contribute to climate change.

"To deliver on the climate commitments made globally, substantial pivots are needed across industries and geographies," says Harald Bauer, an Industrials & Electronics Practice Leader at consultancy firm McKinsey & Company. "As the energy transition accelerates and the world moves towards net zero, the switch from fossil fuel-based systems to electricity-based systems is a crucial lever to help achieve decarbonization goals."

Consequently, electrification calls for us to reimagine the way we refuel our cars, heat our homes and power our industries. Besides reducing greenhouse gas emissions, increased electrification leads to lower noise levels, improved general health, and the ability to better manage the power grid. For example, charging vehicles and machines in off-peak hours can result in more efficient grid utilization and lower costs.

Of course, the energy source that is used to produce electricity matters: burning coal and fossils won't make electricity a green alternative, whereas renewables like solar, wind and waves will.

**80 percent fossil fuels**

Currently, the global economy runs on approximately 20 percent electricity; everything else is powered by fossil fuels. To avoid global temperature increases, the integrated energy system of the future must run on 68 percent direct electricity, according to the Energy Transitions Commission.

But the journey isn't straightforward: "Potential bottlenecks include land availability, energy infrastructure, manufacturing capacity, consumer affordability, investment willingness, and material availability," according to a fresh McKinsey report entitled Global Energy Perspective 2023.

Rare earth minerals are required for most energy transition technologies, with electric vehicles (EVs) and wind generation both highly impacted by material bottlenecks. EVs are the key technology to decarbonize road transport, a sector that accounts for over 15 percent of global energy-related emissions, says International Energy Agency. The rapid uptake of electric vehicles on our roads is indeed a token of consumer willingness to go electric.

> "We need a huge transition from a fossil energy dominated world to a clean electrified world."

But it is far from enough, warns the World Economic Forum in a recent report: "Most scientists agree that to keep global temperature increases below 1.5 degrees Celsius – and avoid climate disasters – we need to go much further than switching to EVs. We need a huge transition from a fossil energy dominated world to an electrified world in the next two decades."

What this means, practically, is that more energy consumption needs to be electrified – either connected to the power grid or with local generation. Cars, trucks, buses and airplanes using petrol and kerosene, homes heated by natural gas, and industrial processes using fossil fuels must switch to electric alternatives.

**Increased need for minerals**

Needless to say, this will require massive investments in electrical infrastructure. "In Germany alone, 80 billion euros need to be invested in the grid and the transition to green energy by 2035," says Bauer.

McKinsey and other management consultants advise companies on how to unlock the business case behind electrification and overcome supply-chain bottlenecks. Luigi Gigliotti, Leader of the McKinsey Platform for Industrial Electrification, points out that "there are opportunities as well as value-chain constraints that need to be solved for the electrification to happen. Standard materials, such as copper, may turn out to be a bottleneck, as will metals required for energy storage media, such as lithium and cobalt."

An EV, for example, typically requires four to five times as much copper as an internal combustion engine car. Many renewable energy sources also require certain metals and minerals. Mining activities need to be increased and to do it sustainably requires electrification, automation and digitalization. Production of electric vehicles in smart factories, meanwhile, requires integrated solutions and sophisticated tools in order to realize the full potential of electric transport.

Sandvik offers solutions that enable electrification across several sectors, from mining and construction to the manufacturing of electric vehicles. On the following pages are examples showing how Sandvik leads the way in sustainable mining and component manufacturing.


# Power to the surface

## In terms of electrification, surface mining is lagging behind underground mining. A new generation of drill rigs is about to change that.

The mining sector has a crucial role to play in the energy transition, since metals and rare earth minerals are necessary for components and storage media used in renewable energy production. In addition, electric vehicles (EVs) require greater amounts of copper than conventional vehicles.

As 80 percent of the material extracted in mines worldwide comes from surface mines, the electrification of surface equipment, such as drill rigs, offers a huge potential to decarbonize open-pit mining. But electric equipment also brings a host of other benefits for mining operators, says Lauri Laihanen, Vice President, R&D and Product Management, Surface Drilling division at Sandvik in Finland. “Electrification goes hand in hand with automation and digitalization, which together

The electrification of surface mining is speeding up.

Lauri Laihanen, Vice President, R&D and Product Management, Surface Drilling Division.

help operators to reduce costs and increase efficiency with the help of data that optimizes mine planning and operations."

The electrification of underground mining has advanced further than on the surface, partly due to the significant positive effects on the working environment. Removing diesel engines from pits and tunnels means cleaner air, less heat and reduced need for ventilation.

Sandvik is already number one in providing equipment for the electrification of underground operations. "We aim to build on this expertise by speeding up electrification above ground with the help of new rigs," says Laihanen.

