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For people who are serious about mining

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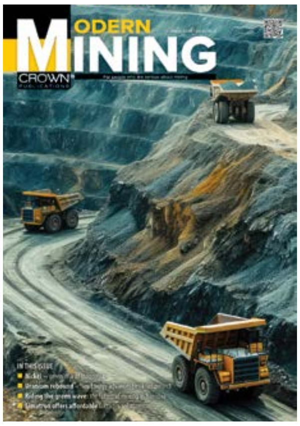

ON THE COVER

The prices for many key commodities remain mixed, with some showing a clear negative trend while others, like gold, bucked the trend.

Seeking 'greener' pastures

Have you noticed that, aside from the outflux of talent from Mzanzi, even corporates are heading out. A growing number of multinational corporations (MNCs) are setting up offices in Dubai to benefit from its business-friendly environment. The latest company to make a move is Thungela, which recently opened an office for its new export marketing team in Dubai.

The coal miner registered Thungela Marketing International (TMI) in mid-December 2023.

According to July Ndlovu, CEO of Thungela, the milestone is aimed at fulfilling one of the company's strategic objectives, which is to create future diversification options. TMI gives the company direct access to seaborne markets and helps it to strengthen relationships with its customers. "Our presence in Dubai is testament to the steps we are taking to realise geographic diversification and becoming a key player in the international market," he said.

Major cities such as Dubai provide best-in-class infrastructure and regional and international transport links.

Now, if only we had a business-friendly environment and functioning key infrastructure, not only mining but other industries would grow and thrive.

Adding to our woes is the recent news that South Africa recorded its lowest score on the Corruption Perceptions Index, with the country scoring 41 – two points below its 2022 score and below the global average of 43. The country now falls into the category of "flawed democracies".

South Africa's steady decline on Transparency International's Corruption Perception Index (CPI) indicates that corruption has become entrenched.

Meanwhile, with a score of 90, Denmark topped the rankings for the sixth year in a row, followed by Finland and New Zealand with scores of 87 and 85, respectively. Norway (84), Singapore (83), Sweden (82), Switzerland (82), the Netherlands (79), Germany (78) and Luxembourg (78) complete the top 10.

On a more positive note, the Department of Mineral Resources and Energy (DMRE) has finally announced the appointment of a service provider for a new cadastral system.

South Africa's share of global exploration expenditure has been declining and has remained at less than 1% for the past three years, well below more than 5% twenty years ago. The mining industry needs a vibrant exploration sector to replace the ounces and tonnes of the nation's minerals mined each year, the Minerals Council of South Africa said.

"The new cadastre will expedite the processing of prospecting and mineral right applications, shortening the adjudication of applications. We can anticipate a near-term positive turnaround in the prospects of the industry through increased investment and future growth of mining and stimulus to the economy," said Mzila Mthenjane, CEO of the Minerals Council.

The Minerals Council has estimated the backlog of more than 3000 prospecting and mining rights to have a pent-up investment value of more than R30 billion.

Nelendhre Moodley.

The March edition

In this edition, Liberum's Tom Price provides a highly enlightening column entitled *Nickel – 'green' risk of Indonesia* (pg 8) where he flags Indonesia's conundrum associated with clearing its rainforests to mine nickel – demand for which is underpinned by the clean energy drive and, in particular, battery technology.

On the topic of fostering a greener future, John Sisay, CEO of Ongopolo Mining, provides insight into mining in Namibia, as he discusses the topic *Riding the green wave: the future of mining in Namibia* (pg 14). Neo Energy, meanwhile, is set to benefit from the rebound in uranium demand as it looks to develop its flagship Henkries uranium project in the Northern Cape (pg 18). It is interesting to note that Japan, one of the world's top ten largest consumers of uranium, recently added the commodity to its list of critical minerals. The United States, China and France are the top three consumers of uranium.

Our Digital Mine feature showcases Simutron's affordable software solutions (pg 30) and Sandvik Mining and Rock Solutions as it pushes boundaries in drill, load, haul automation (pg 32).

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Orion acquires key surface rights at its New Okiep Mining, Flat Mines project

JSE-listed Orion Minerals has reached an agreement to access and acquire the surface ownership rights of properties owned by Mora Plase Proprietary (Mora Plase). These properties, known as Farm Nababeep and Farm Plaatjesfontein, overlie most of the area covering the Flat Mines Project where Orion's majority owned subsidiary, New Okiep Mining Company, holds a Mining Right and Prospecting Right applications at the Okiep Copper Project in the Northern Cape Province of South Africa.

Orion is progressing a Bankable Feasibility Study (BFS) for the Flat Mines Project and is progressing Prospecting Right applications on the surrounding area, where known mineral deposits present significant upside potential.

Importantly, this surface right access and ownership will allow Orion to optimise the location of surface infrastructure including roadways, underground access and ventilation holdings for the Flat Mines Project.

As a result of the acquisition, Orion will also immediately have access to undertake a drilling programme to confirm the expected metallurgical zonation and geotechnical assessments of the deposits Orion has included in the Flat Mines Project BFS, with the data expected to enhance and further de-risk the BFS outcomes.

Ownership of the surface area will also allow Orion to optimise ongoing Social and Labour Plan projects such as community agriculture while also providing suitable land to locate renewable energy generation, such as solar and wind plants, that are expected to deliver significant benefits for the future mining operations and to the surrounding communities. ■

Orion acquires key surface rights at its New Okiep Mining, Flat Mines project.

Giyani secures remaining $10m to finalise $26 million funding package

TSX-listed Giyani Metals, developer of the K.Hill battery-grade manganese project in Botswana, has finalised the US$26 million funding package to progress K.Hill to Final Investment Decision (FID). Danny Keating, CEO of the Company, commented:

"We are delighted to welcome ARCH as a shareholder and strategic partner to assist us in the long term development of K.Hill. Attracting a group with such strong ESG credentials rewards the hard work the team has undertaken to date and confirms our execution strategy. After completing an incredibly thorough due diligence process performed by world-class engineering, marketing, and social and environmental consultants, we are very excited to welcome two high quality investor groups to the company. Despite the difficult market conditions, the package we have secured minimises dilution for current shareholders and gives us the financing to fundamentally de-risk the project and unlock the massive value contained within K.Hill." ■

Giyani Metals CEO, Danny Keating.

Drilling being undertaken at the K.Hill project.

Anglo American to partner with GEM on electric vehicle battery technologies

Diversified miner, Anglo American, announced the launch of a research and development project in collaboration with GEM, one of China's largest battery and battery material recyclers, to explore new and more efficient technologies for the use of existing and alternative raw materials to be used in batteries for electric vehicles (EVs).

Paul Ward, Executive Head of Base Metals Marketing for Anglo American, said: "Our diversified portfolio includes a range of products critical to the long-term decarbonisation of transport – a sector estimated to account for over 15% of global emissions. We are collaborating with leaders in the sector to explore new technologies that build on the physical qualities of our portfolio of products to help tackle some of the key challenges facing the industry and contribute to the sustainable scale-up of EV travel.

"Our work in this space is part of our commitment to supply our customers with products tailored to their specific needs and that capitalise on the opportunities offered by ongoing technological innovation."

The project will focus on jointly developing metal dissolving technologies, using metals such as nickel, cobalt and manganese, to facilitate a more efficient use of battery materials, from either mined or recycled routes, with the intention of improving existing processes as well as exploring the use of new materials not currently employed in the battery value chain.

China is the world's largest EV market, with an expected eight million vehicles sold in 2023.

Anglo American is a key partner to the automotive industry, supplying the precious metals enabling catalytic converters to strip pollutants from car exhaust gases as emissions regulators become ever more stringent. ■

Anglo American to partner with GEM on electric vehicle battery technologies.

Africa's largest gold mine now also one of its greenest

Kibali Gold Mine, Democratic Republic of Congo.

Kibali, the largest gold mine in Africa, is now also one of the greenest mines on the African continent, Barrick chief executive Mark Bristow told media recently.

Much of the electricity that drives Kibali is supplied by its three hydropower stations. Once the mine's new 16-megawatt solar plant and additional battery energy storage infrastructure, designed to back up the hydropower supply during the region's dry season, are commissioned, it is expected the mine's overall renewable electricity supply will increase from 81% to 85%, and for six months of the year its electricity demand will be met entirely by renewable energy.

"Bearing in mind that Kibali is also a leader in automation, the mine is a real role model for mining in Africa. As a long-standing partner of the Democratic Republic of Congo (DRC), we built Kibali in the remote north-east of the country, opening up a new mining frontier and, in the process, also promoted the development of a flourishing local economy," Bristow said.

"This partnership has been particularly beneficial for the DRC. Our total in-country investment to date in the form of royalties, taxes, dividends and payments to local suppliers amounts to $4.7 billion."

AECI celebrates centenary and maps out fresh strategy

This year marks a significant milestone for AECI Limited as the JSE-listed business commemorates a century of shaping industries and ground-breaking solutions. Established as African Explosives and Industries (AE&I) on 20 March 1924, the company has evolved from its origins as an explosives provider for South Africa's growing mining sector into a global leader in the chemicals and mining industries. AECI's influence now extends across Africa, Europe, South East Asia, North America, South America, and Australia, representing a journey marked by growth, diversification, and international prominence.

Holger Riemensperger, Group CEO, attributes the enduring success of AECI to its unwavering solution-focused value proposition and dedication from its workforce. Riemensperger describes AECI as a remarkable success story founded on unique customer relationships and an exceptional ability to adapt to evolving global landscapes.

Anchored in the pillars of people and culture, operational excellence, and portfolio optimisation, the new strategy reflects AECI's commitment to maintaining its pioneering spirit.

Riemensperger acknowledges that AECI's longevity is a result of consistent production of safe, reliable, and quality products, coupled with deep expertise and knowledge.

With a keen eye on mining as the primary growth focus, AECI plans to restructure its chemicals business to provide operational and financial support, driving growth in the mining sector.

AECI celebrates centenary in business.

Recognising that this will be a multi-year journey, Riemensperger is confident that it is the best path for AECI.

Mantengu shareholders pave the way for immediate access to R500m funding

Mantengu Mining, a resource investment company, has obtained 98.85% shareholder support in its General Meeting to obtain the final approvals required to gain immediate access to its R500 million equity facility. The final approvals, which ensure that Mantengu has this funding at its disposal, will enable it to expand and optimise its current operations and aggressively pursue new investment opportunities.

Mantengu Group CEO Mike Miller says: "The R500 million committed funding provides Mantengu with the financial muscle, flexibility, and speed to tackle investment opportunities in its focus on mining, mining services and energy sectors. These are critical funding facets required to tackle the speed at which the South African landscape is continually changing. Mantengu fundamentally believes that significant value is untapped in small to large opportunities within these sectors. Given South Africa's faltering economy and liquidity crisis, we are confident that the committed funding arms Mantengu with the requisite edge to invest in such opportunities at a time when the economy and the mining sector will benefit from inflows of much-needed foreign capital." ▪

Mike Miller CEO Mantengu Mining.

Resolute announces maiden mineral resource at Tomboronkoto

Resolute announces maiden mineral resource at Tomboronkoto.

ASX-listed Resolute Mining has provided an update on its Senegal exploration prospects, including a maiden Inferred Mineral Resource Estimate at the Tomboronkoto (Tombo) project. Resolute has been focusing on three potential satellite deposits that could result in an extension to the Mako mine. These are Tomboronkoto and the prospects at Bantaco and Laminia where joint venture agreements have been concluded.

Terry Holohan, CEO commented: "We are very pleased to report the progress we are making in Senegal to extend the life of our Mako operation with three projects now close to our mine and within the same Greenstone Belt following the recent successful conclusion of the two JVs. In 2024, we will be stepping up our overall exploration efforts on these exciting projects, which have well known areas of outcropping mineralisation, and we expect further progress updates throughout the year. The completion of the maiden Inferred Mineral Resource at Tomboronkoto within six months is a significant achievement and reflects the efforts and ability of our exploration and operations teams on the ground." ▪

DMRE announces service provider for new cadastral system

Mzila Mthenjane, CEO of the Minerals Council.