One reason why electrification has proceeded slower above ground than in underground operations is that the latter generally has access to the grid and an electrical infrastructure in place. "The marginal cost of hooking up another electric vehicle is low if this is already in place," says Laihanen.

**Electrification "a means to an end"**

During the last two years, Sandvik has unveiled two new concept drill rigs for surface applications: one for construction and, most recently, a mining concept drill rig. It comes

→

with a tethered cable as well as a battery that allows up to seven hours of tramming without charging.

“The major benefit of the battery electric concept drill rig is the flexibility it brings to operations planning. This did not exist for electrified equipment before,” says Laihanen, who points out that electric equipment is “not a goal in itself, but a means to an end, as the most viable way for our customers to reach net zero in the near future.”

From a strategic and technological point of view, it makes sense for Sandvik to grow in surface mining, Laihanen says. “The technology required on the surface is pretty similar to mining underground, but the machines are designed differently to meet application needs. To the customer, it makes sense to use the same equipment vendor above and underground, particularly from a service and maintenance perspective.”

Electrification also makes sense in terms of cost savings, he adds. “We estimate that the use of electric equipment can yield up to 10 percent savings on a customer’s overall energy consumption.”

**Huge latent demand**

Generally speaking, surface operators tend to source from a wider range of different contractors than underground operations.

“Sandvik already has a high market share in underground drilling and load and haul equipment,” says Laihanen. “On the surface side, our market share is significantly lower. There’s definitely room for us to grow in surface mining.”

And the demand is certainly there. “Currently, an estimated 30 percent of surface drills globally are estimated to be electric, and more and more customers are adopting them. For Sandvik, surface mining offers a great growth opportunity, and we aim to meet the demand with solutions that are safer, more productive and sustainable,” Laihanen concludes.

80%

of the material extracted from mines comes from surface mining.

248

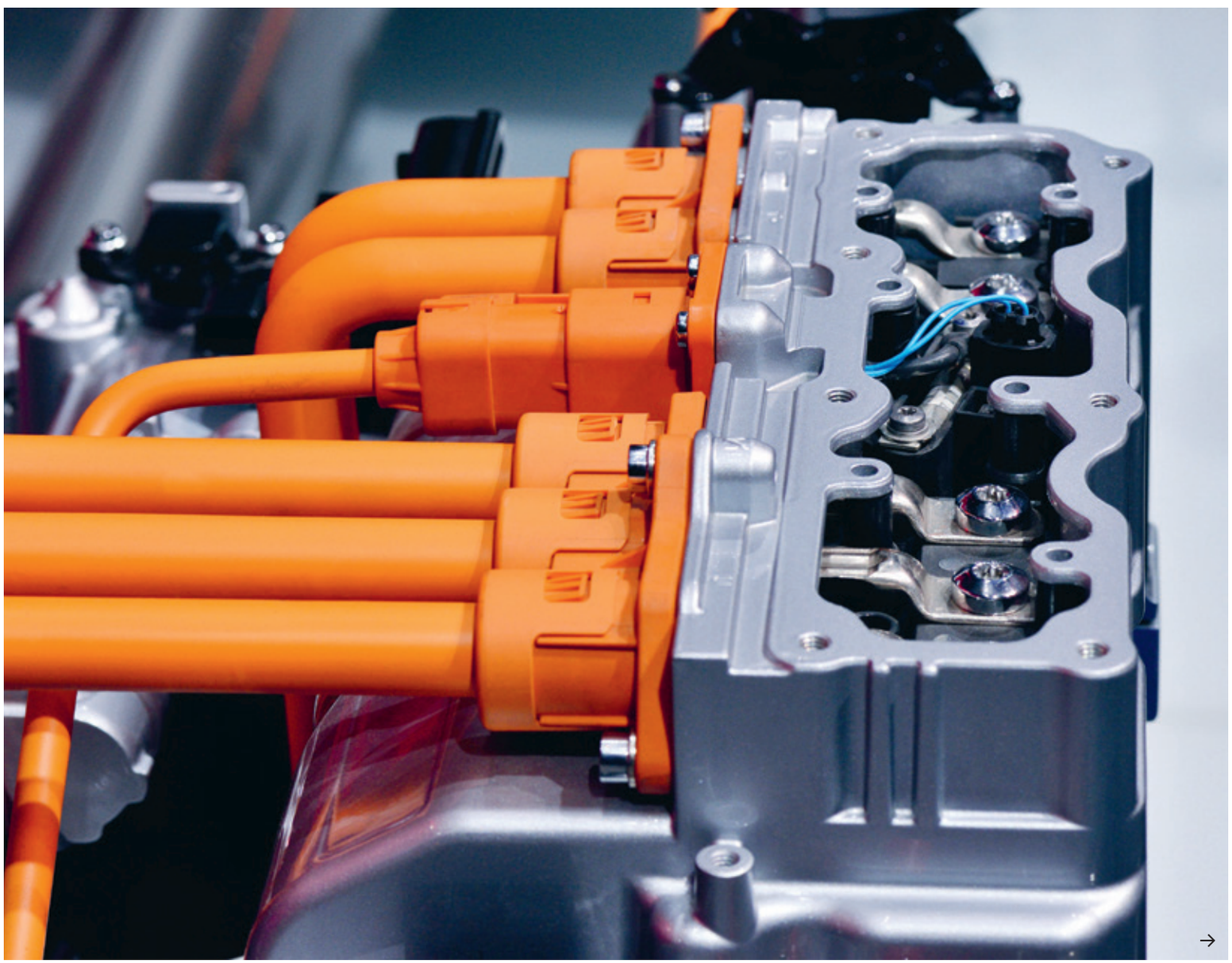
The largest Sandvik surface order ever was valued at SEK 248 million.

“The major benefit of the battery electric concept drill rig is the flexibility it brings.”

# Gearing up for electric mobility

The shift towards electric vehicles heralds massive changes for automakers and their suppliers. Fewer, but more complex, components and tools will be required.

On average, an a electric vehicle has 13,000 parts.



A Sandvik Coromant tool machining an electric motor housing for electric vehicles.

Electric vehicles (EVs) are the key technology to decarbonize road transport, a sector that accounts for over 15 percent of global energy-related emissions, according to the International Energy Agency (IEA). Driven by consumer demand and new regulations aiming to limit emissions from internal combustion engine (ICE) vehicles, the auto industry is gearing up for a seismic shift.

The automotive industry and its subcontractors are an important customer segment for Sandvik, according to Eduardo Debone, Head of Product Area Emerging Offer at Sandvik Coromant.

"The automotive industry is a big technology driver and a beacon of innovation even to other industries in pushing new and cost-effective technologies for mass produc-

Eduardo Debone, Head of Emerging Offer at Sandvik Coromant.


tion. Meeting their needs is a ticket for Sandvik to lead the way and position ourselves in a premium category."

Debone points out that production of conventional ICE cars will continue for the foreseeable future. Consequently, most established automakers are likely to produce EVs as well as ICE-powered autos. And they will need a type of dual-platform approach in their manufacturing facilities. This strategy is beneficial to Sandvik, says Debone: "Investments in new facilities and upgrades and retrofitting of existing plants represent an opportunity for Sandvik as a premium supplier of machining solutions."

In addition, hybrid cars fitted with two parallel connected energy systems require an even greater number of components and tools, and so do the increasingly popular four-wheel drive cars.

On average, a car with an ICE is made up of 33,000 moving parts, but an EV has just 13,000. How does this affect the demand for tools and machining solutions? "While EVs require fewer components than ICEs, some of the tools required are much more complex and specialized, and come with a higher price tag," says Debone.

One example of a production method that has a large bearing on tooling is that leading EV makers are increasingly building chassis and frames in one piece. Megacasting is the process of die-casting nearly the entire complex underbody of an EV and may involve an injection of up to 80 kilograms of molten aluminum into a mold where it is formed into a component, released, and then quickly cooled.

"These frames often require long, overhanging tools that are lighter and at the same time more complex, to enable the precision and final form complexity required," says Debone and points out that "the cost per tool item tends to be higher for EVs than for ICEs."

The need for servicing of tools used in EV production also tends to be greater. The superhard polycrystalline diamond (PCD) tools, for example, rely on servicing to recover the investment. "You don't discard or circulate a used PCD tool in the same way you would a tungsten carbide insert," says Debone.

**Various options and features**

To justify a higher price tag, electric cars also come in a greater variety and with more options and features than most ICE cars. "To meet this trend, EV makers need a somewhat more flexible manufacturing system. Machines and processes look vastly different from the early days of auto assembly lines, while the tools used today need to be engineered in a way that allows them to be used for a greater number of different models than in the past," says Debone.

As a result, Sandvik Coromant has refined its tool offering to suit EV makers. The turning and y-axis tools such as CoroTurn® Prime, and the PCD tooling range, are examples.

Whether EV plants are greenfield operations run by new players, or spin-offs from established automakers, digital manufacturing is the preferred choice. The solutions from Sandvik allow for end-to-end closed-loop manufacturing from pre-production to post-production. In retrofitting machines in existing facilities, many automakers opt for digital investments to cut costs and stay competitive.

To conclude, Debone summarizes the effects of the shift to EVs on Sandvik: "More projects, new components and more complicated tools speak in favor of Sandvik. The auto industry disruption certainly helps to make us ready for shifts on this and in other industries as well. We gain traction."