The Minerals Council South Africa welcomes the appointment of a service provider to design, implement and support a mineral rights system to address one of the major hurdles constraining exploration, mine development and growth of the local mining industry.

The Department of Mineral Resources and Energy's announcement that it has finalised the appointment of a three-company consortium to install the system comes after several years of lobbying by the Minerals Council for the dysfunctional South African Mineral Resources Administration System (SAMRAD) system, introduced in 2011, to be scrapped and replaced with an off-the-shelf, transparent and efficient system to revitalise South Africa's exploration sector and the development of junior and emerging miners.

South Africa's share of global exploration expenditure has been declining and has remained at less than 1% for the past three years, well below more than 5% twenty years ago. The mining industry needs a vibrant exploration sector to replace the ounces and tonnes of the nation's minerals mined each year.

"The new cadastre will expedite the processing of prospecting and mineral right applications, shortening the adjudication of applications. We can anticipate a near-term positive turnaround in the prospects of the industry through increased investment and future growth of mining and stimulus to the economy," says Mzila Mthenjane, CEO of the Minerals Council. ▪

Nickel – ‘green’ risk of Indonesia

By Tom Price, Head of Commodities Strategy at Liberum

Rightly or wrongly, one motivation to buy an electric vehicle (EV) – rather than a conventional internal combustion engine (ICE) vehicle – is the promise that your decision might help pare transport-related emissions. This belief has been central to EV advertising pitches since these vehicles emerged in 2015 as commercial alternatives to ICEs.

With global EV sales set to grow by over 40% year-on-year in 2024 to almost 20 million units – representing 22% of all vehicle sales – the EV paradigm now seems secure.

But there’s a glitch. Two-thirds of the batteries used in EVs feature nickel-bearing technology; almost 60% of the world’s annually-mined nickel is extracted from the rainforests of Indonesia; and commodity markets are just starting to price ‘green premia’, valuing the ESG credentials of traded metals (copper, aluminium, steel).

So, what sort of premium could be achieved for rainforest-sourced nickel, requiring energy-intensive processes to isolate it from its lateritic matrix? Here, we look at the world’s growing dependency on Indonesia’s nickel exports, and explain how batteries now rival stainless steel as nickel’s first-use driver.

Indonesia – centre of global nickel supply

Over the past decade, Indonesia has emerged as the world’s largest source of nickel, the outcome of a national government policy enforced in 2014 – effectively directing foreign investors of its mining industry to build downstream processing capacity in-country.

While many players have been involved in the development of this mining hub (nickel, tin, copper, gold, coal), China has been the single-largest national investor in Indonesia’s nickel industry, via its ‘Belt-and-Road’ policy – almost US$20bn spent to date, with another $20bn pledged for broad-based infrastructure purposes, and to ‘strengthen ties’.

As a result, Indonesia’s nickel industry has evolved from being a modest contributor to global supply (15%, pre-2009) to delivering an increasingly complex collection of refined products (nickel-bearing alloys, semis, powder, mixed-hydroxide, sinter, etc.) and stainless steel (>3mtpa; 300-series).

Indonesia also has a pipeline of over 500 ktpa (>20% growth in total supply) of total high-pressure acid leach (HPAL) capacity being deployed before 2030, to supply the battery industry with nickel-/cobalt-bearing feedstock.

All up, Indonesia’s current rate of almost 2 mtpa of contained nickel production/exports represents 57% of the world’s mined nickel; 45% of its refined supply; 6% of total stainless-steel supply vs. 2014’s corresponding global shares of 8%, 1% and 0%.

Rainforest resources

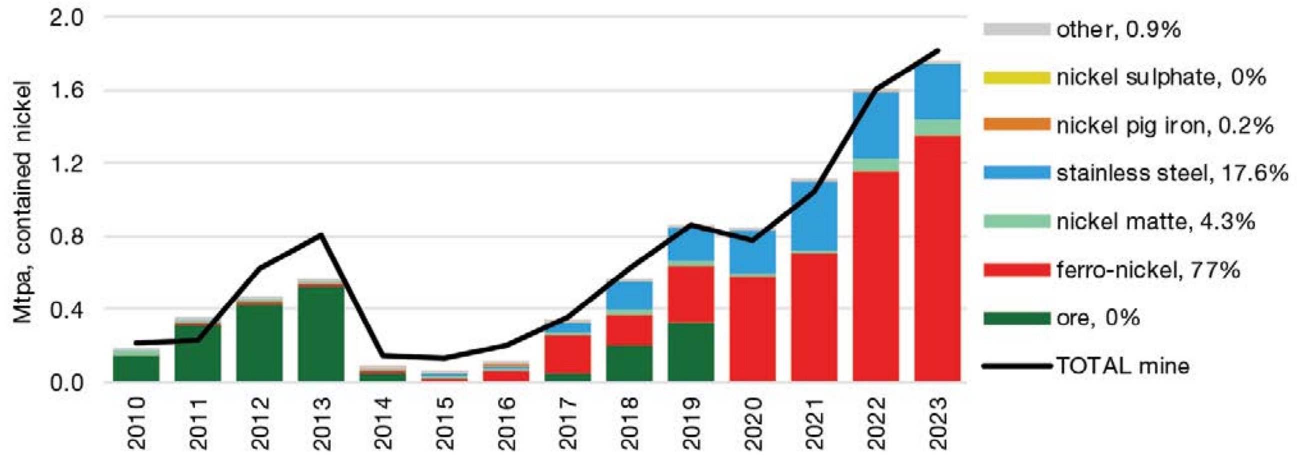
Ok, so there’s spectacular industrial and trade growth being reported for Indonesia’s economy. But do ‘green-minded’ EV drivers worldwide know that the nickel in their car’s battery probably comes from beneath a rainforest? For, Indonesia’s key nickel mining operations are located on the tropical island of Sulawesi, with minor operations on the neighbouring islands of North Maluku and Kalimantan.

Two-thirds of the batteries used in EVs feature nickel-bearing technology.

To access and process Indonesia’s nickel-bearing lateritic ores (deeply weathered geology; high iron- and clay-content; grades 0.8-1.2% Ni), all operations require substantial rainforest areas to be cleared, before ore processing and overburden/waste disposal capabilities can be installed.

To summarise the irony here: oxygen-producing, fauna-/flora-rich rainforests of Indonesia are being cleared to access a particular metal – that is being isolated by a massive, still-growing, coal-fired refining industry – used in EV batteries, which we’re told will help us reduce our impact on the global environment.

Indonesia's contained nickel exports, by key product type vs. contained nickel mine output



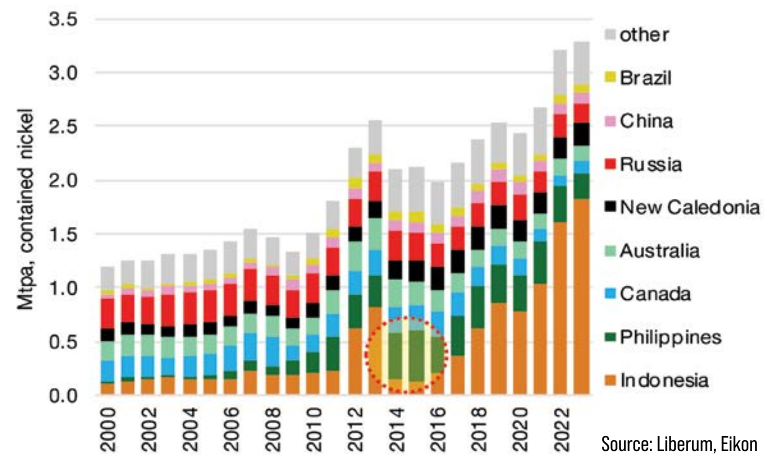
Source: Eikon, Bloomberg; %-shares vs. 2023e total; 'other' = Ni-bearing alloys, semis, powder, MHP, sinter, scrap; stainless steel = all 300-series

Price of being 'green'

What can be done to reduce the environmental impact of Indonesia's nickel mining industry? Yes, its mining practises are already overseen by various government authorities. But even tightly regulated activities can report large-scale disasters. Just last September, authorities of Indonesia's North Maluku sought to suspend operations at its nickel mines on unresolved environmental issues.

Could a market-based solution mitigate Indonesia's mining risk? In recent years, we've seen a pricing phenomenon appear in global commodity markets: the 'green' premium. Those metal producers who can demonstrate that their brand carries ESG-friendly features (relatively small carbon footprint, non-artisanal sources, etc.) can be awarded a green premium (e.g. aluminium, copper, cobalt, steel).

Global nickel MINED production (Mtpa)



Source: Liberum, Eikon

Right now, the key demand growth driver for Indonesia's nickel is Battery World, less so its traditional end-use of stainless steel (>70% of all first-use). It follows that if the global EV industry ever seeks to 'green badge' its raw materials supply chain (principally, copper, nickel, lithium, cobalt), the policy could undermine the demand of Indonesian-sourced nickel – given its rainforest provenance.

Supply at risk

Realistically, any 'green'-prompted structural shift would probably take years to report to the world's nickel trade, particularly given this metal market's heavy dependence on Indonesia's supply. Nevertheless, the EV-related portion of Indonesian nickel supply at risk of such a policy shift can be estimated:

- ❑ Indonesia's nickel supply: 2024 total of 2 mt of contained mined nickel (up 5%YoY; 57% of global total supply); 1.4 mt of refined nickel (metal & intermediate; +6%YoY, 39% of global total).
- ❑ Indonesia's Ni-bearing stainless steel: produces 100% 300-series (8% Ni) stainless steel; 3.5 mtpa, requiring 300 ktpa nickel (incl. conversion loss).
- ❑ Residual flow for battery demand: therefore, refined supply minus stainless steel's nickel requirement implies that a maximum 1.1 mt of residual nickel supply, or 30% of global mined supply, is both available to the battery industry and at risk of being marginalised by 'green badging' of EV World's Indonesian nickel source.
- ❑ Ex-Indonesia's nickel projects: what portion of Indonesia's nickel production can be replaced by other sources? Based on current reports of credible mine projects, we estimate >500 ktpa of contained metal output (15% of global total mined) from 24 projects (Australia, Brazil, Canada, Cuba, Finland, South Arica, Tanzania, US, Vietnam, etc.) – or about half of Indonesia's 'at risk' supply.

Nickel's fundamental outlook

- ❑ For 2024, we forecast total global refined nickel demand of 3.1 mt (down 6%YoY), and total global refined nickel supply of 3.5 mt, implying a substantial market surplus of 0.4mt (13% of demand).
- ❑ Nickel's metal price has remained under pressure throughout 2023, down 45% to below US$17k/t-$7.5/lb, partly on weak fundamentals (Indonesia's nickel pig iron and sulphate surplus), partly on central bank inflation-targeting rate hikes (lifts cost of metal exposure).
- ❑ Price falls across nickel's tradeable products are now exposing the industry's high-cost assets: Sep-2023, GLEN cut funding 25 ktpa Koniambo; Jan-2024, BHP flagged cost controls for Nickel West + Wyloo Metals' Kambalda closures.
- ❑ We remain nickel price bears on US Federal Reserve's persistently hawkish cash rate policy, China's weak economic activity, and Indonesia's relentless supply growth. ■

Copper and cobalt markets in 2024

By Benedikt Sobotka, CEO of Eurasian Resources Group and Co-Chair of the Global Battery Alliance

In 2023, prices for many key commodities were mixed, with some showing a clear negative trend while others, like iron ore and copper, bucked the trend. The reasons for this disparity were varied: a combination of local factors specific to each market and the slower than expected pace of China's growth re-acceleration.

The copper market is well-positioned for higher price levels.

An unexpected boon though has been the resilience of the US economy, particularly against the difficult backdrop of consistently high interest rates.

As we welcome 2024, there are pockets of positivity: market analysts consider that there will be a 'soft landing' for the US economy and healthy confidence overall in the global economy. Taking copper and cobalt specifically: the copper market is well-positioned for higher price levels, reflecting strong market fundamentals and increasing demand, driven largely by the necessary continued focus on green infrastructure and renewable energy.

The cobalt market looks set to weather a dynamic and resilient trajectory, with clear strategic shifts in global EV dynamics and increasing demand across a range of sectors setting the stage for growth in 2024.

Key takeaways:

- Demand for copper is expected to grow by 4% y-o-y in 2024; demand for cobalt by 15%.
- The copper market in 2023 shifted from a projected surplus to a deficit, driven by global supply challenges and rising demand.
- Entering 2024, strong market fundamentals, including green energy initiatives, are positioning copper for further growth and higher prices.
- Demand for copper in China rose by nearly 7% YoY in 2023, thanks to positive economic stimulus and easing of Covid-19 restrictions.
- Demand for cobalt is expected to grow by 15% in 2024 on a y-o-y basis.
- Globally, batteries that contain cobalt maintain market share, driven by a strategic shift in Western EV supply chains aiming to decouple from Chinese counterparts.
- EV sales are continuing to increase at double-digit rates, with projections indicating that in 2024, 21% of total car sales will be EV. While there was less demand for cobalt in the portable electronics sector in 2023, we expect to see a far greater demand this year due to anticipated high levels of replacement products.

Demand for commodities is being driven by continued focus on green infrastructure and renewable energy.

Louise Street, Senior Markets Analyst at the World Gold Council.

Geopolitical and economic uncertainty bolster gold demand and prices in 2023

The World Gold Council's *Gold Demand Trends* report reveals that annual gold demand (excluding OTC) fell to 4 448 t in 2023, down just 5% from a notably strong 2022. When factoring in demand from the OTC markets and other sources, total demand climbed to a new annual record at 4 899 t. Investment from this opaque source of demand supported 2023's highest annual average gold price on record.

The central bank buying streak continued from 2022 at a blistering rate. Demand reached 1037 t last year, making it the second highest on record, down just 45 t on the previous year.

In contrast to robust OTC and central bank demand, ETF outflows continued in 2023, losing 244 t in a third consecutive year of decline, with outflows in Europe dominating the picture.

Turning to bar and coin investment, demand was subdued and down 3% as strength in some markets worked to offset weakness elsewhere. European demand continued to plumet, down 59% year-on-year. This decline was offset by a strong post-Covid recovery in China, where annual demand was up 28% to 280 t; combined with notable increases in India (185 t), Turkey (160 t), and the US (113 t).

The global jewellery market proved to be remarkably resilient amidst record-high prices as demand inched up by 3 t year-on-year. China played an important role, recording a 17% increase in demand for gold, as it recovered from Covid-19 lockdowns, offsetting a 9% decrease in India.

Mine production was relatively flat in 2023, up 1%. Recycling increased by 9%, which was lower than expected given the high gold price, and drove total supply up 3%.

The global jewellery market proved to be remarkably resilient amidst record-high prices.

Louise Street, Senior Markets Analyst at the World Gold Council, commented:

"Unwavering demand from central banks has been supportive of gold demand again this year and helped offset weakness in other areas of the market, keeping 2023 demand well above the ten-year moving average."

"In addition to monetary policy, geopolitical uncertainty is often a key driver of gold demand and in 2024 we expect this to have a pronounced impact on the market. Ongoing conflicts, trade tensions and over 60 elections taking place around the world, are likely to encourage investors to turn to gold for its proven track-record as a safe haven asset.

"We know that central banks often cite gold's performance in times of crisis as a reason to buy, which suggests demand from this sector will stay high this year and may help to offset a slowdown in consumer demand due to elevated gold prices and slowing economic growth." ▪

Mine production was relatively flat in 2023, up 1%.

John Sisay, CEO of Ongopolo Mining.

Riding the green wave: the future of mining in Namibia

By: John Sisay, CEO of Ongopolo Mining

With some of the world's largest unexplored reserves of lithium, copper, and uranium, Namibia's mineral resources are essential in our net-zero carbon world. Though this is also true for other countries in the region, such as South Africa and Zimbabwe, what sets Namibia apart is its government's sustainability driven mining regulation and reliable energy supply. The combination of rich deposits, power that stays on, and forward-thinking policies create fertile ground for investment.

Namibia should serve as a model for other African countries. The blend of resource protection, progressive regulation, environmental consciousness and community engagement forms the recipe for drawing foreign investment into Africa's mining sector. This not only cultivates growth within the nation and the wider region but also solidifies Namibia's standing as a regional leader in this context.

What makes lithium, copper and uranium, among Namibia's other mineral resources, the minerals of the future? Lithium and copper are key components in the production of items powered by electricity – from electric vehicles to wind turbines. They are also key components in the production of items that are increasingly central to the global energy transition; while uranium is the fuel most widely used to generate nuclear power. As global demand for renewable energy technologies and high-tech appliances grows, these minerals are becoming increasingly critical. Despite a temporary market downturn, the future trajectory points towards a significant rise in demand. By 2025, renewables will provide 10 799 TWh per year - 35 per cent of total global electricity demand.

Namibia appears to be the next hotspot for the African gold rush; however, there are still significant changes required to grasp the opportunity ahead. To realise the sector's full potential, substantial investment is needed in production and smelting infrastructure for green mineral extraction to keep up with regulations and global demand.

Mining has long been a cornerstone of Namibia's economic landscape. Since the passage of the Minerals Act, thirty years ago, the government has played a central role in the industry, growing to the heights it has reached today. And this is no coincidence.

Mining makes up 10% of Namibia's GDP every year, serving as a key source of foreign exchange revenue. The sector plays a pivotal role in job and wealth creation and has consistently demonstrated robust and steady growth. Indicatively, the mining share of Namibia's GDP grew from $6.35 billion in the first quarter of 2023 to $6.62 billion in the second quarter.

This share of GDP is set to grow further with Namibia's decision to ban the export of unprocessed ore. The

Residual Heap leach at the SX and EW plants.

move is a crucial turning point for the economic trajectory of the country – turning it from an exporter to a producer. The regulation promotes local processing facilities, improving economic prospects for Namibians.

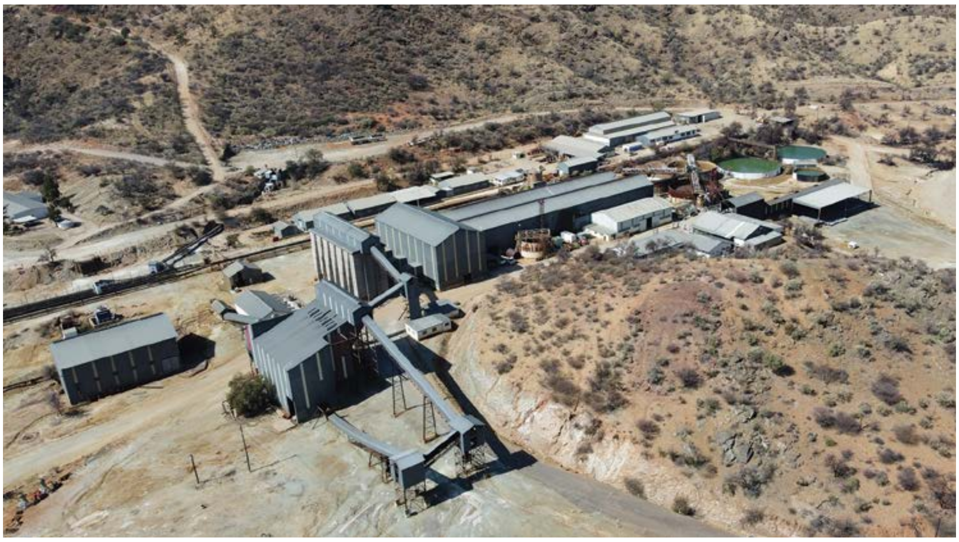
Despite how the market reacted initially, the policy stands as a model for sustained success and other African countries are following suit. By processing minerals locally, not only is a larger share of the value chain captured, but it also drives growth in related industries such as manufacturing, technology, and renewable energy. Producing products as close to the source as possible will reduce mining's carbon footprint and boost processing, allowing communities to retain more of the gains from extraction. It's not about mineral protectionism, rather protecting Namibia's future.

Sustaining copper prices at or above $10 000 per ton is also crucial to address the rising worldwide demand, driven by the transition to electrification and cleaner energy sources. Keeping prices at a level encourages investment and incentivises production. Namibia's newly implemented beneficiation policy positions the government as a price stabiliser, thereby playing a vital role in long-term strategic planning. This active involvement is designed to protect the local market, attract investments, and address market volatility.

Namibia's mining sector is intricately linked to

Production of copper will restart at Tschudi open pit in 2024.

Central mine's operations, including crushing, milling and flotation circuit.



Tschudi open pit lookout point.

international commodity markets – particularly prices of richly endowed commodities including diamonds, uranium, copper and zinc. Forward-thinking investors willing to commit significant capital expenditure stand to gain the most from Namibia's abundant resources.

The government's efforts to offer incentives for mining, including prompt VAT reimbursements and a transparent – soon to be totally digitised – licensing system, demonstrate a dedication to fostering growth and ensuring lasting resilience. 2023 was a turning point in the local industry, and Namibia is positioning itself to become the next Zambia over the coming decade.

To do so, a robust workforce is needed. Namibia has faced less of a brain-drain than its neighbouring countries; however, there is a skills gap to be filled to properly resource the growing mining industry. The ban on unprocessed exports alongside public/private skills-training initiatives, will create employment opportunities for the local population and encourage skilled workers to stay within the country. In essence, the government's policies ensure that mining does not only extract wealth but also adds value – deepening the economic impact.

Namibia's commitment to mining practices that align with environmental, social, and governance (ESG) standards is instrumental in solidifying its position as a power player of the green transition. How the government views these policies as essential pillars for success in a contemporary mining economy, rather than as discretionary measures, is what sets Namibia apart regionally.

Community engagement, environmental conservation and social responsibility are a business imperative for Namibia, not just a compliance measure. There is widespread recognition of the business potential emerging from engagement in these areas, and the government is proactively responding to capitalise on them through regulation.

These policies exhibit notable strengths, such as a consolidated and extensive geological database to uphold environmental standards along with provisions that incentivise mining companies to prioritise the employment of Namibians, focusing specifically on women and individuals who have faced historical disadvantages. This strategic approach streamlines enforcement and enhances security for investors.

From policy to people to profit, Namibia's mining sector is a compelling and attractive destination for investment. Its legislative and political environment stand out as the primary differentiators, with available reserves following closely. Namibia has a solid historical standing as one of the safest countries in Africa, and this stability and low political risk make the country desirable to foreign investors.

Namibia's mining landscape is marked by the successful implementation of substantial projects such as the Husab Uranium Mine and the Twin Hill Gold Projects. Not to mention Ongopolo Mining, my company's copper exploration just outside of Windhoek and in Tsumeb. These ventures highlight the country's appeal for mining investments and underscore the effective integration of its infrastructure. Namibia stands as a testament to the synergistic relationship between ambitious mining projects and the supportive foundation provided by the nation's infrastructure, solidifying its position as an attractive mining hub.

The country boasts excellent roads, ports, and a growing solar power grid which, combined with its educated workforce, make it an ideal location for mining investment. To fully unlock the sector's potential, Namibia is proactively directing new investments towards areas where it has gaps, particularly in the development of production and smelting infrastructure for sustainable minerals such as copper and other crucial components for the electric transition. To truly catalyse this opportunity and prepare for upcoming global demand for green-transition minerals, an upswing in foreign investment is needed.