**The future of electric vehicles**

- → Consultancy firm BCG says that "the entire USD 3 trillion, 150-year-old automotive industry is shifting to a connected, electric future.
- → By 2035, EVs are expected to constitute 60 percent of new vehicle sales worldwide.
- → In many parts of the world, however, the purchasing power to invest in an EV remains far away, and the electrical infrastructure required is not yet available.
- → Most established automakers are likely to continue producing EVs as well as ICE-powered vehicles for the foreseeable future.

# Eco-efficient rock processing reduces climate impact

## Electrified crushing and screening equipment, combined with digital solutions, saves energy and reduces the climate impact of rock processing.

Rock processing in the mining industry is essential to access metal and minerals, including the rare earth metals crucial to the green transition. Processed rock is also needed for the construction of roads and buildings.

To increase energy efficiency and enable the shift to electrified operations that help reduce the climate footprint of the mining and infrastructure sectors, Sandvik offers stationary and mobile crushers powered by electricity, HVO (Hydrotreated Vegetable Oil), or diesel. “We are committed to working closely with our customers, providing equipment, services, and solutions that enable more eco-efficient rock processing,” says Pontus Alexandersson, Head of Sustainable Business at Sandvik Rock Processing Solutions.

The range of stationary and wheeled crushers and screens from Sandvik is already 100 percent electrified, and by the end of 2025, more than 90 percent of the mobile offering will be available with an electric drive alternative. The mobile heavy jaw crusher UJ443E is one of the latest examples, and more electric solutions will be launched during the year. “We are driving the shift towards faster, greener, and smarter operations in multiple ways – not just by electrifying our equipment, but also by reviewing our customers’ existing processes and machinery to address the mining and aggregates industry’s major energy challenges,” says Alexandersson.

Conventional grinding accounts for some 40 percent of the energy used in mining, and has an energy efficiency of about 5 percent. Sandvik stationary crushers have an estimated 50 percent energy efficiency. So, crushing more at an early stage of the rock processing saves energy further down the line, and extending the crushing process into smaller-sized rocks also has a significant, energy-saving impact.

“Crush more and grind less – that’s our message,” Alexandersson says.

Moreover, electric equipment such as the latest mobile crushers from Sandvik offer a host of additional benefits compared to conventional equipment, such as lowering operating costs by requiring less service and maintenance. Since access to the power grid may be difficult in remote locations, the latest electrified mobile jaw crushers from Sandvik are also fitted with onboard gensets that may be fueled with HVO or traditional diesel.

**Optimization creates sustainability**

The digital solutions developed by Sandvik go a long way in helping customers improve sustainability while increasing productivity and performance. “By using connected equipment and, for instance, our digital service SAM™ which provides data analysis designed to support operational excellence, you can get a lot more out of your machines and processes. Optimized productivity and sustainability really do go hand-in-hand,” says Alexandersson.

Looking ahead, he believes a big challenge lies in making the industry aware of how much can be gained from making the shift towards more energy-efficient rock processing solutions. “In general, there is an improvement potential of up to 10–15 percent to be reached through configuration and customization of the equipment already in use.”

“We are driving the shift towards faster, greener, and smarter operations in multiple ways.”

Electric equipment offers a host of additional benefits, says Pontus Alexandersson. (Photo Erik Stolt)

The stationary offering from Sandvik is already 100 percent electrified.