Namibia should serve as the model for other African countries. Through progressive regulation that allows Namibians to profit from their country's resources, protects their land and water supplies, and empowers workers and communities, Namibia's government has created a recipe for drawing foreign investment into Africa's mining sector. This not only cultivates growth within the country and the wider region but also solidifies Namibia's standing as a regional leader. This is addition to prompt VAT reimbursements and the ability to secure a mining license in a timely manner. Investors would do well to recognise and capitalise on the opportunity, before they miss the boat. ■

Uranium rebound – Neo Energy advances Henkries project

Having recently listed on the LSE, Neo Energy Metals, a new uranium and strategic metals focused mining and development company, which is advancing its flagship Henkries uranium project in the Northern Cape, is eyeing an inward African listing sometime this year, CEO Sean Heathcote, tells *Modern Mining*.

Sean Heathcote, CEO of Neo Energy Metals.

Located 80 km north of the town of Springbok, the Henkries project is an advanced, low-cost uranium project with a clear pathway to production. Following its listing on the LSE in November 2023, where it benefitted from global liquidity, Neo Energy is now eager for a secondary listing on the local bourse.

"We are committed to developing a long-term future in South Africa and a listing on a local exchange will give South Africans direct access to a uranium project developer."

Discussing the LSE listing, Heathcote explains that it chose the LSE, which hosts a very small number of uranium companies, to bring Neo Energy to the market as the sole uranium exploration and development player listed on the main board.

Uranium bull run

While the uranium market faced several challenges in the past, given that during periods of resurgence the industry experienced two key nuclear power plant accidents, as well as the financial crisis of 2008, these days, the commodity's fortune is on the rise.

"Nuclear incidents changed the course and appetite for the development of nuclear power stations, which subsequently impacted demand for uranium."

The incidents included: the Three Mile Island in 1979, Chernobyl in 1986, and Fukushima in 2011, all of which impacted the development of the Henkries project at the time.

On a more positive note, Heathcote says there's no better time than the present to be a uranium mine developer. He explains that the resurgence in demand for uranium and the commodity's subsequent surging price profile is underpinned by the global drive for a transition to cleaner base-load energy.

"As governments make the jump from fossil fuels to clean energy sources, uranium is emerging as a fitting transition solution for base-load energy needs until the grid technology can be upgraded to handle renewables."

According to Heathcote, the perception towards nuclear has changed dramatically, "to the point where the former head of Greenpeace, Patrick Moore, is now promoting nuclear as the new baseload fuel", a pivot that further endorses the acceptance of nuclear energy as a suitable power source.

According to the World Nuclear Association (WNA), demand for uranium, which is used in nuclear reactors, is expected to climb by 28% by the year 2030 and nearly double by 2040 – this, as governments ramp-up nuclear power capacity to meet zero-carbon targets. Interest in nuclear power has gained further traction since Russia invaded Ukraine with several nations now looking for alternatives to Moscow's energy supplies, the WNA's biennial

Nuclear Fuel Report

"This is a great time to be developing uranium projects and, since 2018, there has been a massive drive for increased installations of nuclear reactors. In fact, there are an estimated 440 nuclear reactors currently powering power plants globally, with another +60 under construction and more than 100 in the planned phase."

Neo Energy Metals recently listed on the London Stock Exchange.

Heathcote adds that several governments are keen to revive nuclear power plants that were on care and maintenance, with Japan announcing the restart of all its nuclear reactors and the development of new reactors.

"At COP28, 21 nuclear power producing countries pledged to triple their installed capacity by 2050. Moreover, the US ban on Russian nuclear fuel means they will be seeking new sources of uranium outside of Russia, including from the African continent."

Further to this, owing to challenges related to accessing acid and mining productivity, two of the world's largest producers of uranium – Kazatomprom and Cameco – have lowered their near term production forecasts at a time when uranium demand is set to sky-rocket.

"With the resurgence in demand for nuclear power by nuclear generating countries, the WNA has forecast a deficit of around 30 to 40 million pounds of uranium by 2040, which includes demand emanating from the re-start of all new production, indicating demand for uranium will remain robust for several decades. As it stands, the uranium market is possibly the best it has been in the past 30 years."

According to Heathcote, this fundamental shift in the clean energy market sees uranium prices hitting the sweet spot. "Since Neo Energy listed in November 2023, the price of uranium has rocketed

A view of the Henkries project area.

Exploration trenches with ore exposed.

feature

Neo Energy core samples.

Drilling underway at Henkries project.

from $50 a pound in October to over $105 a pound currently. Expectations are that the uranium market will be in a structural deficit for the next 20 to 30 years."

Henkries Uranium Project

Discovered by mining major, Anglo American, in the early 1970s, the Henkries project was taken up the value curve by the diversified miner, which drilled some 12 000 metres worth of holes, 211 test pits and undertook 6 months' worth of pilot plant tests work on acid and alkali leaching.

"Anglo American embarked on an extensive drilling programme in the region – we estimate the value of work undertaken to be as much as $30 million. The feasibility study produced showed the project to be attractive enough for Anglo American to be on the verge of establishing a uranium processing plant when the Three Mile Island incident occurred and subsequently devastated the nuclear energy sector with investment in uranium also taking a dive."

The project was later acquired and upgraded by Niger Uranium, Namakwa Uranium and Desert Star respectively.

Neo Energy acquired the Henkries project, a 742 km^2 prospecting right in October 2021, which it believes to be one of the most advanced uranium assets capable of near-term production.

Since the acquisition, Neo Energy has raised sufficient funds to list on the LSE and advance the project.

Although the Henkries project is regarded as "small" by global uranium project standards with 4.7 million pounds of uranium in the ground, Heathcote argues that when coupled with surface samples of unanalysed material, the asset has a reserve base that is "probably closer to six million pounds in the ground". The company is about to engage in drilling activities that are expected to lift the uranium reserve estimate to 10 million pounds.

"The small-scale nature of the Henkries project translates to a low capex requirement and a small footprint, with a further project benefit being that the resource is close to surface – with the bulk of the deposit between five and eight metres from surface, which negates the need for drilling and blasting. Essentially, it's a matter of removing the overburden using a bulldozer. The total length of the current resource is roughly seven kilometres, which is less than 10% of the total strike length, where we anticipate there's likely to be more uranium."

Several prospective properties lie adjacent and around the Henkries project.

"Although we have identified a number of properties of interest in the area, we remain focused on developing the Henkries project, after which we will embark on expanding our footprint to either increase our production profile or the life of mine."

Importantly, the Henkries project benefits from well-established key infrastructure, including power, water, and roads.

Aside from well-established road infrastructure, a 20 kVA powerline runs across the deposit. Moreover, the project is located just two kilometres from the Orange River and has a water pipeline that traverses the Henkries property.

The project is also surrounded by several communities that offer skilled labour options.

Advancing Henkries

The next step for the new kid on the mining block is to increase the size of the resource by drilling another 6 500 m, updating the mineral resource estimate (MRE) and the projects' capital and operating costs, as it targets a development decision by the "end of 2024 or earlier".

After completing a Preliminary Economic Assessment, Neo Energy will initiate a full feasibility study, which is scheduled for completion before year-end. An environmental impact assessment (EIA) will run in parallel and is earmarked for completion early next year, after which the company will apply for a mining right.

"After updating the PEA, we will be engaging with our key investors to determine their appetite for fast-tracking project development to significantly shorten the above timelines."

Despite the DMRE's snail's pace in awarding mining licences, Heathcote remains optimistic, stating that "in our worst-case scenario, we anticipate the award of a mining right by 2025 and a move into construction and production shortly thereafter."

Heathcote advises that the bulk of the project development will be undertaken by South African expertise, including drilling, engineering and project construction, which, he says, translates to investment flow into the country and in particular the Northern Cape, which is considered to be one of the least developed provinces in South Africa.

The company recently appointed Loni Gallant as Exploration Manager, bringing with her 20 years of mining industry experience, across commodities, including uranium, throughout Africa.

But does the attractiveness of the Henkries project translate to an appetite by investors to fast-track project development?

"As it stands, if we go to market with a project of this size, I believe it will be regarded as a highly feasible and economically viable project with robust returns. Moreover, we have options for ground in and around the region."

Heathcote adds that there are also options to acquire land in Guinea, Zambia, Canada, and Namibia; however, the immediate focus is to upgrade the Henkries project and bring it into production before the company considers exploiting other opportunities.

"Following a decade long under-investment in the uranium sector, both the uranium market and Neo Energy's advanced Henkries Uranium Project are well positioned to benefit from the robust rebound," concludes Heathcote. ■

World uranium mining production

- About two-thirds of the world's production of uranium emanates from Kazakhstan, Canada, and Australia.
- In 2022, Kazakhstan produced the largest share of uranium from mines (43% of world supply) but only hosts 12% of the world's resource base, followed by Canada (15%) and Namibia (11%).
- An increasing amount of uranium, now over 55%, is produced by in situ leaching.
- Historically, South Africa used to be a significant producer of uranium, which was as a byproduct of gold.

Lumwana open-pit operation.

Barrick's chief executive Mark Bristow.

Lumwana Super Pit project on track for first production in 2028

Gold major, Barrick Gold's Lumwana copper mine's Super Pit expansion project has been accelerated with first production now scheduled for 2028, Barrick's chief executive Mark Bristow advised Zambian president Hakainde Hichilema at their meeting recently.

The project will transform Lumwana into one of the world's major copper mines, with projected annual production of around 240 000 tonnes per year over a +30-year life. It is a key component of the Zambian government's drive to revive the country's copper industry over the next 10 years. The estimated cost of the project is almost $2 billion and construction is scheduled to start towards the end of this year.

Since Barrick refocused its strategy in 2019, Lumwana, the once struggling mine, has been restructured and re-engineered into a significant contributor to Barrick's expanding copper portfolio. The ramp-up of the reopened Malundwe pit and completion of the transition to owner mining supported the achievement of its production guidance for 2023, the company said.

Since 2019, Lumwana has contributed almost $3 billion to the Zambian economy in the form of royalties, taxes, salaries and the procurement of goods and services from local businesses.

Local procurement of $472 million in 2023 made up more than 81% of total spend for Lumwana.

Barrick has also launched a Business Accelerator Programme designed to build the business capacity of the Zambian contractors in its supply chain, equipping them to grow and diversify their enterprises and remain sustainable beyond Lumwana's life of mine.

"In line with Barrick's partnership philosophy, our REDD+ initiative will uplift our host communities through conservation of the natural forest surrounding the mine. Resources have already been allocated and engagement with the communities is underway. We are in discussion with the Ministry of Green Economy and Environment to facilitate the required licensing and our partnership with local government," Bristow said. ■

The Lumwana processing facility.

feature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Achieve astounding productivity with the A60H. This machine is the ultimate hauler, featuring 100% off-road performance, proven Volvo technology and impressive payload – contributing to sustainable operations, year after year. Designed for heavy hauling in severe off-road operation, the Volvo A60H's long service life, quality, reliability and durability is everything you expect from a Volvo.

TAKRAF Group secures major project award for iron ore project in Mauritania

TAKRAF Group, a leader for innovative technological solutions for the mining and associated industries, recently signed a major contract with *Societe Nationale Industrielle et Miniere* (SNIM) for the supply of a complete iron ore crushing, screening, and material handling system, along with a train loading station for the F'Derick project in Mauritania.

TAKRAF Sales Manager, Norbert Neumann, alongside SNIM Director Projects, Ahmed Ould Mohamed Ahmed and TAKRAF's local representative Mohamed Saleck Haidalla (right).

The F'Derick iron ore deposit, known for its natural richness in hematite, is part of SNIM's iron ore complex in Mauritania. SNIM aims to increase its current production of approximately 12 million tons per annum to 18 million tons through the development of the F'Derick project, thereby contributing to the country's iron ore production.

The contract, signed at the end of 2023, marks a key milestone as SNIM begins development work on site. An inauguration ceremony was held in the presence of Mauritanian President of State, Mohamed Ould Ghazouani, underscoring the importance of this collaboration.

Highlights of TAKRAF's scope of supply include:

Lot 1

- Primary crushing plant
- Apron feeder
- Belt conveyor CV-1
- Secondary crushing plant with pre-screening
- Belt conveyor CV-2 and transfer tower TT-1
- Required auxiliary systems and accessories

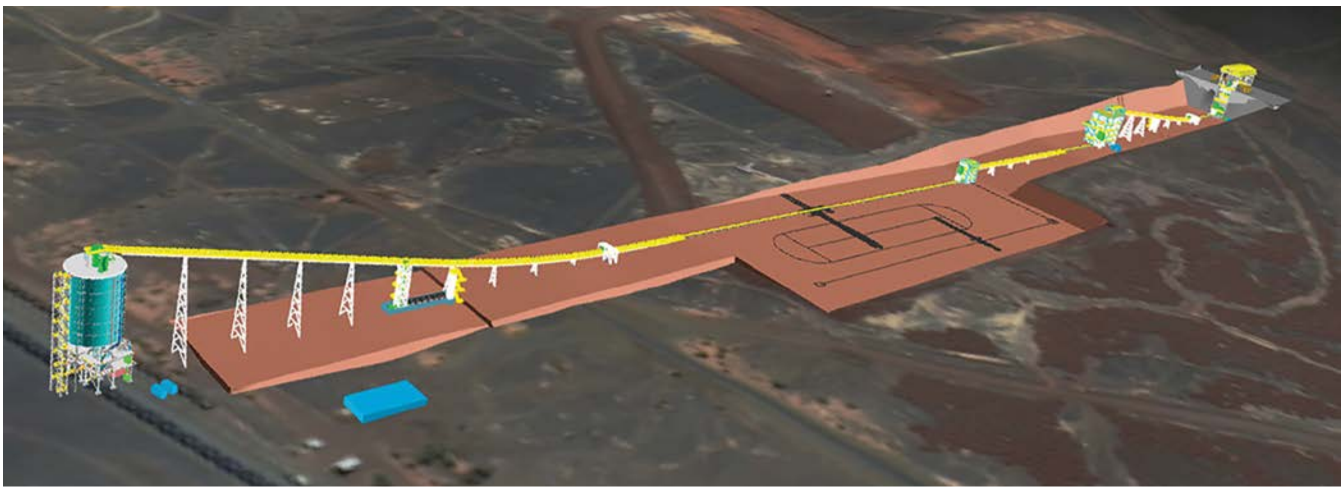
Lot 2

- Belt conveyor CV-5
- Train loading (loadout) station
- Required auxiliary systems and accessories

TAKRAF designed the system to feed the train load-out station with an average loading rate of 100 wagons per hour. Delivery of the equipment to the port of Nouadhibou is expected to be completed in approximately two years.

Commenting on the award Thomas Jabs, CEO of TAKRAF Group, said: "This project is of paramount importance to the country of Mauritania and is testament to the excellent cooperation and expertise of SNIM and the TAKRAF Group. Our teams from Europe, South Africa, North America and Asia will work seamlessly to leverage their skills and knowledge. We would like to thank SNIM for their trust in our capabilities, the State of Mauritania for their support, and all the planning and design teams involved. This award underlines our global strength in delivering complex bulk handling systems."

Norbert Neumann, TAKRAF Group Sales Manager responsible for securing the project, adds, "The F'Derick project deepens our longstanding partnership with SNIM, which began over a decade ago and further strengthens TAKRAF's commitment to contribute to the growth and prosperity of the region. SNIM remains an important client for TAKRAF, and we expect many more success stories to come. Our collaboration, dating back to the early 2000s, demonstrates our reliability, successful project implementations, and service-oriented approach. We would like to thank SNIM for its continued trust and constructive collaboration." ▪



From right to left, the primary and secondary crushing stations, leading to the transfer tower and train loading station via a network of conveyor installations.

SANY showcases mining solutions at Mining Indaba

SANY, manufacturer of construction machinery, recently attended the 30th annual *Investing in African Mining Indaba* (Mining Indaba) at the Cape Town International Convention Centre (CTICC). SANY debuted at the event last year and quadrupled its stand size to present its technologically advanced and sustainable products and services to the mining industry, the company said.

General Manager, Samuel Zhang, as well as the Chinese and South African executive teams, attended the event to interact with visitors and other attending companies. "We were excited to present our mining solutions to professionals who gathered from across the world to attend the event. Our first attendance allowed us to interact with potential clients and the competition, all of whom have the same passion: mining interests in Africa. SANY looked forward to continuing to bolster its presence at the conference," commented Zhang.

SANY is committed to serving its clients in Africa and SANY Southern Africa alone has more than 3 000 units of equipment operating in the region, serving clients in South Africa, Zambia, Mozambique, Zimbabwe, and more. SANY's footprint in South Africa comprises its head office in Boksburg, Johannesburg, and other branches in Middelburg, Rustenburg and Richards Bay. ■

SANY Southern Africa alone has more than 3 000 units of equipment operating in the region.

SANY stand at Mining Indaba.

Solving the three biggest coal screening challenges

By Serge Raymond, MAJOR product specialist

Energy is a hot topic in any country or socioeconomic circle these days. Though politicians will forever argue and debate the virtues and evils of one system of energy over another, the majority of the population no matter what part of the globe they live in, simply want to make sure that when they need heat, light or transportation, it's readily and economically available. In 2022, the demand for coal, especially in the power generation industry, hit a record high.

Customised high vibration screen media continues to grow as the solution for myriad challenges in the coal industry.

At the same time, the specs and requirements for coal production have become tighter and the pressure on mines to find more sustainable processes has never been stronger. Coal operations must examine many facets of their business to ensure efficiency and sustainability, and one significant consideration is screening and classifying. When it comes to screening coal, most operations will agree that tighter specs, issues with blinding and pegging and the constant need to increase production are three of the most common challenges they face. While it's second nature to look at the screen box for solutions, the key may lie in screen media.

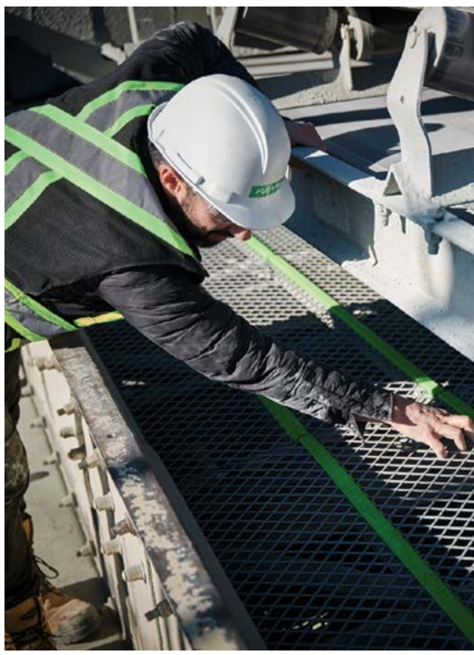
1. Tighter specifications = greater margins

Throughout the past 20 years, the material specifications for all industries have tightened — including coal. While the once standard increments of woven wire cloth openings used to meet all specifications adequately, today's tighter specs demand infinitely more size options to produce the requirements for various applications and uses. Often, premium products offering the greatest margin have to attain the most difficult specifications.

Because coal is light and not abrasive, most coal screening operations use standard woven wire screens. These mass-produced screens are inexpensive and old school — seemingly an easy decision. But, when precision for a variety of materials is key, an old-school medium is often not the right path. Because of the design and weaving process of traditional woven wire, only specific opening sizes in 1/16-inch increments are available. Innovative high vibration media styles eliminate the design limitations of weaving, allowing infinitely minute adjustments of wire spacing to accommodate a

Centre: Alternative screen media offers a more efficient solution to overcoming the blinding and pegging issue.

Below: Innovative high vibration media styles allow infinitely minute adjustments of wire spacing to accommodate a plethora of specification requirements.



plethora of specification requirements. This provides coal mines with the capacity to meet specifications and capitalise on the products or specifications that provide the highest profit margins.

2. Blinding & pegging

The lightweight and relatively soft properties of coal lead to the production of many fines that stick to the surface of the screen causing issues with blinding. Though running the coal through a wash plant before screening may reduce the fines, the added moisture – even 5% – leads to equally troubling issues with blinding. Whether from the sticky fines or the moisture laden slime, blinding and pegging present a major problem to the quality and quantity of the final screened product. Left unchecked, blinding and pegging lead to incomplete screening and contaminated product or the need to stop the screen three to four times a day for a thorough cleaning. Each cleaning stops production completely for anywhere from 20 to 30 minutes. Depending on the severity of the blinding or pegging issue, if a chain is needed to vibrate the material off the screen, not only do producers need to figure in the cost of shut down, but also the cost of the added wear and potential damage to the screen media. If cleanings must occur four times a day, they result in upwards of two hours of lost production every week. With one ton of coal priced at approximately $30 and 250 tons processed an hour, that translates to $15 000 of lost production each week, or more than $60 000 per month. Over the course of an average year, a coal mine is effectively leaving in excess of $720 000 on the table.

Alternative screen media offer a more efficient solution to overcoming the blinding and pegging issue. While traditional woven wire cloth relies solely on the vibration of the screen box to create the frequency needed to stratify the material, high vibration screens are designed in a manner that allows each wire to vibrate independently, enhancing the overall effectiveness and allowing the screen to self-clean. The high frequency vibration produced by the screen wires virtually eliminates blinding and pegging and erases the need to prewash the coal or shutdown the machines for cleaning. In turn, eliminating that step can also reduce water use and costs leading to a more sustainable overall process.

To further reduce the chance of material buildup, the high-vibration screens offer customizations using stainless steel wire. While the porous nature of standard wire might attract the coal powder, allowing it to build up and eventually close off the entire opening, the stainless-steel wire combined with high vibration effectively eliminates the chance of material buildup.

Predictive vibration analysis detects miniscule changes in baseline operation before the effects are seen in screening performance and output.

High vibration screens are designed to allow each wire to vibrate independently, thereby enhancing overall effectiveness and allowing the screen to self-clean.

3. The proof is in production

Often in screening applications, mines focus heavily on reducing the frequency of screen change outs. While the purchase of new media and the time to change out the screen panels can result in significant costs, any concern is often misplaced. Rather than focusing on cutting costs, coal mines would be better served focusing on making money. Ultimately, in achieving higher production, most costs can be offset or completely negated. While traditional woven wire might last more than a year between change outs in coal applications, that should be a red flag to coal mines, alerting them that they are significantly under producing. By switching to a high-vibration screen, most coal mines will see an increase upwards of 40% in production. Though pushing more material across the screens may result in slightly more frequent screen change outs, the revenue generated by increased production and a better-quality product more than offsets the additional screen media costs.

Performance is only one aspect of productivity. The other? Uptime. Any coal mine knows that the key to successful production is avoiding unscheduled downtime and instead employing tools to optimise performance and predict maintenance so it can be completed at scheduled times rather than unexpectedly. A tool some screen manufacturers offer to monitor the health of the screening system is predictive vibration analysis. Predictive vibration analysis, which includes vibration analysis tests, detects miniscule changes in baseline operation before the effects are seen in screening performance and output. Some vibration analysis systems even capture data while the machines are running material. This provides producers with up-to-date information on the machine and operational health without making sacrifices in production time. Issues such as improper tensioning or a broken wire can be identified and remedied through scheduled downtime. The system also gives an indication of how the screening machine is working,allowing operations insight into adjustments or maintenance on the machine that could help improve productivity.