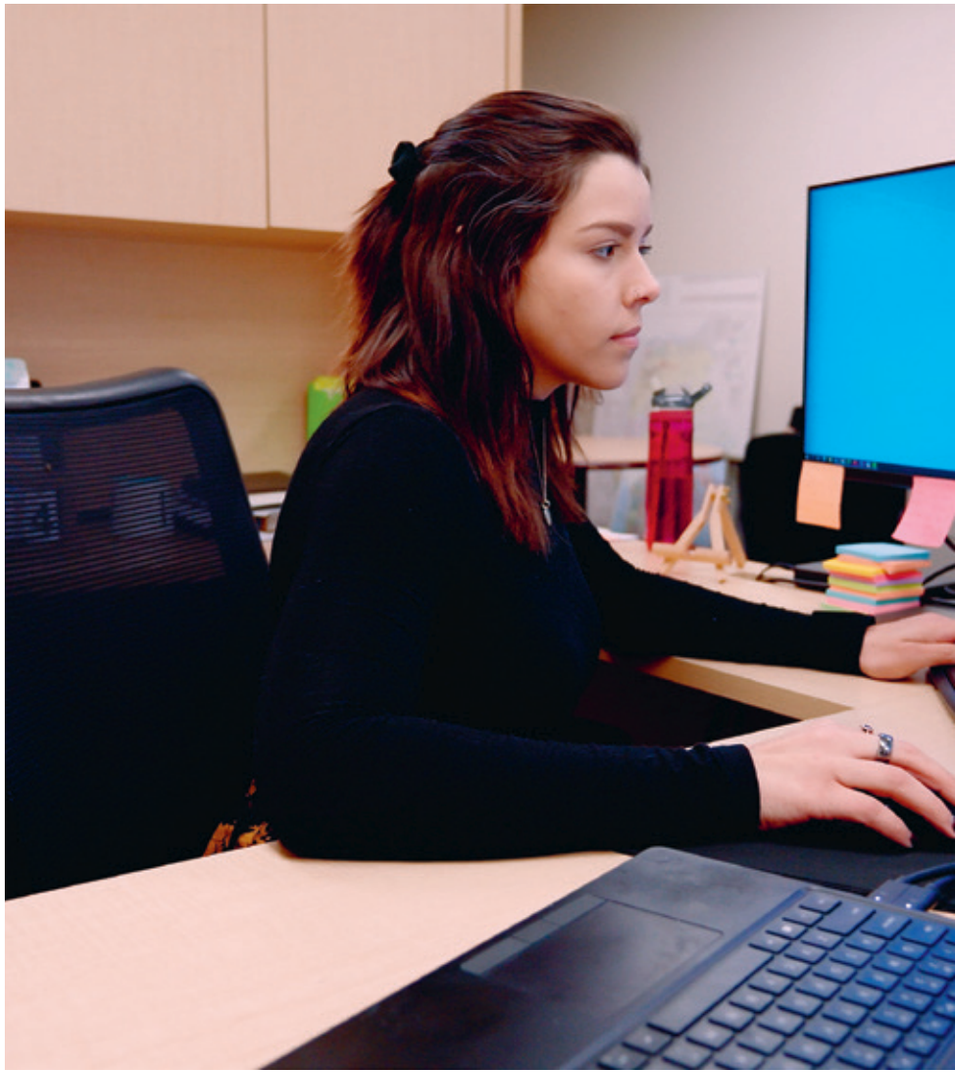
# She shoots, she scores!

By Cari Simmons
Photos George Harrold

**Haley Blinn**

**Location:** Sudbury, Canada
**Role:** Battery Electric Vehicle (BEV) Engineer at Sandvik
**Hobbies:** Skating and playing ice hockey

Whether it’s on the ice or at the office, Haley Blinn likes a challenge. It’s what brought her to Sandvik and made her opt for an engineering career in mining.



As a Battery Electric Vehicle (BEV) Engineer at Sandvik, Haley Blinn spends much of her time producing studies for customers to determine the technical and economic feasibility of implementing BEV ore haulage fleets in their mines. “There are many drivers which determine how feasible a BEV fleet may be, and every mine is different, so these studies are really important for customers,” she says.

Although investing in BEVs requires a capital purchase, they are an attractive option for many companies that prioritize environmental social and governance (ESG) issues or face high diesel prices. Among their advantages, BEVs offer lower operating costs, a reduction in greenhouse gas emissions, and greater health and safety benefits for operators.

**Battery expertise**

The Sudbury, Canada-based Blinn began her career as an R&D intern working for Artisan Vehicle Systems, a company acquired by Sandvik in 2019 that specializes in battery electric vehicle solutions for underground mining. The experience, which included studying ways to repurpose retired battery cells from mining, resulted in a decision to put grad school and further physics studies on the back burner.

“I felt stimulated and challenged in engineering,” she says, which is one of the reasons why she began working at Sandvik full time in 2022. “Energy management is a huge challenge today and the cool thing is you can be quite creative in how you do it. If mining were all figured out, I wouldn’t have a desire to be in this field, but there are still a lot of problems to solve, and I like that. I want the users of our equipment to have the best possible experience from a cost and engineering perspective.”

She’s even overcome a fear of being underground. “I hated the thought of it, but now I love mining, and underground is one of my favorite places to be,” she says, adding that working at Sandvik provides plenty of opportunities to visit mine sites.

“There are infinite career paths and learning opportunities within the company and I get exposure to different mining applications and have contact with customers all over the world, which is exciting. It’s interesting to see how mining is done everywhere.”