Building on those benefits of automation and data collection, some screen media manufacturers also embed tracking chips into each screen panel. These chips can be easily scanned to get data on the machine placement, the specs of the screen and other relevant data for reorder and flexibility in changing specs. Rather than worrying about putting screen panels in inventory to switch to a different specification, coal mines know that the data for the placement of the screen is housed in the chip, which can easily be scanned for precise placement when the specifications change again. The data contained in the chip also makes it simple and seamless to reorder screen media.

Making the switch

While the success of a coal mine's processing is often placed on the screening machine itself, the screen media likely plays a more important role. Progressive mines with a comprehensive and strong understanding of frequency and amplitude and the overall effects of vibration and movement, recognise that the static screen panels of the past simply fail to meet the challenges they face today. As a result, customised high vibration screen media continues to grow as the solution for myriad challenges in the coal industry. ■

MAJOR

MAJOR is an innovative global manufacturer of wire screens for the aggregate, mining and recycling industries.

feature

SANDVIK

AutoMine® for Underground Drills

The first OEM to introduce a unified traffic management system for drills, loaders and trucks.

Simutron offers affordable software solutions

Simutron's software is able to help the end-user do more with the tool in a shorter time frame.

Underpinning engineering software solutions provider Simutron's robust growth, is its affordable annual licencing model, which enables customers to access its 'library' of software tools, Simutron's Simulation Applications Engineer, Gary Styger, tells *Modern Mining*.

Established in February 2022, this South African based company caters to the specialised segment of the simulation software market, offering advanced solutions. Its client base has rapidly expanded in the mining industry, with a strong presence among small, medium, and micro enterprises (SMMEs).

Styger points out that Altair stands out in the market for its unique approach to software accessibility. Clients are increasingly drawn to Altair by its affordable and flexible licensing structure, which offers a comprehensive range of software and simulation tools for an annual fee.

Digital twin developments are all the rage now with the software offering significant cost savings.

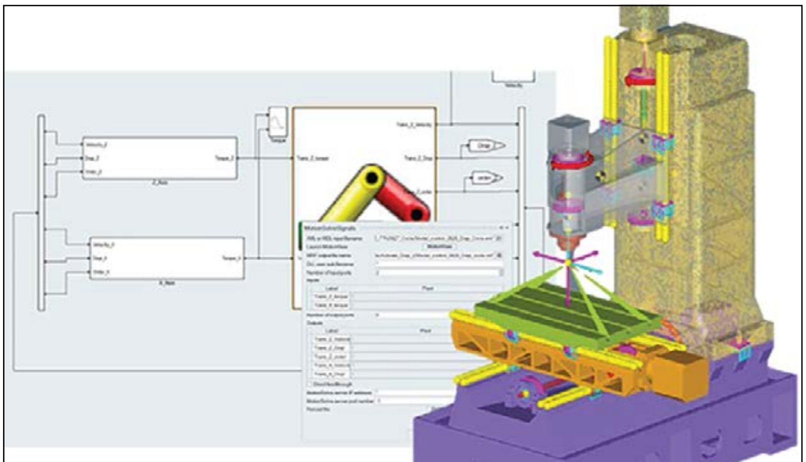


Image courtesy of ITRI

Simutron's simulation software is viable across manufacturing and mining processing needs – encompassing the full mining cycle.

In an industry that calls for continuous software upgrades, Simutron's annual licence provides clients with numerous benefits, including value-for-money solutions.

"Our customers have access to our library of tools – tools that are continuously being advanced to keep abreast of the latest technology developments," explains Styger.

Simutron, a subsidiary of the MECAD group, which has been in existence since 1986, was established to serve some of the specialised industries such as mining. The company provides tools for advanced finite element analysis, computational fluid dynamics and digital twin solutions to assist both mining operations and suppliers to mines.

feature

Growth path

Simutron's offering includes:

- ❑ Altair® SimSolid™ – a simulation software solution suitable for design and manufacturing companies operating large CAD assemblies. The beauty of Altair's SimSolid is that it does not require de-featuring and offers a meshless solution. The main benefit of this is a short learning curve for engineering teams, thus allowing several design iterations before building the product or the first prototype, if required.
- ❑ Simutron's Altair® EDEM™ software offers particle simulation based on the Discrete Elements Method (DEM), which is integral to mining processes such as conveyors, chutes, vibrating screens, and ball and sag mills. Software such as Altair EDEM is key to the minerals processing segment of business, with EPCM contractors relying heavily on similar technology for manufacturing and minerals processing.
- ❑ Its technology is ideal for product developments in the fields of composites, including carbon fibre and fibreglass, and in the analysis of slurry pumps used in the mining environment.

"Given that Simutron's simulation software is viable across manufacturing and mining processing needs – encompassing the full mining cycle, from primary rock extraction through to delivery of the final product – the company has, since its inception, experienced robust demand for its products and services," explains Styger.

In fact, with mining being a key component of the South African economy, it has also become integral to Simutron, accounting for as much as 80% of the company's business, and including both mining majors and SMMEs.

"SMMEs are very open to adopting our software as it is affordable and helps customers with virtual prototyping and digital twinning," says Styger. "The software can develop and virtually test computer generated prototypes, which saves the customer on material and product development costs."

SMME's excel in swift business decision-making, making them ideal adopters of Altair's simulation software, from Simutron. This dynamic segment constitutes the predominant customer base for Simutron, including a diverse range of emerging consultants engaged in coal mines and other ore-related ventures.

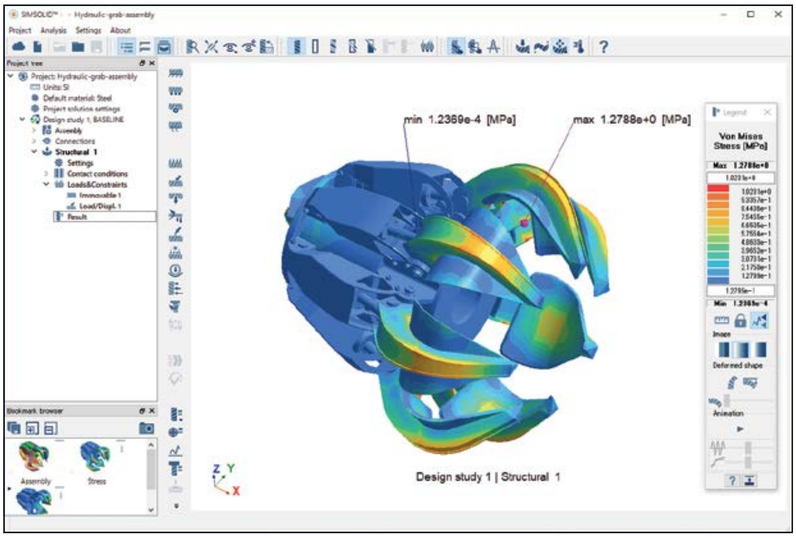
According to Styger, digital twin developments are all the rage now with the software offering significant cost savings. Digital Twin software allows the correlation of the 'predictive' numerical model to be linked with the actual product or prototype, effectively 'learning' from each other. Altair's artificial intelligence (AI) tools leverage this data to accelerate the design and manufacture of new products.

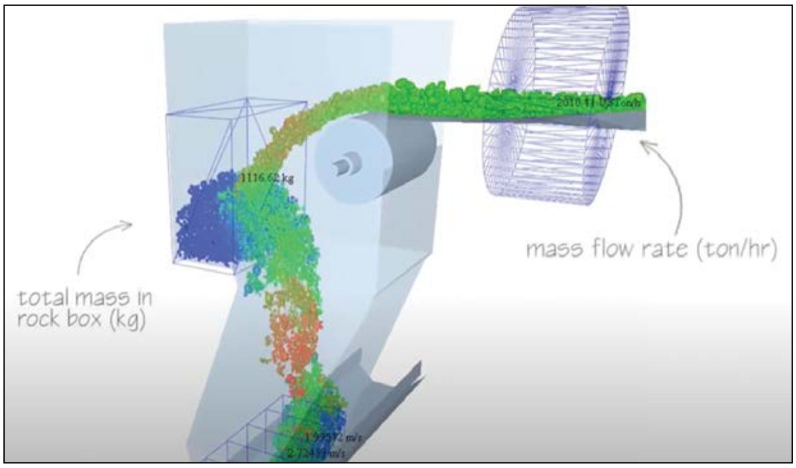
"It is important to note that South Africa is still in the early stages of adopting digital twin technology. While experts across the globe are excited about digital twin offerings given the speed at which products can be developed virtually, the reality is that it is not a simple process and, while we are heading in that direction, we are not there yet."

Discussing product advancements for 2024, Styger explains that aside from software upgrades that will allow the user "to do more with the tool much quicker," a number of software developments are currently at verification stage, with some products scheduled for release later in the year.

"Our software is able to help the end-user do more with the tool in a shorter time frame. Given that time is money, this is important. A client in the pump manufacturing industry made a point to congratulate us on our affordable software, which, he said, had done much for his bottom line. Following the client's purchase of the software licence, we subsequently trained his team on the use of the software. The client is ecstatic to have developed his product-line at an affordable price."

"Having experienced good growth over the past two years, our strategy going forward is to continue to expand our reach and introduce Simutron's offerings to key sectors and to document case studies on how our software has been used to solve problems," concludes Styger. ■





Customers have access to Simutron's library of tools – tools that are continuously being advanced to keep abreast of the latest technology developments.

Simutron

- ❑ Businesses under the MECAD Group of Companies provide the engineering industry with software solutions and consulting services to aid customers improve work efficiencies.
- ❑ Aside from being affordable and easy to use, Simutron's software helps customers run trials to test the veracity of design iterations and to ensure the final product delivers the desired outcome.

Pushing boundaries in drill, load, haul automation

As a leader in the field of automated mining equipment, Sandvik Mining and Rock Solutions has been steadily extending the reach of its automation technology into different mining environments and equipment categories.

Kabelo Nkoana, Business Line Manager for Automation and Digitisation at Sandvik Southern Africa.

Its AutoMine® product group has allowed underground mines to automate their drilling, loading and hauling operations, for instance. More recently, according to Kabelo Nkoana, Business Line Manager for Automation and Digitisation at Sandvik Southern Africa, this technology is being applied to surface drill rigs.

"Over the last four to five years, we have seen our southern African market share in down-the-hole and rotary blast hole drill rigs grow considerably," says Nkoana. "This has given us an opportunity to start discussing available automation options with customers."

The AutoMine® system has been in operation for over two decades, and now plays an integral role in making mining safer and more efficient in more than 100 mines worldwide. He notes that the impact on safety has been notable, with more than five million Lost-Time-Injury-Free (LTIF) hours worked by the automated equipment.

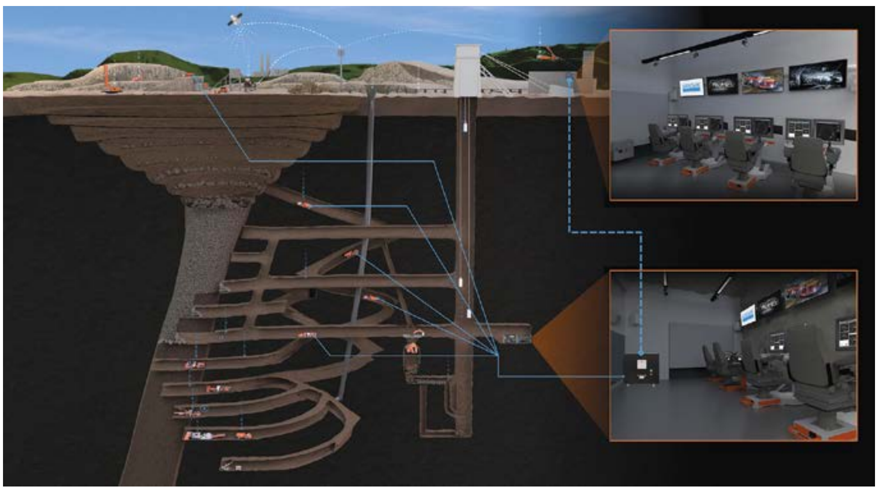
"Over this extended period of time, we have proven the reliability and performance of our digital technology, and demonstrated the direct safety benefits of remote automation and placing personnel away from areas of hazard or high energy," he explains. "Based on our success in the underground environment, we are now rolling out equivalent solutions for surface operations."