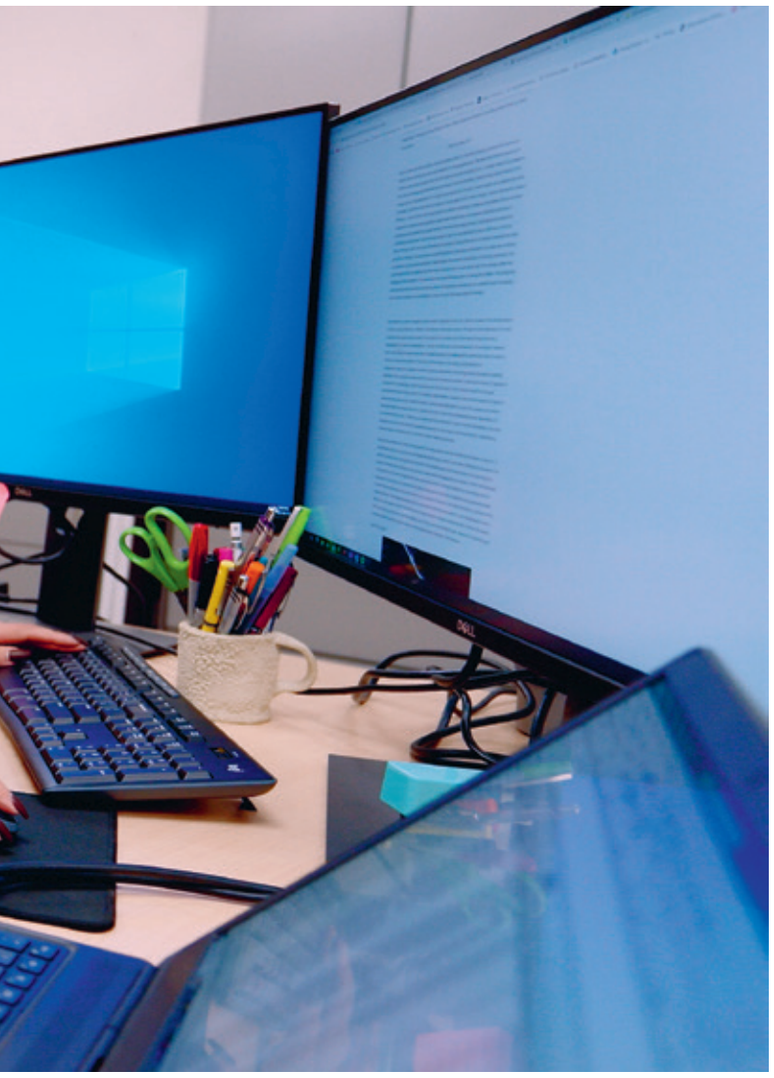
**A diverse workplace**

Blinn also appreciates being just one of many women at Sandvik in what tends to remain a male-dominated industry. “It speaks volumes of a company when you have a diverse workforce and good company values with training in diversity and inclusion,” she says.”

Outside of work, Blinn spends much of her time on the ice. She’s a three-time silver hockey medalist in the province of Ontario (with a population of more than 14 million) and has played on girls’ teams as well as on all-boys’ teams. “There was always a place for me and that was empowering,” she says.

A knee injury put an end to playing competitively, but she still skates and plays hockey for fun. “Hockey encourages teamwork and collaboration, which you can translate into a career,” she says. “Everyone recognizes it as a very Canadian thing to do and we’re proud of it. Hockey really brings people together.”

Battery-electric vehicle solution from Sandvik.

Blinn is a three-time silver hockey medalist in the province of Ontario.

Engineering provides the challenges Blinn enjoys.

**3 quick questions to Haley:**

**What do you see as the biggest challenges in mining today?**
“As in every industry, energy management and emission reductions are big topics, and these are huge challenges that we are working to fix.”

**Where do you envision yourself in a few years?**
“I hope that I’ll still be at Sandvik. I want to remain in a technical role, and that can mean a lot of things within the company – project engineering, data analytics, programming – there are infinite career paths.”

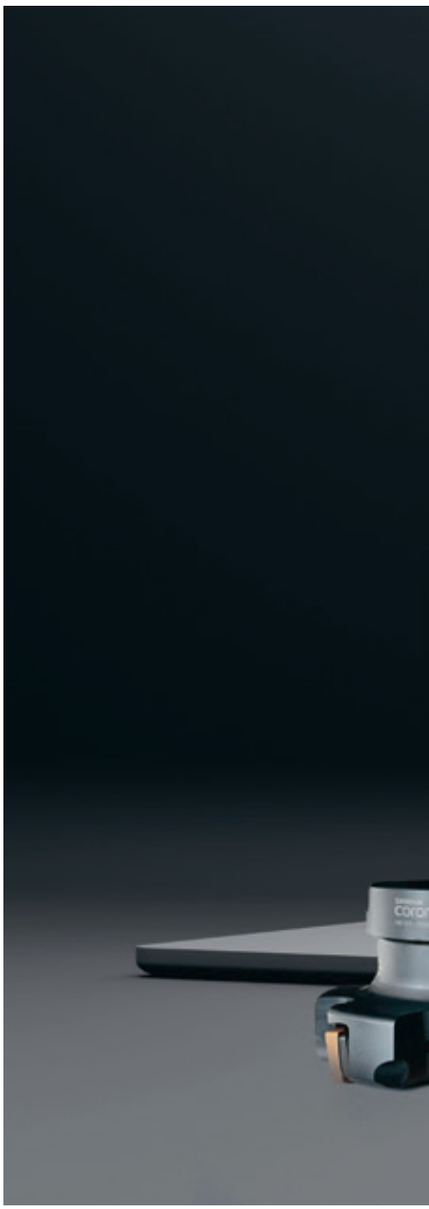
**What are your interests outside of work?**
“Hockey, skating, running, writing music, video games and knitting. I always need to be productive and have probably made a million scarves.”