Underground

AutoMine® has allowed underground drilling rigs to be remote operated, while applying optimised drilling patterns and adjustments for maximum efficiency. The company's underground loaders can also be remotely controlled, reducing the need for operators to be physically present in potentially hazardous unsupported areas. In the same way, autonomous trucks have become a key component of the hauling process in underground mining, being able to transport materials within the mine without direct human control.

In the loading and hauling space, the AutoMine® system enables loader steering without predefined paths, where the operator controls the loader's maximum speed and provides direction from a remote-control station. The functionality of this system includes collision avoidance to minimise equipment damage and optimise uptime. Without an operator being present in the actual working area, the equipment can be kept working during blast clearance and shift changes. This facilitates less downtime and raises the productivity of the operation.

AutoMine® underground loaders and trucks to be remotely controlled, increasing safety of operators.



Surface drills

Nkoana explains that AutoMine® can now be applied to the Sandvik i-Series of surface drilling machines; these intelligent units are therefore AutoMine® compatible. The Sandvik i-Series comes standard with features such as the onboard data collection units for major components. The machines' data-collecting Knowledge Box gathers and stores a range of operational data, and transmits it to the cloud for analysis and reporting.

"With our surface drilling rigs, AutoMine®

Above: AutoMine® essentially replicates the machine control system to enable remote control over the mine's Wi-Fi network.

Right: Without an operator being present in the actual working area, the equipment can be kept working during blast clearance and shift changes.

essentially replicates the OEM's machine control system to enable remote control over the Wi-Fi network," he says. "This enhances safety especially when rigs are operating close to a highwall, or when there are unstable geological conditions on the bench. Mines have embraced these features to further enhance the safety of operators."

The automation of this equipment is also paying dividends in terms of reliability and performance. This is due to the machines' extensive sensing capability, where they are picking up valuable data about their working environment. Programmed to operate only within their design limits, they will respond immediately to changes.

"An automated machine will follow pre-determined instructions and will not exceed its limitations," says Nkoana. "This helps extend the life of consumables and components, generally leading to a lower total cost of ownership."

Interoperability

He notes that Sandvik Mining and Rock Solutions is continually developing its digital offerings in response to customer preferences and needs. As the mining sector evolves toward 'smart' operations, one of the key imperatives for an OEM is to ensure the interoperability of its technology.

"Mines will usually have a range of OEM brands on their site, but they are working towards greater transparency of all operations through integrating data from different sources," he says. "Management on mines therefore needs the third-party systems to speak to each other – so we have achieved a high level of interoperability and continue to develop our systems in this direction."

Geo-fencing

The trend towards automation on mines means that automated equipment is increasingly sharing the physical space occupied by manually operated machines on a site. To ensure the highest levels of safety, automated machines can be 'geo-fenced' – or partitioned off – from manual equipment. However, he points out that there are also situations where the area is too confined to give the automated machine its own space.

"To deal with situations like this, machines need artificial intelligence (AI); we have launched our AutoMine concept loader and underground drill rig, which are AI-enabled and fully autonomous," Nkoana explains. "This concept includes perception-sensing technologies to detect obstacles, and make decisions about their movements when there is a person in their proximity."

He highlights that the application of technological change needs to be carefully managed at site level, with the involvement and education of all stakeholders. Sandvik Mining and Rock Solutions makes a point of guiding customers through the process of automation, planning each step and ensuring the necessary skills development and commitment. ■

The concept drill makes use of perception-sensing technologies to detect obstacles, make decisions about its movements and person proximity.

To ensure the highest levels of safety, automated machines can be 'geo-fenced' – or partitioned off – from manual equipment.

New technology requires mindful and continuous risk management

By Pieter Colyn Head: Mine and Occupational Health and Safety and Warren Hendricks Executive: Mine and Occupational Health and Safety at ENS

Pieter Colyn, Head: Mine and Occupational Health and Safety.

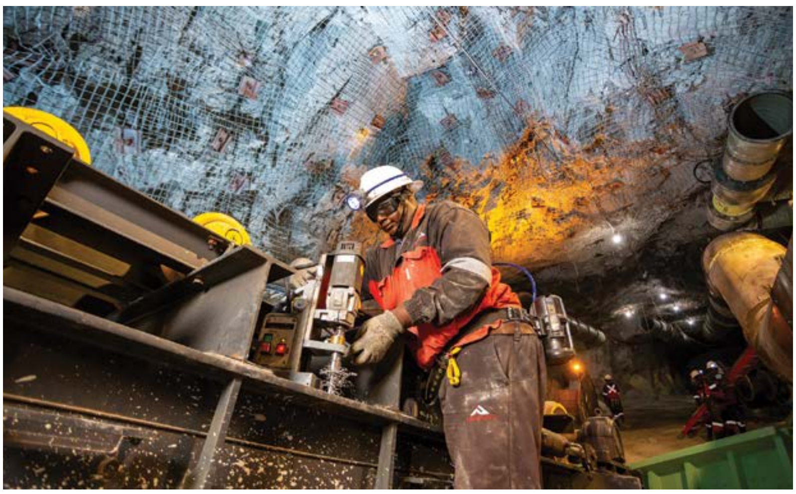
Warren Hendricks, Executive: Mine and Occupational Health and Safety.

The Mine Health and Safety Act, 1996 (the MHSA) in South Africa requires that the employer provide a working environment that is safe, as far as reasonably practicable, and is without risk to the health of its employees. It is therefore incumbent on the employer to implement a holistic health and safety management system, which includes the identification of hazards and assessment of risks, as well as take steps to mitigate or eliminate any hazards which employees may be exposed to at the workplace.

This is a dynamic process and requires a continuous, rather than stagnant, approach to risk management. In balancing the demands of the South African mining regulatory environment and the introduction of innovative technology for use at a mine, both employer and Original Equipment Manufacturers (OEMs) would be best placed to be mindful that the introduction of automated or semi-artificial intelligence systems at a mine and resultant negation of intervention by human resources, does not result in unanticipated oversight of potential risks, latent human error and liability associated with the implementation, operation, repair, maintenance of such systems.

In an ideal world, new technology is introduced gradually, as result of the natural evolution of industry developments and knowledge over time. However, in recent times, the need to advance has arrived more swiftly. By way of example, the recent regulatory requirements in the Mine Health and Safety Regulations (MHS Regulations), which mandate that trackless mobile machinery (TMM) at a mine must have automated means to avoid a collision, without human intervention, namely the so-called prevent potential collision system (PPCS), was promulgated with immediate effect. As such, employers in South Africa (in conjunction with OEMs) would have to be the forerunners in the investigation, design, installation, testing, certification and utilisation of such a system.

Employers need to implement a holistic health and safety management system.



Largely, and for the purpose of the MHSA, the obligation to implement health and safety systems at a mine are placed on the employer. Practically, however, the employer will rely on suppliers, importers and/or OEMs to design, supply and manufacture products and equipment for use at a mine, as well as to play a significant role in the practical assessment of new products and equipment in particular mining environments. Each unique mining environment may yield different results.

Of relevance in this context, is section 21 of the MHSA which prescribes specific statutory health and safety obligations for OEMs in relation to their products and equipment used at a mine. Implicit in these obligations is the necessity to identify hazards and assess risks associated with the use of their products and equipment at a mine.

For OEMs, the importance of ensuring compliance with the statutory obligations in terms of the MHSA, should be primary to avoid potential contraventions of the provisions of the MHSA, but also to avoid unnecessary harm in relation to their industry standing of providing reputable products and equipment. Section 21(1)(a) of the MHSA, specifically provides that: "(1) Any person who-

(a) designs, manufactures, repairs, imports or supplies any article for use at a mine must ensure, as far as reasonably practicable-
  - (i) that the article is safe and without risk to health and safety when used properly; and
  - (ii) that it complies with all the requirements in terms of this Act"

Section 21(1)(a) of the MHSA, is applicable to "any article", which term "article" is not defined in the MHSA, and may encompass a number of products and equipment. It is implicit by the term "without

risk", that one of these measures must include the conduct of a comprehensive risk assessment in relation to the contemplated or intended use of the product and equipment at a mine.

Although there is no particular provision in section 21 of the MHSA as to the manner in which the risk assessment should be conducted, this should be informed by the health and safety criterion "reasonably practicable" and the requirements of section 11 of the MHSA. Section 21(2) of the MHSA should also be considered, wherein in certain circumstances OEMs, and the like, may be relieved of their statutory obligations by means of a written undertaking entered into between the OEM and the person(s) willing to provide such an undertaking.

Generally, and practically, a product and equipment risk assessment should deal with, amongst others:

- a comprehensive risk rating table;
- identification of, and assessment of the hazards and risks in relation to the contemplated or intended use of the article at a mine. This would imply that a practical assessment or evaluation must be conducted by the OEM (in conjunction with the particular employer) in relation to the use of the article at a mine. This to ensure that appropriate and accurate risks and hazards are identified, assessed and may be dealt with accordingly through elimination or mitigation. For instance, a generic risk assessment in an OEM manual may not be deemed "reasonably practicable", depending on the particular circumstances;
- the measures taken by the OEM and the recommended measures to be taken by the end user of the product or equipment, to mitigate, control or eliminate the hazards and risks should be recorded in the risk assessment;
- consideration must be given to the medium of communication of the risk assessment to the end user;
- the OEM should advise, and/or provide, the employer in relation to appropriate training to be provided to the employees at the mine, on the proper use of the products or equipment in a practical mining environment; and
- consideration should be given in relation to the manner that the risk assessment may be updated, from time to time, as circumstances change or further technological advancements are made.

Ensuring that a comprehensive risk assessment is prepared will provide a higher degree of protection of the health and safety of employees at work. Failure or neglect in this regard, may inevitably lead to potential and unwanted criminal or civil liability, as well as reputational damage in the mining industry. ■

MHS Regulations mandate that trackless mobile machinery at a mine must have automated means to avoid a collision.

The obligations to implement health and safety systems at a mine are placed on the employer.

feature

Dr Ross Harvey, director of research and programmes at GGA.

Solve Dutch Disease by investing in democratic strengthening

By Dr Ross Harvey, director of research and programmes at Good Governance Africa (GGA)

It is no secret that Africa is abundantly blessed with mineral resources. It is, similarly and sadly, no secret that in too many contexts on the continent, mineral wealth is correlated with underdevelopment. Global demand for copper, cobalt, lithium, titanium and every mineral you've not yet heard of, is going to multiply in the decades ahead.

It's not only the iPhone you're probably reading this column on, but also the energy and transport revolutions that are underway, ostensibly to avoid climate catastrophe. I say ostensibly because not even Covid lockdowns caused us to drop greenhouse gas emissions enough to keep warming to within 1.5 degrees Celsius below pre-industrial levels. But economists are largely techno-optimists, and many hold the view that with a deft combination of subsidies for green tech, and taxes on dirty tech, we'll ameliorate the trend of destroying the planet in the quest for wealth.

If these trends hold, developed countries are going to try and secure access to African resources, which technically means that African countries have an opportunity to secure for themselves a place in global value chains. In other words, well governed mineral-wealthy countries, with sensible mining and industrialisation policies, could move out of the commodity-export trap and add value internally before exporting, or at least connect mining to other economic sectors. The Africa Mining Vision, which was launched in 2009, certainly envisaged structural transformation of African economies through its mineral endowments. A book to which I contributed, published in 2019, opens with the following lines: "Sub-Saharan Africa is reasonably integrated into the global economy – but not on favourable terms. It still, by and large, exports primary commodities while importing manufactured goods and high-value services. The region's role in manufacturing global value chains (GVCs) is limited to the supply of metals and minerals. The countries of sub-Saharan Africa trade little with each other and regional value chains (RVCs) are, for the most part, undeveloped. Nevertheless, since the turn of the last century, stronger economic growth and closer political integration have led to promising new developments and a more optimistic outlook. While serious obstacles still remain, these emerging dynamics now deserve more detailed investigation."

Logistics, energy deficiencies and rampant crime are the three primary blockages to investment in South Africa.

One of the 'promising new developments' has been the creation, on paper, of an African Continental Free Trade Area (ACFTA). But it is hamstrung by practical obstacles such as inefficient border posts marred by petty corruption causing delays in the transport of key goods. It is similarly undermined by a relative lack of comparative advantage between countries within the region, which makes trade difficult. Comparative advantage is the basis for global trade. If I am relatively better at producing wine, the logic goes, than copper, then I should abandon the latter and focus on the former. I can export my wine and import my copper from a country that is relatively more efficient at copper production than wine. This is obviously an over-simplified view of the logic, but that is how trade generally works, and so creates global gains. For the model to work in reality, it requires countries to be able to optimise the production of those goods they are relatively better at producing and to then be able to transport them efficiently to their destination. But sometimes even internal transportation systems are so poor that countries cannot move grain from one side of the country to another, never mind cross-border transport. When the private sector in South Africa, for instance, indicates that logistics (freight rail, the governance and management of ports, etc.), energy deficiencies and rampant crime are the three primary blockages to investment in the country, one fully understands why. Unless these things are addressed (not only in South Africa but across the continent), investment will not

be forthcoming; certainly not responsible investment, which is a subject for another column.

While the ACTFA is a positive development, one "serious obstacle" to progress on the continent is democratic backsliding. The econometric evidence is clear that sustained transitions to democracy produce significant economic growth gains over their autocratic counterparts. This is simply because democracies – for all their flaws – are better at holding elites to account for unsatisfactory performance and can thus ensure that broad-based development occurs. The latest data is not yet out, but the Economist Intelligence Unit's Democracy Index for 2022 indicated that sub-Saharan Africa had scored only 4.14 on the Index vs a global average of 5.29. The only area that scored lower was the Middle East & North Africa, which came in at 3.34. Deeply concerning, though, is that 23 of the world's 59 'authoritarian' regimes are in sub-Saharan Africa, while the Middle East & North Africa only boasted 17. With the swathe of recent coups – coup contagion – across West Africa, and some countries even leaving ECOWAS (The Economic Community of West African States), the 2023 results are not going to paint a prettier picture.

So, what does democratic backsliding have to do with mineral wealth and structural transformation? The bottom line is that authoritarian regimes have every incentive to ensure that mineral rents flow only to elites at the expense of citizens. The transaction costs of reform are much higher than the costs of repression in elite calculus. Mineral rents fund patronage, co-optation and repression ability, the three cornerstones of any authoritarian regime. I could argue, and I do, for better mineral policies, stronger industrial policies that connect mining to global value chain opportunities, and a more functional ACFTA, but these arguments are meaningless in contexts where the broad swathe of citizens do not have a voice. In those contexts, elites will continue to do what they will – as Thucydides put it, "the strong do as they will and the weak suffer as they must". Elites whose power is unconstrained by institutions and citizen strength will continue to take money from, and do business, with, other unscrupulous powers.

A recent journal article that my colleague Pranish Desai and I wrote suggests that Dutch Disease – one manifestation of the resource curse – is at play in southern Africa. Ironically, the way to heal the disease is to ensure that mining acts as a flywheel for industrialisation. In the absence of democratisation gaining renewed strength, however, that kind of structural transformation will remain a pipedream. ■

Africa is abundantly blessed with mineral resources.

Global demand for copper, cobalt, lithium, and titanium is going to multiply in the decades ahead.

Powerbit Rocktools: Your trusted partner in drilling excellence

Maintaining a competitive edge is key to success in the dynamic world of industrial drilling; and Powerbit Rocktools, an industry leader with a track record spanning two decades, has consistently proven to be a reliable and innovative partner for drilling professionals.

What sets Powerbit Rocktools apart from other suppliers? Nardus Bezuidenhout, Director at Torque Africa Exploration, explains: "Powerbit Rocktools has earned its reputation by actively listening to customers, understanding their unique challenges and consistently delivering top-notch solutions. They are more than a supplier to us. They partner with us to create the right solutions to our drilling business demands."

Powerbit Rocktools industrial drilling products – which encompass DTH hammers and bits, RC hammers and bits, tri-cone bits, top hammer bits and rods, casing systems, grinding machines and more – are technologically advanced but also surprisingly affordable.

The company's ongoing commitment to excellence and dedication to customer service has established it as a force to be reckoned with in the drilling industry. The world of drilling is rapidly evolving and, with it, the demand for robust and reliable rock drilling tools is constantly on the rise.

Powerbit Rocktools collaborates with advanced research centres and technology experts in Taiwan, China and Japan. This global presence ensures it stays ahead of technological advancements, allowing the company to tailor its products to meet clients' specific needs effectively.

Powerbit Rocktools MD, Thomas Chao and Nardus Bezuidenhout, Director, at Torque Africa Exploration.

Powerbit's extensive product range is complemented by its focus on building long-term client partnerships. Wors Prinsloo, Director at Kibela Drilling – a leader in the drilling and blasting industry – emphasises the significance of collaboration, especially in the African sector, where drilling operations are essential for resource extraction and progress.

"In our industry, we can't afford downtime. Having partners who are always available to help us address the unique challenges we face is critical. The Powerbit team works with us, not for us. That makes them a valued partner for our business."

Powerbit Rocktools products.

The value of economical, long-life rock drill bits, hammers and grinding machines in today's drilling environment is immeasurable. Powerbit recognises these tools' vital role in enabling clients' success and driving infrastructure projects that underpin local economies.

The Powerbit product range is testament to Powerbit's commitment to empowering progress in drilling operations. Each Powerbit product is meticulously engineered to deliver exceptional drilling capabilities and ideally equipped to serve a diverse clientele with varying requirements across different industries and working conditions.

Experience Powerbit precision

Experience the power of precision-engineered rock drilling tools and exceptional customer support, empowering your operations to thrive in the face of modern drilling challenges. Connect with Powerbit Rocktools and embark on a journey of progress and empowerment that has been driving the southern African mining industry for almost two decades. ■

Trollope Mining Services expands fleet with machines from Pilot Crushtec

Amid growing demand for its crushing and screening services, Trollope Mining Services, one of the largest opencast mining contractors in Africa, has in the past three years taken delivery of a large fleet of Metso machines from Pilot Crushtec. With nearly 500 pieces of equipment in its fleet, Trollope has established itself as the go-to contractor in the opencast mining sector in southern Africa.

Currently operating in South Africa, Namibia and Botswana, the company has also executed projects in the DRC and Guinea. The company operates across commodities including, but not limited to, coal, platinum, copper, andalusite, gold, phosphate, lithium, iron ore, manganese, diamonds and limestone.

To establish itself as a total solutions provider in the opencast mining contracting fraternity, Trollope Mining Services added a crushing and screening division to its business in 2016. Managing Director Guy Hopkins says that in the past three years the division has seen exponential growth on the back of some major projects, necessitating an expansion of the crushing and screening fleet.

Following the fleet expansion programme, Trollope Mining Services now operates a total of 15 machines. Of note is that the whole fleet is made up of only Metso machines. "We prefer Metso machines because of our experience with the equipment," he says. "Fundamentally, the design and build quality of these machines are unmatched. Our buying decision is also influenced by the technological evolution of the Metso offering, which allows us to run 'hands off' operations. Apart from improved efficiencies, technology paves the way for improved safety on mining sites."

Of its 15 Metso machines, six are dual-powered units, making Trollope Mining Services the biggest operator of Metso hybrid crushers and screens in southern Africa, confirms Charl Marais, Sales Manager at Pilot Crushtec. The dual-power fleet comprises two Lokotrack® LT120E™ jaw crushers, a Lokotrack LT330D™ cone crusher and three Lokotrack® ST2.8E™ scalping screens. These were expressly purchased for a project in the Northern Cape Province of South Africa. ■

Overlooking the pit – the Metso mobile train processes primary and secondary crushing on-site.

Pioneering vent shaft at Palabora holes out safety at 1 200 metres

Underground mining contractor Murray & Roberts Cementation and its client Palabora Mining Company (PMC) celebrated the last blast at the new ventilation shaft, which took its depth to a final 1 200 metres below surface on 9 January 2024. The 8.5 metre diameter upcast vent shaft – which holed through to an already developed return air way at depth – is vital to PMC's Lift II project. Lift II will develop access to ore resources sufficient to extend the life of this copper mine beyond 2040. Murray & Roberts Cementation Senior Project Manager Fred Durand says a key achievement was the project's fatality free record, earned over more than a million hours worked.

"The achievement of a million fatality free hours – reached in November 2023 – is more than just a number," says Durand. "It reflects the deep-rooted safety culture that has permeated every aspect of the project."

The innovative sinking methods, used for the first time in South Africa, were also carefully focused on achieving zero harm. Murray & Roberts Cementation employed its Canadian shaft sinking methodology, adapted to what became called 'the PMC way'. This method included an innovative solution to poor ground conditions, where the sidewall of the shaft was closed within 48 hours by means of the shaft concrete lining after every three metres of advance. ■

Reaching a final depth of 1 200 metres on 9 January 2024, the new ventilation shaft sunk by Murray & Roberts Cementation at Palabora Mining Company is a triumph in many respects.

Multotec scoops SACEEC Exporter of the Year Award

Metallurgy and process engineering specialist, Multotec, recently won the South African Capital Equipment Export Council's (SACEEC) Exporter of the Year Award in the category for companies with a turnover of R2-R5 billion a year.

Bheka Majola, Managing Director for Processing Equipment at Multotec, says the award is not only an indication of the company's growth over the years but also the culmination of a 15-year strategy to grow its global presence and income from its export business.

Multotec has invested in manufacturing facilities and storage space to support the growth of its export business.

The SACEEC Exporter of the Year Awards celebrate the passion and commitment of members who have participated and succeeded, through determination and innovation, in their respective local and export markets.

Majola explains that exports currently contribute 63% of Multotec's total annual turnover, of which more than 60% is exported into Africa. Multotec has more than 50 years of experience and expertise in supplying a wide range of good quality mineral processing equipment that is backed by field service and maintenance specialists in most of the commodities, including gold, platinum group metals, lithium, and copper. ■

Multotec won the SACEEC exporter of the year award in the category for businesses with turnover of R2-R5 billion a year.

Bosch Rexroth Africa strengthens offering

Hydraulic and Automation Warehouse (HAW), a Bosch Rexroth Africa Group Company, has incorporated Power Team SA's SPXFLOW and Bolting Systems into its offering, effective 1 November 2023. The strategic incorporation of this range of high-force precision tools and workshop equipment from SPXFLOW Hydraulic Technologies complements HAW's extensive range of hydraulic components. It will also provide more turnkey solutions for clients in the maintenance, mining, power generation, construction and port industries.

The two companies will work in tandem to address all orders received prior to 1 November. "We would like to assure our client base that, as a leading component supplier with distribution outlets across Africa, we envisage a seamless transition ensuring that clients benefit from HAW's African distribution network and in-house expertise," said Werner Joubert, HAW General Manager. ■

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