Watch the film with Haley Blinn:

# Making measures for a sustainable future

## An analyzing tool from Sandvik Coromant helps customers reduce their energy consumption and carbon emissions based on data.

By Danny Chapman
Photo Sandvik



The Sustainability Analyzer helps customers reduce their energy usage and carbon emissions.

The Productivity Analyzer, introduced two decades ago, has proved to be a success. In 2023 alone, it helped customers save nearly two million production hours. It has now been upgraded with the new module, Sustainability analyzer, where customers can measure their energy consumption and $CO_2$ emissions.

"We believe in unlocking potential with data," says Patrik Eurenius, Head of Sustainability and EHS at Sandvik Coromant. "Successful manufacturers are those who recognize data as a primary asset for their company and use the analyzer to make the right decisions. Through the insights from our Productivity Analyzer, customers can better understand the impact of their production and how to make efficiency improvements."

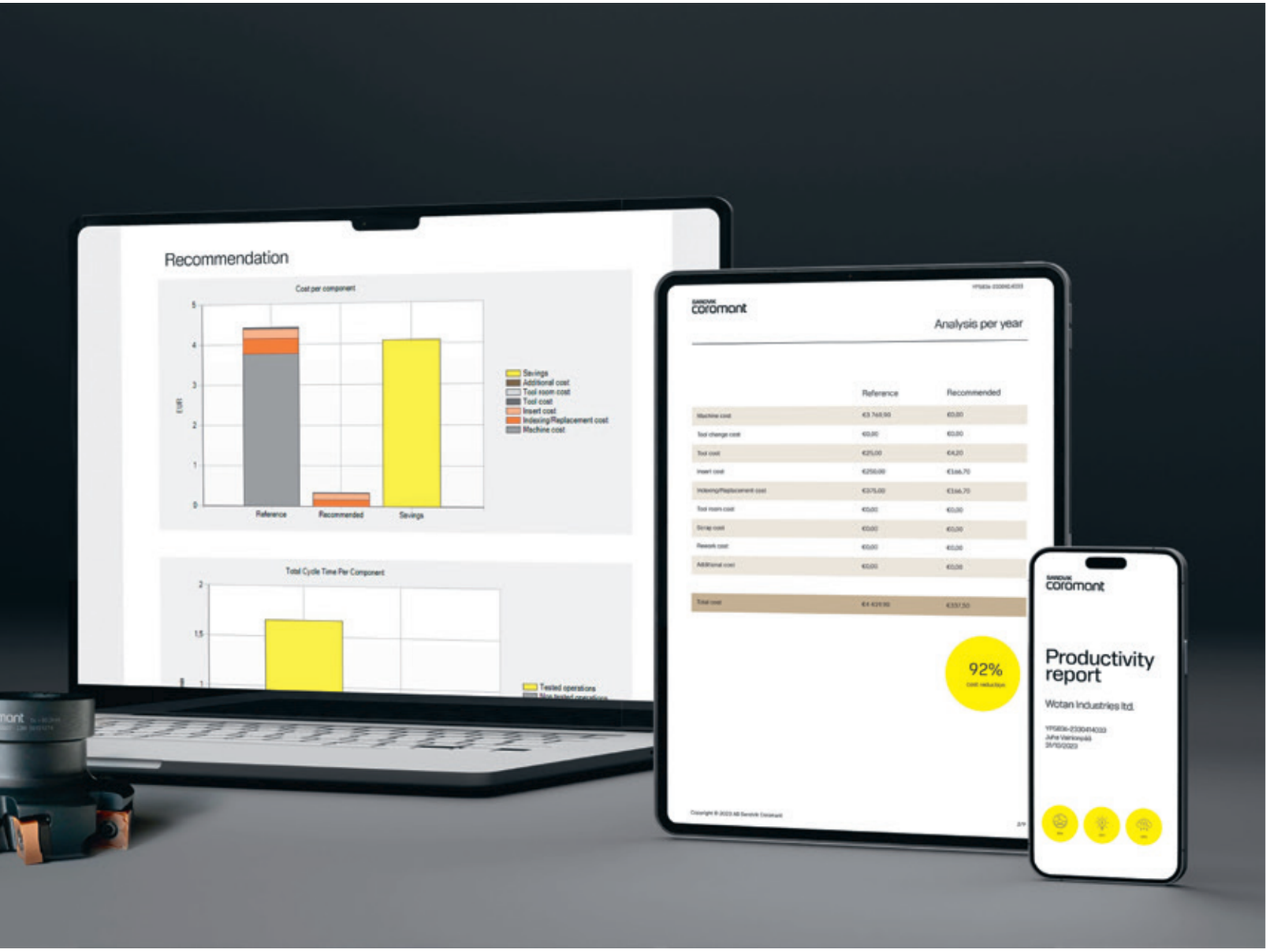
Illustrating the direct and indirect benefits of smart machine tooling, such as increased productivity, higher return rates and increased machine utilization, the Productivity Analyzer provides a detailed breakdown of a customer's tool use and its impact on their operations. Data is delivered through a reporting system, which outlines the exact savings customers can make by using Sandvik Coromant tools, and also provides suggestions for further improvement. "Despite the importance of reducing energy consumption and carbon emissions, sustainability metrics haven't been held in the same regard as other business metrics. That is about to change with the new sustainability measuring features that we have developed," says Eurenius.

The sustainability data provided by the analyzer includes energy consumption per component and the amount of $CO_2$ emissions generated per year. The sustainability data is based on parameters such as the amount of energy input on the spindle used for cutting processes, the price of energy in the manufacturer's region and the corresponding carbon intensity, and the power required to run a machine outside of its normal cutting requirements. This data is sent to the CoroPlus® Tool Guide, where calculations are made before being sent back to the Sustainability Analyzer.

"We can then give customers exact figures on their energy consumption, energy cost savings and $CO_2$ emissions," says Eurenius. "Equipped with this data, they can then make data-driven informed decisions on how to reduce their carbon footprint. Offering customers the ability to measure the climate impact from their machining operations will build a foundation for a more sustainable future."

"Successful manufacturers are those who recognize data as a primary asset for their company."

Data is delivered through a reporting system.


Recommendation
Cost per component
EUR
Savings
Additional cost
Tool room cost
Tool cost
Insert cost
Indexing/Replacement cost
Machine cost
Reference
Recommended
Savings
Total Cycle Time Per Component
Tested operations
coromant
Analysis per year
Reference
Recommended
92%
Productivity report
Wotan Industries ltd.


coromant
Productivity report
Wotan Industries Ltd.

# Metrology 3D inspections reduce setup times

The setup times in metrology 3D inspection processes can be significantly reduced through a combination of automated programming, CAD integration, simulation, flexible measurement strategies, pre-configured templates, and the real-time feedback offered by Metrologic Group's softwares Silma® and Metrolog®X4.

As an example, Figeac Aero, a Metrologic Group customer, combined Silma and Metrolog X4 for 3D inspections, cutting their setup time and metrology costs in half.

Prior to this solution, Figeac Aero used very basic software with no access to the virtual definitions of the parts, had a lot of manual entry work, and time-consuming programming.

"For the inspection of 3D parts of medium and large sizes, our needs were oriented towards a very powerful software in surface and geometric measurement. Given the numerous comparisons we make between the real part and the CAD, Metrolog X4 is one of the best," says Frédéric Moncet, Manager of 3D control, Figeac Aero.

Collaborative efforts and integration were necessary to address the inspection challenge.


Representatives from Sandvik and BBDO Nordics collect the prize at the 100 Watt gala.

The statue was created with AI.

# Statue campaign a winner

The Impossible Statue branding campaign has gained a lot of recognition lately. In April, it won the Chemicals and Industrials category at the EMEA Sabre Awards in London and it received a gold medal in the Employer Branding category at the Swedish PR gala Spinn. Also in the Employer Branding category, the statue campaign received a 50 Watt award at the 100 Watt gala in Stockholm in February.

"It is a huge honor to receive this award. This competition focuses on the effects of a campaign rather than just the creative output, which makes it even more fun," says Edvard Bergström, VP Relations and Production.

The campaign reached media in more than 66 countries, generated more than 900 published articles and over 25 million video views.

# Emergency response in the Philippines

Sandvik Mining and Rock Solutions' Sales Area South-East Asia distributed emergency supplies, including food and drinks, to 300 local families when a landslide hit Masara, a gold mining village in the southern Philippines, in February.

The landslide was the worst natural disaster to hit the Davao De Oro province in the last 10 years, and it buried 55 houses out of a total of 326 in the village, resulting in almost 100 fatalities.

300

Number of families to which emergency supplies were distributed.

Photo Johan Artursson



## Lego Master creates with Sandvik

What do a bird, a guitar and a statue share in common? In addition to representing recent Sandvik branding campaigns, each one has now been created by the Lego® Master, Emma Friman Browne.

She has designed, illustrated, and written instructions for the three Lego structures.

"There was a lot of trial and error, but the beauty of Lego is that it's a material you can reuse," she says.

All the instructions, with step-by-step illustrations, are available here: