

MODERN MINING

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CROWN PUBLICATIONS

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ON THE COVER

MTN is using 5G Private Networks to offer solutions that enhance operations while supporting social and sustainability goals. See story on Pg 10.

2025

another mettle testing year?

According to the Chinese calendar, 2025 is the Year of the Snake. Representing wisdom, elegance, and mystery, the snake is often seen as a symbol of transformation and adaptability. And with so many challenges presented to us on both the global and local fronts, the need for flexibility seems to be a given going into 2025.

Interestingly, financial services provider, Deutsche Bank, in its *Outlook 2025: Deeply invested growth*, echoes this sentiment, stating that we live in a world characterised by rapid and accelerating change: economic, social, political and technological. “Change, in all its forms, is often unsettling but cannot be ignored. It will create challenges in 2025 and beyond, but also investment opportunities.”

So, what advice do the pundits propose for the year ahead?

Deutsche Bank believes that for the global economy 2025 will be a case of staying the course in turbulent times.

In the OECD’s latest economic outlook, the global economy is projected to remain resilient despite significant challenges. It projects global GDP growth of 3.3% in 2025, up from 3.2% in 2024, and 3.3% in 2026.

For South Africa’s key trading partners, the OECD forecasts varying growth prospects with GDP growth in the United States projected to be 2.8% in 2025, before slowing to 2.4% in 2026. “In the Euro area, the recovery in real household incomes, tight labour markets and reductions in policy interest rates continue to drive growth. Euro area GDP growth is projected at 1.3% in 2025 and 1.5% in 2026.” Growth in Japan, South Africa’s fourth largest trading partner, is expected to increase by 1.5% in 2025 followed by a decline to 0.6% in 2026. For China, one of the country’s largest trading partners, growth is expected to continue to slow, with GDP growth of 4.7% in 2025 and 4.4% in 2026.

On the local front, the International Monetary Fund (IMF) and KPMG South Africa have pegged 2025 GDP growth at 1.5% y/y, while banking institution, Investec, is more optimistic, pointing to a 2.0% y/y growth for the year ahead.

The IMF sees the Government of National

Unity (GNU) as playing a key role in putting South Africa’s economy on a path towards higher and more inclusive growth.”

Two years ago, government and business threw their combined weight behind a push to get the economy back above 3% growth by the end of 2025, aiming to create around 400 000 youth jobs in the process. Is an above 3% growth rate really achievable by the end of 2025 or is it a piped dream?

In this edition

Our January 2025 edition is packed with some great commodities insights including gold, shared by the World Gold Council (pg 12), and a diamond outlook shared by the State

Diamond Trader (pg 16). The World

Platinum Investment Council has provided an outlook for platinum (pg 20) and coal miner, Thungela has advised on what to expect from coal in the year ahead (pg 24). After having retreated from trading at record highs of above \$2700 / oz to around \$2500/oz in late 2024, expectations are that gold will regain momentum in 2025 to trade closer to the \$2900/oz mark.

However, natural diamonds, which have been facing some stiff headwinds, are expected to experience further tough competition from lab-grown diamonds.

Our January edition, scheduled for distribution at the Mining Indaba conference, features a Mining Indaba Preview and provides insight into what to expect from the world’s largest mining conference, taking place from 3-6 February 2025 (pg 45).

Also of interest is our Top Projects, which include Pan African Resources’ MTR asset located in South Africa; Barrick’s Lumwana Super Pit expansion project in Zambia and Australia-based Lotus Resources’ Letlhakane uranium mine in Botswana (pg 38).

Our cover story, MTN, talks about redefining mining with 5G private networks. According to David Behr, CEO, MTN Converged Solutions, 5G Private Networks are emerging as a crucial catalyst, offering solutions that enhance operations while supporting social and sustainability goals (pg 10).



Nelendhre Moodley.

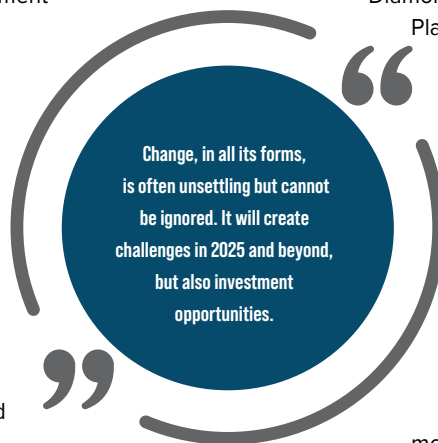
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Mining technology for a sustainable future

SAIMM to host 2nd hydrogen and fuel cells conference

On 7–8 April 2025, the Southern African Institute of Mining and Metallurgy (SAIMM) will host the 2nd Hydrogen and Fuel Cells Conference at the Southern Sun, Rosebank. The event will explore the role of green hydrogen technologies in advancing industrialisation in Southern Africa, while addressing the broader global energy transition. Under the theme “Pathway to Industrialisation”, the conference will bring together industry leaders and researchers to discuss hydrogen’s potential across its entire lifecycle – from production and

storage to its application in fuel cells. Attendees will have the opportunity to engage in discussions on both the innovations driving renewable energy and the practical challenges that need to be addressed to realise hydrogen’s full potential. The conference will offer a strong focus on practical applications, presenting successful hydrogen initiatives from across the globe, with sessions dedicated to sharing case studies and experiences from industries already implementing hydrogen technologies. ■



SAIMM set to host 2nd hydrogen and fuel cells conference in April.

Akobo Minerals and Ethiopian Prime Minister inaugurate the Segele Mine

Akobo Minerals, a Scandinavian-based Ethiopian gold exploration and mining company, in collaboration with the Ethiopian government, Prime Minister Abiy Ahmed, officially inaugurated the Segele mine. Adding to the excitement of the day was the gold pour, a symbolic act overseen by Prime Minister Abiy. The gold pour yielded an impressive 6.5 kilograms, a shining example of the mine’s high-grade ore and production capabilities. “The Segele mine is a testament to Ethiopia’s vast potential in the mining sector and the importance of international partnerships to realize this potential,” said Prime Minister Abiy. “We are proud to see this project reach a significant milestone, benefiting not only the national economy but also the communities around it.” Akobo Minerals CEO Jørgen Evjen commented: “The inauguration of the Segele mine is a defining moment for Akobo Minerals. This project is the result of years of

dedication, collaboration, and innovation.” Akobo Minerals has invested extensively in its exploration and mining operations and community development initiatives, including local job creation, supporting local education, improving healthcare, and enhancing infrastructure, to ensure the project’s long-term success and positive impact on the surrounding area. Caption: Akobo: Akobo Minerals inaugurates the Segele Mine. ■



Akobo Minerals inaugurates the Segele Mine.

Anglo American plc shareholding reduces to 66.7%

Anglo American South Africa (AASA), a wholly-owned subsidiary of Anglo American plc, has disposed of around 6.6% beneficial interest in the securities of the company, through a second accelerated bookbuild. Following the disposal AASA now holds 66.7% of the issued ordinary shares in the company. The disposal follows AASA’s placement of some 5.3% beneficial interest in the securities of the company in September 2024, following which AASA held 73.3% of the issued ordinary shares in the company. ■

Alphamin Resources wins 2024 Sunday Times Top 100 Company Award

TSX Venture Exchange listed Alphamin Resources has claimed top spot at the annual *Sunday Times Top 100 Companies Awards* that were held in Parktown, Johannesburg, recently. Grindrod and Pan African Resources placed second and third respectively. *The Sunday Times Top 100 Companies Awards* is funded by BCX and powered by Deloitte. To qualify for the *Sunday Times Top 100 Companies Awards*, JSE-listed businesses are required to hold a minimum market capitalisation of R5 billion as of 31 August 2024, with winners determined by the highest returns for their shareholders over a five-year period, based on a theoretical initial investment of R10 000. Alphamin Resource Corp’s 5-year compound annual growth rate (CAGR) of 39.6% for the period from 1 September 2019 to 31 August 2024, means that R10 000 invested in 2019 would have delivered R53 976 in 2024. Grindrod realised an annual CAGR of 33.2% to deliver R41,879, while Pan African Resources returned R35 721 with a CAGR of 29% over the same 5-year period. ■

BME honoured again with CAIA safety award

With its safety focus entrenched as a key aspect of overall operational excellence, BME has been recognised as a leading force in safety at this year's annual Chemical and Allied Industries Association (CAIA) Responsible Care® awards. The awards honour companies that deliver outstanding safety performance over a four-year period. BME, a member of the Omnia Group, was announced as runner-up in the Responsible Care® Sustained High Performance Awards – for continuous improvement in overall performance of the business. "We are proud to have integrated the highest levels of safety into all aspects of our business, including not only within our own staff but with regard to the communities and environment around our operations," said Dr Ramesh Dhoorgapersadh, General Manager for Operational Excellence & SHERQ (Safety, Health, Environment,

Risk, and Quality) at BME. "The award considers the time period during which we were able to bring our recordable case rate (RCR) – a key indicator in safety performance – down to zero."

This RCR landmark, achieved in 2023, puts BME in a leading safety position in the explosives and blasting segment in South Africa. Dhoorgapersadh highlighted that BME's focus was strongly aligned with Omnia's commitment to a safety-first culture in pursuit of zero harm. BME, as a division of Omnia Holdings, is committed



BME honoured with CAIA safety award.

to Omnia's purpose of 'Innovating to enhance life, together creating a greener future. This approach ensures that all employees create and maintain a safe place of work, safeguard and protect the environment, and contribute positively to communities. ■



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New Digital Dome opens in Joburg

The old Johannesburg Planetarium has relaunched as the state-of-the-art Wits Anglo American Digital Dome after undergoing major refurbishments. It will open to the public in February 2025.

The new Wits Anglo Digital Dome offers a 360° immersive experience for visitors of all ages, with a variety of shows for young and old. It will also serve as a modern teaching venue and a collaborative research space where scientists and students can visualise their work – be it in big data, astrophysics, the digital arts, artificial medicine, microbiology, or precision medicine. First completed in 1960, the old Planetarium was the first full sized Planetarium in Africa. The new Digital Dome is the largest of its kind in the southern hemisphere, made possible through an investment of R90

million from Anglo American and Wits University. “For the past 64 years, the Planetarium has entertained, inspired and educated millions of visitors from Gauteng and beyond,” said Professor Zebulon Vilakazi (FRS), Vice-Chancellor and Principal of Wits University. The development of Johannesburg is intrinsically intertwined with the origins and growth of Wits, Anglo American, and mining.

Duncan Wanblad, Chief Executive of Anglo American said: “At Anglo American, we see investment in tertiary education as vital for advancing knowledge, driving innovation, and boosting economic growth. Universities are hubs of research and development, producing skilled professionals who tackle global challenges and push technological and scientific



Duncan Wanblad, Premier Lesufi and Prof. Vilakazi.

boundaries. Infrastructure like the Digital Dome enable this progress, providing students with specialised skills, enhancing job prospects and earning potential while contributing to broader societal and economic transformation.” ■

Impala PEO ESD fund to empower local SMMEs in Rustenburg

Platinum miner, Impala Platinum, recently launched the Impala Peo Enterprise and Supplier Development (ESD) Fund, a major initiative aimed at empowering local small, medium, and micro enterprises (SMMEs) across the Rustenburg region. The fund has committed R50 million over five years to provide accessible, low-interest financing to black-owned businesses – with a focus on women- and youth-led enterprises – located in the communities that host the Impala Rustenburg and Impala Bafokeng’s operations. The initiative seeks to build economic resilience, fuel job creation and drive inclusive economic growth.

To address the funding barriers faced by small businesses, the Impala Peo ESD Fund is structured around two funding streams to meet the specific needs of local suppliers:

1. Short-term funding: R25 million is dedicated to helping SMMEs fulfil short-term orders. This funding stream offers low-interest loans of between R50 000 and R2 million, enabling businesses to deliver confirmed orders with a quick turnaround time. Loan repayment will be expected on successful delivery and payment by Impala clients.
2. Medium-term funding: R25 million is allocated to supporting enterprises with medium-term contracts. Loans from R250 000 to R5 million will be made available to enable businesses commit to and complete larger, sustained projects, which take place over 12 to 36 months.

The Impala Peo ESD Fund will also support enterprises by providing access to market opportunities, infrastructure, and a range of business services, equipping them for sustainable growth. Each business applying for a Peo Fund loan will undergo a due diligence process to confirm eligibility, with criteria including geographical focus, black ownership, an annual turnover below R50 million, and compliance with community and regulatory standards. Priority will be given to black-owned SMMEs led by women and youth. At the

fund’s launch on 7 November 2024, Impala Rustenburg’s Head of Sustainable Development, Martin Pieters, said the Impala Peo ESD Fund represented a groundbreaking move for the company, one that is rooted in a commitment to uplift and empower local communities. “Our goal is to create socioeconomic opportunities where they are most needed. By facilitating access to finance and opening market opportunities, we’re fostering the right conditions for local enterprises to thrive and contribute to the regional economy.”

The Impala Peo ESD Fund will target SMMEs in communities within the sphere of influence of the Impala Rustenburg and Impala Bafokeng operations, including Bafokeng communities, Freedom Park, Meriting, Seraleng, Phatsima and Boshoek, bringing a focused approach to economic inclusion and sustainable development. ■



Impala Platinum launches the Impala Peo Enterprise and Supplier Development (ESD) Fund.

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Mining production ends Q3 in positive territory

Following struggles in earlier months, mining production ended the third quarter on the front foot. Seasonally adjusted real mining production increased by 3.8% month-on-month (m-o-m) in September. This follows an increase of 3.3% (m-o-m) recorded in August. The biggest production increases were recorded in iron ore (+14.5% m-o-m), diamonds (+31.8%) and non-metallic minerals (+16.9%). The latter category includes limestone, sand, cements etc.

On a year-to-year (y-o-y) seasonally adjusted basis (i.e. comparing September 2024 to September 2023), total mining production increased by 4.7%. This follows an y-o-y increase of 0.5% in August 2024. The annual increase in production for September was broad based, with all but two subsectors posting gains. Contributing to the increase in total production were diamonds (+35.4% y-o-y), nickel (+21.8%), chrome (+17.3%), copper (+15.9%), manganese (+13.5%) and PGMs (+6.7%). Coal (-4.4% y-o-y) and gold (-3.7%) were the two commodities whose production declined. Coal production has been affected by the sustained Transnet port and rail inefficiencies. Coal prices have remained virtually flat since January 2024 at around \$105/t. As for the gold price, it is up by 34% compared to September 2023 where it was \$1 916/oz compared to \$2 571/oz in September 2024.

While total mining production remains lower than pre-Covid levels, mainly because of declining gold production, sales earnings continue to perform well. It is important to note that if gold is excluded, total mining production has fared better. Also worth noting is that the sales earning data performance is based on actual (nominal) data. It is not in real terms, which might tend to overstate actual performance because it has not been deflated to take into account cost increases in the mining sector. The sales number is a function of the volume of production and commodity prices. Input cost inflation in the mining sector is higher than in sectors such as agriculture and manufacturing.

Year-to-date (YTD) real mining production is marginally higher (+0.7%) in the first nine months of 2024 compared to the same period last year. Expectations



Mining production ends Q3 in positive territory.

are that total mining production in 2024 will increase by 0.5% to 1%.

Besides the production numbers for September, Stats SA released updated weightings for the major subsectors of mining. The composition of mining production continues to undergo a shift with the PGMs increasing its share in mining production from 26% to 30.2%. The share of coal has declined from 25.7% to 21.8%.

Bottom line: After contracting in Q1 and Q2 2024 and subtracting from overall GDP, real mining production increased by 1% in the third quarter (relative to Q2). Looking ahead to 2025, Donald Trump's re-election as US President should ensure that the world's largest economy is more inward-looking than the Biden administration. While early days, this could have adverse implications for global trade and GDP growth. As for the individual commodities, the following should be noted:

- Domestic gold production is on a structural decline. Intermediate input costs are a major concern including that electricity costs continue to increase by more than domestic and

global consumer inflation. Labour cost increases continue to be a challenge as wage settlements are typically above CPI inflation. As for the gold price, in the short- to medium term it is expected to remain buoyant.

- PGMs production seems likely to stabilise as the move to battery electric vehicles is likely to slow down on account of Trump winning the presidency in the US.
- Coal. The sector is faced by diverging trends. On the one hand, improved Eskom plant performance should boost the demand for coal. However, rail and port problems continue to hamper exports, especially at current prices that make trucking coal less viable.
- Iron ore. In the medium-term, Trump's re-election is set to negatively affect China's exports of manufactured goods. Iron ore is an input into steel manufacturing and most of China's goods exports use steel as an input. This might affect South Africa's iron ore exports to China, as well as other minerals such as chrome and manganese that feed into the Chinese stainless-steel sector. ■

Encouraging results from exploration at the Motapa Gold Project

AIM-listed Caledonia Mining has announced the first results from its recent exploration programme at Motapa, an exploration project acquired in November 2022, located directly adjacent to the company's Bilboes Gold Project in southern Zimbabwe. At Motapa, the combination of diamond drilling (DD) and reverse circulation drilling (RC), designed to test the continuation of sulphide zones of mineralisation below the historic oxide open pits, have returned highly encouraging results. In addition, shallower drilling in new target areas has returned encouraging results both in shallower oxide, and deeper sulphide zones. The programme to date has achieved the initial objectives and included 12 724m of trenching, 4 143m of DD and 5 433m of RC. Results included significant high grade gold mineralisation in numerous areas (e.g. in particular the Jupiter, Pluvius and Mpudzi areas) which will now be the focus for follow up drilling with a view to defining an open pit mineral resource. Chief Executive Officer, Mark Learmonth,

said: "The results from the sampling at Motapa have delivered encouraging results in terms of strike width, length and grade... Motapa sits adjacent to Bilboes, which is where the company plans to develop a major new high grade open pit gold mine. These initial results confirm that Motapa will continue to form a key role in the company's growth strategy." ■



Caledonia Mining receives positive exploration results from the Motapa Gold Project.

Feasibility study for Omitiomire project reports \$224 m NPV

Copper developer, Omico Copper, has reported positive results from the Bankable Feasibility Study (BFS) on its 95%-owned Omitiomire Copper Project. Omico is a joint venture between Greenstone Resources LP, a private equity fund specialising in the mining and metals sector, and International Base Metals Limited, an Australian natural resources unlisted public company. Mark Sawyer, Partner – Greenstone Resources LP, commented, "As the manager of

this project, we are thrilled to be able to report an extremely exciting milestone in the Omico development. Against a backdrop of scarce quality copper projects and rising demand, the Bankable Feasibility Study has defined a highly compelling copper mining operation, on a standalone basis. We look forward to the next phase of development. There is no doubt the Phase 4 metallurgical test work, included in this Bankable Feasibility Study, is a significant enhancement to the Omitiomire business case. That impact can be gauged in the project's robust economics and also in the contribution that this generational asset is expected to make to our local communities for years to come. With the anticipated creation of 800 to 1 000 direct jobs and \$500 million in life of mine royalties and corporate taxes."

Key Performance Indicators (at

US\$4.50/lb copper):

- US\$224 million Net Present Value (NPV) (8% discount, after-tax)
- 18% Internal Rate of Return (IRR) (after tax)
- 3.7 Years payback period
- Life of Mine (LoM) 15 years
- Capital intensity of US\$12,480/t copper cathode
- LoM gross revenue of US\$3.8 billion
- LoM free cash flow (FCF) of US\$644 million
- Cash costs (C1) of US\$5,836/tonne copper cathode
- All in Sustaining Costs (AISC) of US\$6,133/tonne of copper
- Average copper cathode production of 26 800 tonnes per annum (total of 381 650 tonnes of copper cathode produced over the LoM).
- Peak annual production of 32 000 t per annum by Year 2 of operation. ■



Omico Copper reports positive results from the Bankable Feasibility Study.

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By leveraging 5G Private Networks, the mining industry can achieve more sustainable practices, better resource management, and faster decision-making.

Redefining mining with 5G private networks

By David Behr, Chief Executive Officer, MTN Converged Solutions

Transforming mining operations: In the face of volatile markets and the need to balance social and economic pressures with productivity and yields, today's mining industry is at a crossroads. 5G Private Networks are emerging as a crucial catalyst, offering solutions that enhance operations while supporting social and sustainability goals. Although the adoption of 5G Private Networks is still in its early stages, many companies are actively exploring their potential for mission-critical wireless communication.

Laying the foundation for Smart Mines

5G-enabled technologies are paving the way for smart mines, providing seamless connectivity for various applications. These include mobile robots, self-driving machines, automated guided vehicle systems (AGVs), and predictive maintenance. 5G Private Networks offer a fast, secure, and private foundation for the mines of the future, significantly improving operational efficiency and safety.

David Behr, CEO of MTN Converged Solutions, emphasises the transformative potential of 5G in mining: "5G Private Networks are not just about faster internet speeds. They are about creating a robust, secure, and highly efficient operational environment that can handle the complexities of modern mining. This technology is a game-changer for the industry."

The benefits of 5G in mining

According to leading analysts from IDC, Gartner, The Business Research Company, and Deloitte, 5G is a driving force behind the digital transformation of the mining sector.

The technology promises substantial benefits, such as:

- Up to 40% improvement in drill rig operations
 - Up to 20% energy savings
 - Over 30% efficiency gains through predictive maintenance
- Behr adds, "The efficiency gains we are seeing with 5G are unprecedented. From energy savings to improved drill rig operations, the benefits are clear. This is about making mining more sustainable and more productive."

Customisation and optimisation

Private Networks are tailored to the specific needs of each organisation, optimised for speed, reliability, and other performance metrics. As miners gain more experience with these networks, they can leverage 5G for advanced technologies like edge computing, Big Data services, and secure private cloud services, further enhancing operational results, profitability, and stakeholder value.

"Customisation is key," Behr explains. "Every mining operation is unique, and 5G Private Networks allow us to tailor solutions that meet specific needs, whether it's enhancing safety, improving efficiency, or reducing costs."

MTN is at the forefront of implementing smart mining



The future of mining is here, and it's powered by 5G.

solutions in South Africa, building private networks for several companies, particularly in the mining sector.

Behr highlights MTN's commitment: "We are proud to be leading the way in smart mining solutions. Our work with large industry mining companies showcases the potential of 5G to revolutionise mining operations, making them safer, more efficient, and more sustainable."

Advantages of 5G Private Networks

The high capacity and low-latency capabilities of 5G, combined with the exceptional security of private networks, make this technology ideal for modernising the mining industry.

5G Private Networks are revolutionising the mining sector by significantly enhancing operational efficiency, safety, and productivity. These networks provide high bandwidth and low latency, enabling real-time monitoring and control of mining operations. This supports the use of autonomous vehicles and equipment, predictive maintenance, and remote operations, which collectively reduce downtime, maintenance costs, and the need for on-site personnel. Additionally, 5G Private Networks improve safety through continuous monitoring of environmental conditions and worker health, and by automating dangerous tasks, thereby reducing the risk of accidents and injuries.

Moreover, 5G Private Networks facilitate the integration of advanced technologies such as IoT, edge computing, and AI, which further optimise mining operations. These networks can be customised to meet the specific needs of each mining operation, ensuring optimal performance and scalability. The benefits include increased productivity, enhanced safety, improved operational efficiency, and significant cost savings. By leveraging 5G Private Networks, the mining industry can achieve more sustainable practices, better resource management, and faster decision-making, ultimately transforming the sector into a more efficient and safer environment.



The mining industry is collaborating with MTN to leverage 5G Private Network technology.

"Safety is paramount in mining," Behr notes. "With 5G, we can implement real-time monitoring and automation that significantly reduce risks and enhance the safety of our operations."

Overall, the adoption rate of private 5G networks is increasing across various industries, with mining being one of the key sectors due to its need for reliable, high-capacity, and low-latency communication solutions in often remote and challenging environments. The adoption of 5G Private Networks in the mining sector is growing, but it is still in the early stages, according to recent reports by networkworld.com.

The mining industry is collaborating with MTN to leverage 5G Private Network technology, co-creating shared value. For more information on how MTN is helping redefine mining through 5G Private Networks, visit MTN Business.

Behr concludes, "The future of mining is here, and it's powered by 5G. At MTN, we are committed to driving this transformation and helping our partners achieve new levels of success." ■

Gold glitters in 2024, more of the same in 2025?

By Nelendhre Moodley

2024 continues to be a superb year for gold, which is on-track to deliver record production, surpassing 2018 as the previous record year.



John Reade: WGC's Market Strategist for EMEA.

“It is a really exciting time for gold, with the industry clocking more than 30 all-time highs in terms of price. This record-breaking run has caught many people by surprise.

Given the interest rate cutting environment, we expected gold to do reasonably well, however, not as well as it did,” says WGC's Market Strategist for EMEA, John Reade.

For the third quarter of 2024, total gold demand (inclusive of OTC investment), gained 5% y/y to 1,313 t – a record for a third quarter. This strength was reflected in the gold price, which reached a series of new record highs during the quarter. The value of demand jumped 35% y/y to exceed \$100bn for the first time ever, the World Gold Council (WGC) said.

Speaking to *Modern Mining* soon after the WGC released its World Gold Demand Trends third quarter 2024 report, Reade explained that the past few years saw a shift in the drivers for gold, where previously it was based on US interest rates and the strength of the dollar. However, over the past two years, strong demand for gold has emanated from emerging markets.

“Most industry experts have been surprised because gold has been surging for reasons other than the traditional ones, with strong demand from a variety of emerging market buyers, including Central Banks, retail investors, high net worth individuals and strong jewellery demand experienced earlier in the year. Instead of being price takers of the gold price as set by Western markets; emerging markets, the biggest buyers of gold in 2024, are starting to exert their strength in determining where the gold price is headed.”

Emerging markets are centred around Asia and the Middle East and include the dominant players of India, China and Turkey, amongst others.

While emerging market gold consumers have, for decades held great importance in gold purchases, Reade ascribes the market shift, particularly over the past two years, largely to the loss of interest in gold from Western investors.

However, with interest rates in the US



decreasing, Western investors are turning their attention to gold as a source of investment once more.

ETFs on a roll

According to the WGC's Q3 2024 World Gold Demand Trends report, global investment demand, which more than doubled year-on-year to 364 t, was driven by a shift in demand for gold ETFs primarily from Western investors. Globally, gold ETFs added 95 t, marking the first positive quarter since Q1'22.

“There have been general outflows in ETFs in 2021, 2022 and 2023, however, in Q3 of 2024, ETF flows turned positive - a sign of increasing investor confidence in gold, predominantly from North America and Europe. The key driver underpinning a surge in the price of gold is the rekindled investor interest following interest rate decreases in Europe, and, towards the end of the quarter, from North America. Over the past few years, high interest rates have discouraged Western investors

Most industry experts have been surprised because gold has been surging for reasons other than the traditional ones.



There are expectations of increased appetite for gold investments going forward.

from investing in gold. With interest rates expected to continue falling in 2025, there are expectations of increased appetite for gold investments going forward.”

Technology markets increase efficiency to reduce gold consumption

While a soaring gold price bodes well for investors and gold miners, it is, however, damaging to certain sectors of the gold market, such as jewellery and technology markets.

According to the report, bar and coin investment at 859 t was down 9% y/y, from a relatively strong Q3'23. Gold jewellery consumption (459 t) sank 12% y/y despite strong growth in India. Although consumers bought reduced quantities, their spend on gold jewellery increased: the value of demand jumped 13% y/y to more than \$36 bn. AI also continued to support the use of gold in technology (83 t) and grew 7% y/y albeit from a fairly low

base with the outlook remaining cautious.

“The gold price, which breached barriers to new highs, has seen jewellery buyers retreating; purchasing less gold in 2024. On a more positive note, the technology sector recorded decent growth over the last three quarters, with increased demand from the electronics segment, in particular. The revolution taking place in artificial intelligence has led to a scramble for high powered chips and integrated circuits. Globally, there has been a surge in the number of consumers purchasing more powerful computers for data centres, which has boosted demand for gold from the technology segment.”

While gold remains an essential component of high-tech applications, demand for the precious metal is small, representing between seven and eight percent of total demand. “Even though demand from the technology sector seems

The key driver underpinning a surge in the price of gold is the rekindled investor interest following interest rate decreases in Europe, and, towards the end of the quarter, from North America.



Over the past two years, strong demand for gold has emanated from emerging markets.



Although consumers bought reduced quantities, their spend on gold jewellery increased.

to be growing, product manufacturers continue to seek innovative ways to use less gold, including efforts to miniaturise components. So, while there are more chips being required, manufacturers are using gold more efficiently, in other words, less gold per chip.”

Africa and gold production

The World Gold Council's Q3 2024 World Gold Demand Trends report revealed that total gold demand increased 5% year-on-year to 1,313 t, a record third quarter, with total demand exceeding \$100bn.

According to Reade, quarter three of 2024 delivered record gold mine production of 989 t – with Africa being the biggest contributor to gold production.

In 2023, the African continent produced over 1 000 tons of gold, representing 28% of global gold total.

“And whilst we've seen growth from other regions, notably Canada, it is not of the scale to displace Africa as the largest regional gold producer.”

According to Reade, with the gold price averaging over \$2474/oz in 2024, gold mines have been profitable for some time

and continue to take advantage of the unprecedented high prices by processing material at speed.

“In instances where mines have spare capacity, we are seeing lower grade stockpiled material being processed,” explains Reade, who expects mines to fast-track debottlenecking initiatives in 2025 as they look to ramp up production volumes.

Given that new discoveries, new projects and expansion initiatives take years to come online, with “very little the gold mining industry can do to rapidly increase production”, Reade believes that going into 2025, miners will target expansions that deliver incremental production increases and quick fixes, such as plant de-bottlenecking initiatives.

Discussing challenges facing the gold mining industry, Reade flags the long lead times to getting greenfields projects into production and ongoing cost inflation, which sees all in sustaining costs (AISC) increasing by 6% year-on-year

“Even though a miner with a gold discovery may be eager to bring a project into production, in some countries gaining the necessary permits often takes

years. As it stands, it is becoming increasingly difficult to build new gold mines in certain jurisdictions, and in some instances, it can even take decades to bring a project into production. Another key challenge relates to AISC, which while it has shown significant decreases from double-digit levels experienced a few years ago, remains a concern.

M&A on the rise – gold projects ripe for the picking in 2025

Although the gold price is sizzling, the production profiles of many large mining companies remains “pretty flat”. Given the difficulty associated with fast-tracking new gold discoveries to production, industry consolidation is anticipated as majors target early-stage gold projects to bump up their production portfolios.

“In terms of mergers and acquisitions, we expect that going into 2025 there will be more mid-tier and large-scale gold producers looking to make acquisitions. There have already been several majors that have made a play for smaller gold projects in 2024. This includes AngloGold Ashanti, which acquired Centamin for \$2.5-billion and Minera Alamos, which is in the process of purchasing ASX-listed Sabre Gold Mines Copperstone gold project in Arizona, to add a further 150 000 ozpa to its portfolio.”

Further to this, ASX-listed entities, Aurum Resources and Mako Gold have announced their intention to unite their flagship Napié and Boundiali gold projects in Côte d'Ivoire through off-market takeover bids.

“Aside from the notable deals that have been inked, there have been several smaller deals that have also been made – all of which is an indication of the robustness of this precious metal,” says Reade.

So, is the industry anticipating gold sector growth in the years to come?

“Although 2024 is set to be a record year for gold production; this is not an industry which is demonstrating that it can report strong, sustained growth. This is an industry which is showing evidence of plateauing globally,” concludes Reade. ■



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Diamond market outlook: collaborative efforts needed to turn the tide in 2025

By the State Diamond Trader

The general sentiment is that the market outlook in the short-to-medium term will be driven stock levels in the value chain, particularly the midstream which has been reported to have high levels of inventory going into the festive season. Demand at retail level has been negatively impacted by the development of the increased need for transparency in ethical sourcing of rough diamonds. The millennials are becoming more demanding of the 5th “C” I.e. Consumer Confidence.

In the main, the long-term outlook will be driven by supply and demand fundamentals. The rarer and scarcer the natural rough diamond becomes, the greater the chances of increased demand and willingness to pay a premium on the diamonds. A positive long-term industry outlook will be driven, supported by a responsible and measured supply to the value chain, simultaneously supported by rising global affordability. There is a greater and more urgent need for aggressive industry initiatives like marketing to reinforce the desirability of natural diamonds.

There has been a sharp decline in Lab Grown diamond (LGD) prices, but the industry does not have verifiable data to show that consumer preferences have shifted due to price. It

is therefore imperative that marketing strategy focus on the difference between the LGD and natural diamonds and the role of diamonds in improving the lives of people in mining countries, particularly in Africa.

Future production increases are unlikely if one considers the lifespan of mines globally and the impact of geopolitics within the natural diamond space. Recently, the G7 Protocol banned the rough diamonds from Russia entering their markets. Russia accounts for just over 30% of the global production in terms of carats. There are suppressed exploration budgets over the past decade, a scarcity of large new discoveries, and lengthy mine development timelines that make it difficult to foresee significant new volume increases. In the South African context, the



It is critical to continue driving overall diamond jewellery growth.

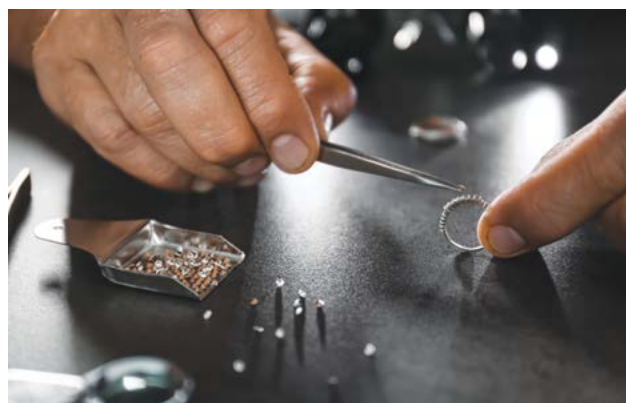
country has dropped out of the top five (5) diamond producing countries in value and in carats. This is likely to change in the short term because Venetia Mine in Limpopo, which accounts for approximately 40% of South Africa's production, is still undergoing underground expansion.

It would be remiss of this outlook not to mention the global economic terrain that the natural diamond industry operates under. The major downstream consumer markets for diamonds are the United States of America, China, and India, with the Gulf States and Japan making up the largest five markets. This means that the health and recovery of these economies is directly linked to the sustainability of the natural diamond industry. Slow recovery post the Covid-19 pandemic has added to the multitude of challenges faced by the diamond market. It will take a collaborative effort to turn the tide in 2025 to ensure that diamonds are the most desirable purchase when compared to other precious metals or gemstones.

Recovery amid economic uncertainty

The diamond industry entered 2024 on the back of a fragile recovery from global economic challenges that emerged in late 2022 and 2023. The International Monetary Fund (IMF) has forecast modest global economic growth of around 3% for 2024, with inflationary pressures starting to ease but still impacting consumer spending. High inflation, particularly in energy and food costs, had a dampening effect on discretionary income in major diamond markets, especially in North America and Europe, leading to cautious consumer behaviour.

While these economic pressures have softened overall



The diamond market in 2025 is characterised by a mix of challenges and opportunities.



There are a number of economies that are showing positive offshoots in terms of potential demand for rough diamonds.

demand for luxury goods, including diamonds, there are signs of resilience in key markets. The United States continues to be the largest consumer of diamonds, with demand driven by weddings, anniversaries, and other significant life events. Meanwhile, China, after a prolonged period of strict Covid-19 restrictions, is expected to see a resurgence in diamond demand as consumer confidence returns. As Chinese markets recover, the upcoming Lunar New Year and Valentine's Day in early 2025 are likely to boost retail sales.

Despite these positive signals, consumer behaviour in 2025 remains unpredictable, especially considering persistent economic uncertainty. Diamantaires are likely to continue exercising caution in inventory management, focusing on fulfilling specific orders rather than taking on excess stock. This trend has already become a hallmark of the post-pandemic diamond trade, where supply and demand imbalances have forced the industry to operate with greater agility.

Supply chain constraints: The impact of sanctions and geopolitical tensions

One of the defining characteristics of the 2024 diamond market is the ongoing supply constraints resulting from the geopolitical conflict between Russia and Ukraine. Russia, which accounts for roughly one-third of the world's rough diamond production, has been subject to stringent sanctions from the United States and Europe. These sanctions have significantly disrupted the global diamond supply chain, particularly affecting Alrosa, Russia's state-owned diamond mining company.

As Western markets distance themselves from Russian



The African diamond industry faces several challenges, including the need for increased investment in mining infrastructure.

diamonds, alternative sources of rough diamonds have become increasingly important. African producers, especially Botswana, Angola, and South Africa, are benefiting from heightened demand as buyers seek to fill the gap left by Russia. However, these producers face their own challenges, including limited mining capacity, rising production costs, and stringent regulatory frameworks.

For South Africa, the State Diamond Trader (SDT) has played a crucial role in ensuring a stable supply of rough diamonds to the local market, particularly for beneficiation purposes. The SDT has leveraged this opportunity to strengthen its partnerships with local diamond cutters, polishers, and jewellery manufacturers ensuring that the country captures more value from its natural resources. By promoting beneficiation and encouraging local diamond processing, the SDT aligns with South Africa's broader economic development goals, which include job creation and skills development in the diamond sector.

Lab-grown diamonds: A growing threat to natural diamonds

The rise of lab-grown diamonds continues to reshape the diamond market in 2024, posing a significant challenge to traditional diamond producers. Lab-grown diamonds, which are chemically and physically identical to natural diamonds, have gained widespread acceptance, particularly among younger, environmentally conscious consumers. In 2024, the market share of lab-grown diamonds is expected to grow even further, driven by lower prices and the perception that these diamonds are more sustainable and ethical than mined diamonds.

Lab-grown diamonds are now widely available across major jewellery retailers and online platforms, offering consumers an affordable alternative to natural diamonds. Prices for lab-grown diamonds are typically 30-50% lower than their natural counterparts, making them an attractive option for

budget-conscious buyers. Additionally, lab-grown diamonds are marketed as being free from the environmental and ethical concerns associated with traditional diamond mining, such as land degradation and human rights violations.

For natural diamond producers, including the State Diamond Trader, this trend represents both a challenge and an opportunity. While lab-grown diamonds compete directly with natural stones in the engagement and wedding ring market, a strong demand remains for natural diamonds in other segments, particularly among high-net-worth individuals who value the rarity and authenticity of mined diamonds.

To counter the rise of lab-grown diamonds, natural diamond producers are focusing on storytelling and marketing strategies that emphasise the unique qualities of natural diamonds—such as their geological history and the positive social and economic impact of diamond mining in producing countries. The SDT, in particular, is well-positioned to highlight the role that the diamond industry plays in supporting South Africa's economy, creating jobs, and fostering local entrepreneurship through its Enterprise Development Programme.

The role of African producers in the global diamond market

Africa continues to be a dominant force in the global diamond market, accounting for more than 50% of global diamond production by volume and approximately 70% by value. Countries like Botswana, Angola, Namibia, and South Africa are major players, supplying a significant portion of the world's rough diamonds.

In 2025, African producers are expected to see continued demand for their diamonds, particularly as global buyers seek to diversify their supply chains in the wake of sanctions on Russian diamonds. However,

The State Diamond Trader plays a crucial role in ensuring a stable supply of rough diamonds to the local market, particularly for beneficiation purposes.

the African diamond industry faces several challenges, including the need for increased investment in mining infrastructure, technology, and regulatory frameworks. Additionally, small-scale miners and local diamond processing companies often struggle with access to financing and international markets, which limits their ability to compete with larger, more established players.

The State Diamond Trader, through its various programmes, is working to address these challenges by promoting beneficiation and supporting the development of a local diamond cutting and polishing industry.

The SDT's Enterprise Development Programme, for example, aims to empower young South Africans by providing them with the skills and resources they need to succeed in the diamond industry. This initiative is critical to ensuring the long-term sustainability of South Africa's diamond sector and to fostering greater inclusion in an industry that has historically been dominated by a small number of players.

Sustainable practices and ethical sourcing

Sustainability and ethical sourcing remain top priorities



Countries like Botswana, Angola, Namibia, and South Africa are major players, supplying a significant portion of the world's rough diamonds.

for the diamond industry in 2025. As consumers become more conscious of the environmental and social impact of their purchases, diamond producers and retailers are under increasing pressure to demonstrate that their diamonds are sourced responsibly and sustainably. This has led to greater transparency in the supply chain, with companies adopting blockchain technology and other digital tools to trace the journey of a diamond from mine to market.

The State Diamond Trader has been at the forefront of promoting ethical sourcing practices in South Africa's diamond industry. As part of its mandate, the SDT ensures that all diamonds traded through its platform are conflict-free and comply with the Kimberley Process Certification Scheme (KPCS). By promoting responsible practices and encouraging transparency throughout the supply chain, the SDT is helping to build consumer confidence in the South African diamond industry.

The future of the diamond market in 2025 and beyond

As the diamond industry looks to the future, several key trends are likely to shape the market in 2025 and beyond. First, the mismatch between rough and polished diamond prices is expected to persist, with rough diamond prices remaining firm due to supply constraints, while demand for polished diamonds fluctuates. This dynamic will continue to put pressure on manufacturers, who must balance rising costs with the need to remain competitive in an increasingly price-sensitive market.

Second, the growth of lab-grown diamonds will continue to challenge the dominance of natural diamonds, particularly in the lower to mid-tier segments of the market. To maintain their market share, natural diamond producers will need to invest in marketing strategies that highlight the unique value of mined diamonds, while also embracing technological innovations that

improve transparency and sustainability.

The growth of brands is another key component that will require urgent attention by the natural diamond industry. It is critical to continue driving overall diamond jewellery growth. The diamond industry must take full advantage of the rise in demand for branded jewellery by enhancing the diamond content of branded offerings. Participation under the South African banner at trade shows like the Hong Kong Gem and Jewellery show is one example of branding that will yield positive results. Consumers love a provenance story and the country, with its rich heritage and history, offers a unique proposition for its diamonds.

Finally, African producers, including South Africa, will play a critical role in shaping the future of the global diamond industry. By investing in beneficiation, promoting ethical sourcing practices, and supporting the development of local diamond processing industries, African countries can capture more value from their diamond resources and create sustainable economic growth for their populations.

Conclusion

The diamond market in 2025 is characterised by a mix of challenges and opportunities. While global economic uncertainty and the rise of lab-grown diamonds pose significant risks, the industry has shown resilience and adaptability in the face of these pressures. For players like the State Diamond Trader, the focus will be on promoting beneficiation, ensuring ethical sourcing, and leveraging the unique qualities of natural diamonds to maintain competitiveness in an evolving market. As the industry continues to navigate these changes, those who can innovate and respond to shifting consumer preferences will be well-positioned to thrive in the years to come.

There are a number of economies that are showing positive offshoots in terms of potential demand for rough diamonds. Countries like Indonesia, United Arab Emirates Turkey, Saudi Arabia, and Brazil whose middle to upper class income and wealth will grow substantially in the next decade. There is also the recent Communique of a declaration within the BRICS context that has been adopted to stimulate trade and economic cooperation. This must be cultivated to ensure that these countries' common interests produce mutually beneficial results, particularly in the area of diamond trading.

The diamond industry has always shown resilience in the face of adversity. It is strategic partnerships, formulated by sound policy development and strategic marketing interventions, that will be the biggest drivers of change in the future. It is also the joint collaborative interventions of governments and businesses alike that will help the natural diamond industry to rekindle its sparkle. There are many economic opportunities that exist through a harmonised relationship between the aforementioned stakeholders which must be interrogated for the common good and sustainability of the diamond industry. ■

For players like the State Diamond Trader, the focus will be on promoting beneficiation, ensuring ethical sourcing, and leveraging the unique qualities of natural diamonds to maintain competitiveness in an evolving market.

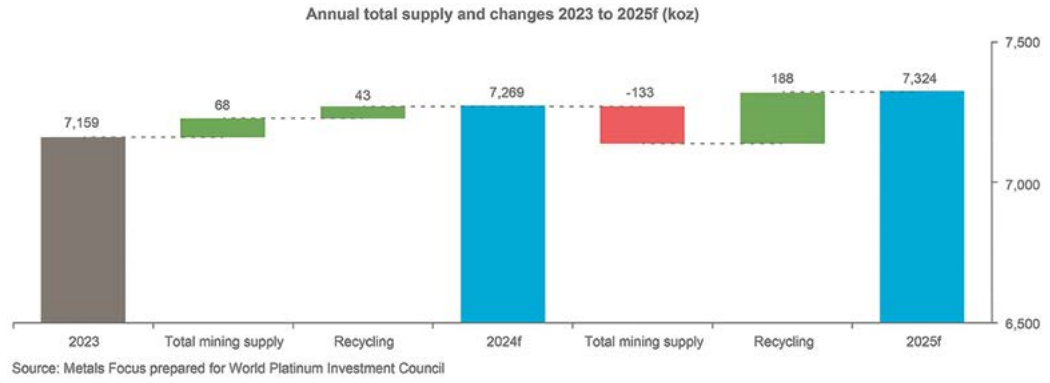
PGM Outlook for 2025

By Edward Sterck, Director of Research, World Platinum Investment Council

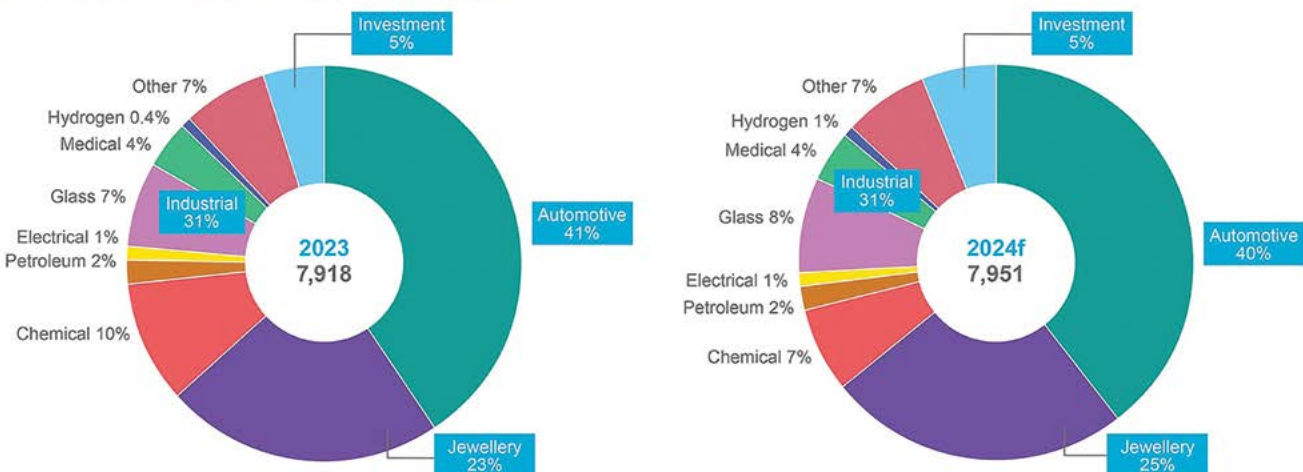
Platinum demand is proving resilient against the backdrop of global uncertainty, while platinum supply shows no sign of returning to pre-pandemic levels as the platinum group metal (PGM) basket price is not incentivising investment in growth.



Edward Sterck, Director of Research, World Platinum Investment Council.



Demand end-use shares, 2023 vs. 2024



This year, the platinum market is forecast to record its third successive annual deficit at 539 koz as demand of 7,863 koz exceeds supply of 7,324 koz. What is more, our two-to-five-year supply/demand outlook projects ongoing supply shortfalls through 2028, with annual platinum deficits expected to average 668 koz, or 8% of average demand, from 2025 to 2028. This outlook is predicated on robust demand, with upside from the diversity of platinum’s end uses, against limited supply, particularly in light of the sustained weakness in the PGM basket price which has caused miners to implement restructuring initiatives and, in some cases, mine/shaft closures.

The result of ongoing deficits is the rapid depletion of above ground stocks, which are forecast to decline by 40 per cent between 2022 and 2025.

In 2024, the platinum deficit was estimated at 682 koz (final numbers will be released on 5 March at www.platinuminvestment.com), with the exceptionally strong demand experienced in the prior year being sustained, achieving 7,951 koz. Supply is expected

to increase by 2% to 7,269 koz. In 2025, demand is expected to reduce by 1%, with supply increasing by 1%.

Despite its year-on-year increase in 2024, supply remains constrained. Mine supply last year was essentially flat, growing by 1%, largely on the back of stronger-than-expected refined mine production in South Africa and Russia. In the case of the former this was due to the release of work in progress inventory, while the latter resulted from the completion of smelter maintenance work ahead of schedule. In South Africa, mine supply also benefited from the easing of disruption caused by loadshedding.

Meanwhile, recycling supply was estimated to be 8% below the pre-pandemic five-year average in 2024, growing by a modest 3% to 1,587 koz. It is anticipated that headwinds concerning the availability of end-of-life vehicles for scrap might now recede after two years of pronounced declines as the flow of materials from consumers to scrapyards, and subsequently from scrapyards to refiners, improves.

In 2025, supply is forecast to grow by 1% to 7,324 koz, driven by



Jewellery demand for platinum appears to be moving beyond the low of 2023.

a 12% rebound in recycling supply to 1,774 koz as improvements in the autocatalyst recycling supply chain continue. In contrast, mine supply is expected to drop by 2% to 5,550 koz as the restructuring initiatives to curtail unprofitable ounces undertaken last year take effect.

However, it is our view that downside risk is attached to this year's supply outlook, not least the ongoing impact of the PGM basket price on mining sustainability. There is also potential for some overhang in the bottlenecks that have beset recycling.

At an estimated 7,951 koz, demand in 2024 was buoyant and narrowly exceeded that of the previous year, although the picture was complex – especially as cyclical trends in industrial demand played out. Automotive demand dropped an estimated 2% to 3,173 koz as global light duty vehicle production fell by 1% to 90.4 million units and heavy duty vehicle production also slowed. Platinum-for-palladium substitution grew to just over 750 koz; it remains a significant component of overall platinum automotive demand and is expected to continue to grow this year. In 2025, automotive demand for platinum is forecast to reach an eight-year high, growing by 2% to 3,245 koz, driven by both substitution and the growth in hybrid and commercial vehicles which will more than offset fewer pure-internal combustion engine (ICE) passenger vehicles.

Longer term, our research demonstrates the resilience of

automotive demand for platinum despite rising battery electric vehicle (BEV) market share and a reduction in ICE vehicle production, supported by factors including stricter emissions legislation, ongoing increased demand for hybrid vehicles, where platinum loadings are higher,

and platinum-for-palladium substitution. The anticipated decline in annual automotive platinum demand due to electrification of the global fleet will happen much slower than most had expected, with only 1% per annum of demand erosion projected to occur between 2023 and 2028, when it will still be around the 3,000 koz level.

In terms of automotive demand for palladium, our research estimates that the market remained in a substantial deficit of around a million ounces last year, with total demand down 3% year on year, of which 8,350 koz was automotive demand (down 1% year on year), and supply broadly stable.

In 2025, the deficit is expected to reduce because of slightly lower demand and an increase in recycling supply due to an improvement in the availability of scrap material.

Thereafter, looking through to 2028, we expect the palladium market to remain in deficit before eventually transitioning to surpluses. However, this is predicated on a significant forecast increase in palladium recycling supply, an outlook which is not without its risks given the recent headwinds facing PGM recycling and the possibility that these may take longer to resolve than current expectations suggest.

“

The anticipated decline in annual automotive platinum demand due to electrification of the global fleet will happen much slower than most had expected, with only 1% of demand erosion projected to occur between 2023 and 2028, when it will still be around the 3,000 koz level.

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Hydrogen demand for platinum is showing good growth.

Industrial demand for platinum, which eased by an estimated 1% in 2024 to 2,434 koz, and is projected to reduce by a further 9% in 2025 to 2,216 koz, must be understood within the context of the timing of capacity expansions. Last year, fewer chemical plants were commissioned in China, resulting in an estimated 28% fall in chemical demand to 563 koz that was mainly offset by robust demand elsewhere, especially glass, which grew by 29% to 671 koz.

Glass capacity additions that were previously expected in 2025 are believed to have occurred in the final quarter of 2024. As a result, the glass segment is

estimated to have achieved its second-best year on record for platinum demand in 2024, pivoting to what is projected to be its weakest year since 2019, this year. Excluding the glass segment, industrial demand is forecast to increase by 9% year-on-year in 2025, underpinned by double-digit growth in other segments. Notwithstanding the glass segment, forecast industrial demand in

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2025 remains above the ten-year average.

Notably, hydrogen demand for platinum is showing good growth, up an estimated 123% (reaching 64 koz) and a forecast 32% (reaching 84 koz) in 2024 and 2025, respectively, albeit off a low base. We remain positive regarding the outlook for platinum demand in relation to the expansion of the hydrogen economy, although we acknowledge that the rate of this expansion is still subject to uncertainty. The hydrogen market could account for over 10% of total platinum demand by 2030, increasing to more than 800 koz, driven primarily by the use of platinum in upstream (electrolyser) and downstream (hydrogen fuel cell) applications.

Jewellery demand for platinum appears to be moving beyond the low of 2023, having grown by an estimated 5% to 1,951 koz in 2024, driven by a surge in fabrication in India and with price-sensitive consumers finding better value in platinum prices compared to those of gold. This growth is expected to continue in 2025, with a 2% rise to 1,983 koz forecast based on a potential recovery in the beleaguered China market, and ongoing strength in India.

With regard to investment demand, in 2024 an estimated 17% increase in demand for larger bars in China (500g and over) to 157 koz and net positive exchange traded fund (ETF) holdings of 150 koz were offset by a 47% (151 koz) drop in global bar and coin demand, excluding China larger bars, driven by price-driven selling in Japan and weaker demand in North America. The result was a net positive investment demand of 393 koz. During 2024, we were delighted to note that Costco, the third largest retailer in the world, added platinum bars and coins to its online



Demand for bars of 500g and larger in China is growing. Picture credit: China Gold Coin Group



Costco has added platinum bars and coins to its online offering in the US, including the 1 oz Platinum Fortuna bullion bar. Picture credit: PAMP

offering in the US, the potential upside from which is not yet included in our numbers.

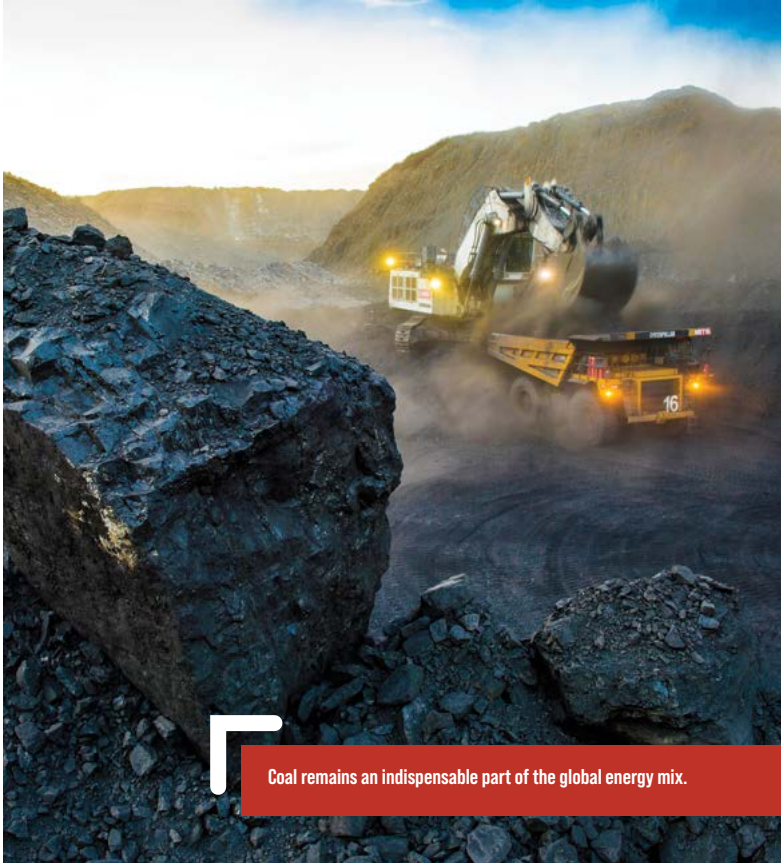
For 2025, total investment demand is expected to rise 7% to 420 koz, driven mainly by growth in stocks held by exchanges and an 8% increase in demand for bars of 500g and larger in China. While global bar and coin investment demand is forecast to ease by 12% to 151 koz, bar and coin demand in North America is projected to return to growth. Platinum ETF holdings are also expected to rise by 50 koz.

Overall, investor sentiment appears to be improving, attracted by strengthening fundamentals. Market deficits stemming from higher-for-longer automotive demand and ongoing supply challenges have already resulted in above-ground stocks becoming the supply of last resort. The depletion of these stocks should eventually help physical markets tighten and translate into renewed upward pressure on the platinum price. ■

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Coal remains an indispensable part of the global energy mix.

Coal Outlook: 2025 presents more complex dynamics

By Thungela

As the world shifts towards a future defined by sustainability and innovation, coal remains an indispensable part of the global energy mix. The year 2024 has been marked by both challenges and opportunities for the coal industry, while 2025 presents even more complex dynamics, driven by global trends. Despite the ongoing energy transitions, coal's importance as a reliable and affordable energy source, particularly in developing economies, cannot be understated.

Drivers of Coal Demand in 2024 and Beyond

Energy Security

In 2022, energy security emerged as a key strategic priority for governments worldwide triggered by the Russia – Ukraine conflict and the resultant ban on Russian commodities. This crisis led to an immediate increased demand and stockholding of energy (fuel) sources including coal. The energy source supply risks have been further elevated by the geopolitical tensions in the Middle East. The need by governments to ensure affordable and reliable energy security has again highlighted coal as a key energy source now and for the foreseeable future. Whilst the energy transition continues to evolve in developed economies in the main, developing countries will remain reliant on coal for energy and industrial applications.

Coal remains the legitimate energy choice for over 100 nations, providing critical support for economic development and urbanisation. This is especially true in regions like Southeast Asia and parts of Africa, where coal is vital to maintaining consistent power output. Developing nations, often grappling with nascent energy infrastructures, rely on coal as a dependable and cost-effective energy source. In fact, according to the International Energy Agency (IEA) Coal Market 2024 report, global coal demand is forecast to reach an all-time high of 8.77 billion tonnes (Bt) in 2024, following steady growth over the past three years.

The power sector remains the primary consumer, with electricity generation from coal projected to hit 10,700 terawatt-hours (TWh) in 2024, reflecting sustained global electricity demand. For at least the next two decades, coal will play a central role in delivering sustainable and affordable energy security, particularly in countries with limited fuel options. While reliance on fossil fuels may be declining in some regions, parts of emerging markets continue to employ coal and gas-fired power plants at enormous scales, maintaining their critical role in electricity systems.

Industrial Growth in Developing Economies

The IEA projects that energy consumption in Central and Southern Asia will increase by 18% between 2020 and 2040, with coal remaining a dominant energy source. By 2027, Asia is expected to consume over 70% of global coal, driven by rapid industrialization and energy security demands.

Countries like China and India, which together account for over 70% of global coal consumption, continue to lead this demand. Industrialisation in these regions has solidified coal's role in the energy mix, particularly as alternatives such as renewables and natural gas remain cost-prohibitive for many. While coal use has declined in some markets, it remains a vital energy source for electricity generation, as well as steel and cement production worldwide.

Supply Constraints

In addition to rising demand, the global coal supply is facing multiple challenges. Geopolitical tensions, such as the Russia-Ukraine war and that in the Middle East, have disrupted supply chains, while infrastructure limitations have further constrained coal production and transportation. Furthermore, access to capital for new coal investments and insurance remains limited, which will discourage new development of coal mine projects. This provides an opportunity for Thungela, as the company has access to existing high-quality coal resources and reserves.

Emerging as critical players in the coal sector, countries like India and China are increasingly investing in coal projects to foster self-reliance in industries such as agriculture, critical minerals, and chemicals. This shift aims to reduce dependency on imports of these commodities and ensures a stable domestic supply to fuel their economic growth. By funding new coal projects, these nations are addressing energy security concerns while supporting rapid industrialisation and economic self-sufficiency.

The pricing of coal in 2024 has been influenced by several critical factors as further detailed below.

Volatility in Global Markets

Coal pricing in 2024 has been marked by significant volatility, driven largely by geopolitical tensions and supply chain disruptions. The Russia-Ukraine conflict, in particular, has created supply bottlenecks, foreign currency restrictions and the increased the price of coal. However, the rising cost of production and logistics has also presented challenges for producers and consumers alike. As geopolitical tensions continue to affect energy markets, we expect coal prices to remain well supported, especially in regions that are heavily dependent on imports. Southeast Asia and parts of Africa will continue to see strong demand for coal as these regions prioritise economic growth and related energy security over an immediate transition to renewables.

Reduced Availability of High-Quality Assets

- One of the key challenges facing the industry is the reduced availability of high-quality coal assets. Many of the world's prime coal reserves are becoming increasingly difficult to access due to environmental regulations, operational constraints, and investment and financial barriers. This has contributed to tighter supply and upward pressure on coal prices.

Navigating challenges into 2025

Looking ahead to 2025, the coal industry will continue navigating challenges and leveraging opportunities while benefiting from several global trends:

- **Energy Transition and Geopolitical Volatility**
 - While renewable energy is gaining momentum, the energy transition remains complex and fraught with challenges. Increasing geopolitical tensions will likely persist, making energy security a critical focus for governments. Coal's reliability and affordability positions it as a key energy source during this period of transition.
- **Increased Demand from Developing Economies**
 - As we move into 2025, developing economies will continue to drive coal demand, particularly in Asia. The industrial growth of these nations, combined with the increasing need for energy security, ensures that coal will remain a vital part of the global energy mix for years to come. Coal remains an affordable, cost-effective energy source, crucial for developing nations seeking affordable solutions to meet their growing energy demands. The

reliable and consistent power output of coal-fired plants addresses the need for stable energy access, supporting industrialisation and economic development in these economies.

- **Sustainability and Technological Innovation**

- The future of coal is inextricably linked to technological innovation. To achieve a low-carbon future, equitable funding, as outlined in Article 10.2 of the Paris Agreement, is essential for deploying these critical technologies. FutureCoal's Sustainable Coal Stewardship roadmap highlights proven solutions capable of reducing coal emissions by up to 99%. These include carbon capture, utilisation, and storage (CCUS), high-efficiency low-emissions (HELE) technologies, coal gasification, and coal co-firing with biomass or ammonia. These innovations can significantly cut CO₂ emissions without compromising the security, flexibility, or affordability of electricity supply.
- The path to net-zero emissions is narrow, and maintaining it requires the widespread deployment of all available clean energy technologies. Hybrid power systems combining coal and renewables, advancements in coal gasification, and increased investments in CCUS technologies will be pivotal in shaping the future of the industry.

- **Job Creation and Community Development**

- The coal industry isn't just about energy—it's about people. For coal producing countries, coal mining supports millions of jobs, drives local economies, and helps alleviate poverty. Thungela remains committed to building a sustainable, long-life business that delivers shared value not just to shareholders, but also to our employees and the communities we serve that rely on coal for their livelihoods.

- **Balanced Perspectives on the Energy Transition**

- The global energy transition must balance energy security, job creation, and environmental goals through an energy addition approach—not replacement. Just as wind and solar took decades to become viable contributors, coal must also be given the chance to evolve and adapt to our future energy landscape. By embracing innovation and enhanced technologies, [sustainable] coal can continue to meet growing energy demands while reducing its environmental footprint.
- This approach ensures that all energy sources play a role in a secure and sustainable future. The energy transition is a human story, and we must ensure that it happens in a way that does not sacrifice anyone over another. We must strive for an equitable, just and fair energy transition that lays the foundation for future generations. As we pursue a future where all energy sources coexist, coal will continue to play a critical role in driving economic growth, particularly in regions where alternatives are not yet economically viable.

At Thungela, we believe coal drives innovation and new business opportunities. By embracing FutureCoal's sustainable coal stewardship map, coal-rich nations can seize opportunities for job creation, industrial development, and sustainable practices - ensuring coal remains a profitable and dynamic natural resource.

The future requires all energy sources working together to create a more resilient, sustainable, and equitable world. ■

Kangra looks forward to future growth opportunities

Coal remains a vital component of the global energy mix, accounting for 37% of the world's electricity production, with the International Energy Agency forecasting continued robust demand from some regions. This is good news for local coal miners, such as Kangra, a subsidiary of Menar.

Mining Kangra

Kangra started mining the 41.9 million tonne Kusipongo resource through the development of Udumo and Uthingo adits. Mining at Udumo started in 2022 and Uthingo began production in 2023.

"Through developing this resource, we have extended the life-of-mine (LOM) by over 20 years, allowing Kangra to continue making a positive contribution to the economy and the mine's host communities," says Kangra's General Manager, Paul Redelinghuys.

Additionally, Kangra has installed a Joy online monitoring system for continuous miners to track productivity and safety-critical aspects, like methane gas, in real time while also increasing efficiency. The system has been installed at operations at the Uthingo adit, and in 2025, the plan is to roll it out to the rest of the sections.

Discussing production from Udumo and Uthingo adits, he explains that the adits have an estimated production target of 42 000 tonnes ROM each. "Udumo has an overall LOM of more than 20 years, while Uthingo has an anticipated LOM of over 10 years."



Members of the Kangra team conduct routine maintenance checks on a continuous miner underground.



Paul Redelinghuys, General Manager at Kangra

The mine's processing plant produces a range of product sizes, making it suitable for local and international markets. Although Kangra's processing plant primarily yields Rb3 grade coal, depending on market requirements, it is able to adjust to deliver Rb1 grade coal.

"Our product is moved through the local siding in Piet Retief and transported to Richards Bay, where we have access to the Richards Bay Coal Terminal and Multi-Purpose Terminal. The main export destination for Kangra product is Asia."

Discussing some of the challenges associated with mining at depth, Redelinghuys explains that Kangra is a shallow resource mined mostly at a depth of between 40 and 250 metres. Given that pressure from the overlying rock increases with depth and poses a potential safety challenge, Kangra has been proactive in ensuring that the size of the underground pillars is increased to withstand additional weight, thereby dramatically reducing the potential of roof and pillar deterioration. "These adjustments, made by rock engineering specialists, ensure that the infrastructure is solid and workers are safe from harm."

Future growth opportunities

Following the development of Uthingo and Udumo adits, Kangra is advancing its T4 project, an underground resource that can be effectively mined on the board and pillar method, using continuous miners and shuttle cars. The project, which will be an expansion of the existing mining right, has a total underground ROM reserve of 15.69 million tonnes. The current estimated life of mine for T4 is more than 15 years.

"The intention is to finalise the mining rights and required licenses before we can proceed with developing the T4 project, which has a LOM of more than 15 years. Uthingo will serve as an access point to the T4 resource." ■



An aerial shot of Uthingo, one of two adits developed by Kangra to access the Kusipongo reserve.

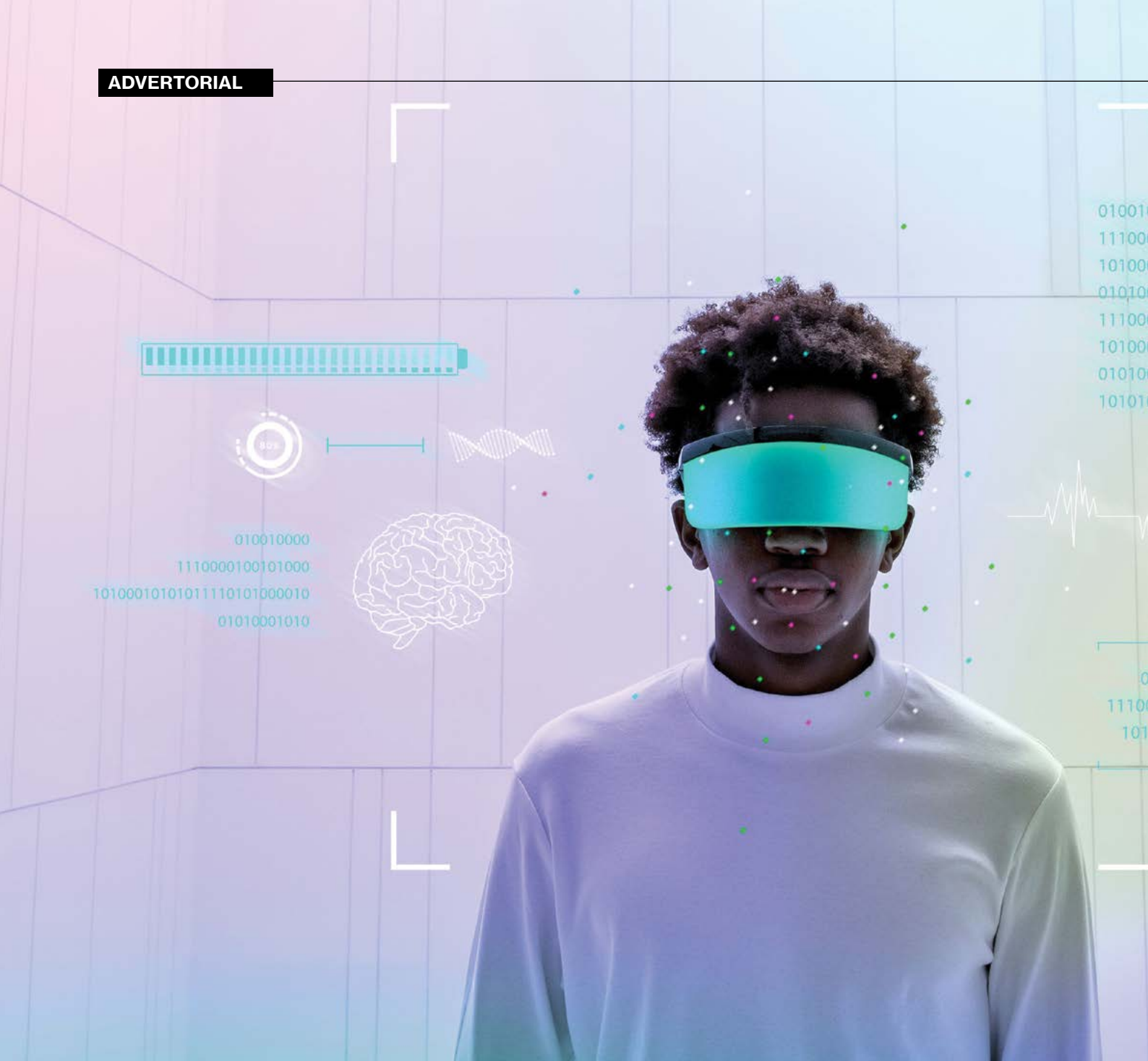
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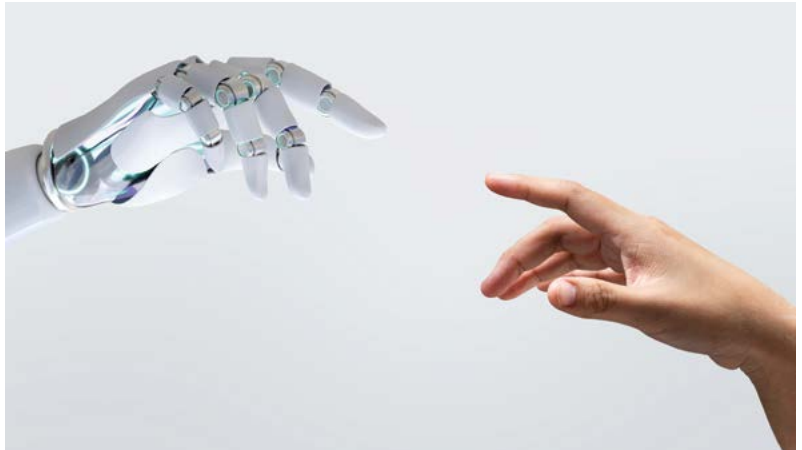
The Mining Qualifications Authority committed to training for impactful skills for mining growth

The Mining Qualifications Authority (MQA) is a Sector Education and Training Authority (SETA) that facilitates skills development training in terms of the Skills Development Act 97 of 1998, under the Department of Higher Education and Training.

The MQA also supports mine health and safety for the mining and minerals sector in terms of the Mine Health and Safety Act 29 of 1996, under the Department of Mineral Resources and Energy.

The following six strategic priorities adopted by the MQA Board continue to underpin the MQA's role in promoting skills development in the sector:

- Promote efficient and effective governance and administration.
- Improve skills development planning and decision-making through research.
- Promote work-based skills development to support transformation in the mining and minerals sector.
- Facilitate access to occupationally directed learning programmes for the unemployed.
- Support mine community training



initiatives to access economic opportunities.

- Ensure the delivery of quality learning programmes in the mining and minerals sector.

With two consecutive clean audit reports received from the Auditor-General South Africa, for the financial years 2022-2023 and 2023-2024, the MQA continues to train impactful skills for mining growth, by administering several skills development initiatives including learnerships, skills programmes, internship and work experience programmes, bursaries, and other training initiatives to uplift new entrants to the sector, and mining community beneficiaries.

This is part of the MQA's drive to ensure the mining and minerals sector has sufficient competent people who will improve health and safety, employment equity and increase productivity.

For more information, please contact the Mining Qualifications Authority.

Tel: 011 547 2600

Website: www.mqa.org.za

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Unlocking economic value for Africa

Modern Mining's Top Projects for 2025 are well positioned in the power play segment of business, covering gold, a safe-haven asset, that has clocked more than 30 all-time highs in terms of price in 2024; copper, a highly efficient conduit used in renewable energy systems to generate power from solar, hydro, thermal and wind energy and uranium, the fuel most widely used by nuclear plants.



This year's projects include Pan African Resources Mogale tailings re-treatment (MTR) asset located in South Africa; Barrick's Lumwana Super Pit expansion project in Zambia; and Australia-based Lotus Resources Lethakane uranium mine, in Botswana.

The projects are at various stages of development, with Pan African Resources MTR project already producing gold, having achieved steady state production in January 2025. Barrick and Lotus Resources are in early stages of project development, with Barrick having recently initiated detailed engineering works and pre-construction ground preparation works at its Lumwana Super Pit expansion project. The Lethakane project is in the process of beneficiation test work at the mine, conducting geometallurgical modelling and undertaking a processing options study.

Gold miner, Pan African Resources' MTR assets give the miner a significant production boost, catapulting it from a ca.190 000 oz producer to a 250 000 oz per year producer. The dual listed entity achieved first gold from its recently constructed R2,5 billion MTR operation in the first week of October 2024 - four months ahead of schedule. With

the gold price setting new records, having climbed above the \$2750 oz mark at the end of October 2024, PAR is anticipating a significantly reduced payback period on its Mintails loan of between two- and three-years.

The Lumwana Super Pit Expansion, a previously struggling mine, has been transformed by Barrick. The project is targeting a 70% increase in production, a doubled lifespan, and the creation of thousands of local jobs. Barrick injected a whopping \$2 billion to turn the asset around. Upon the project's completion, the mine's production will rise to an impressive 240 000 tonnes of copper annually. The expansion unlocks the potential to transform the Lumwana mine into a high-yielding Tier One copper mine.

Lastly, Lotus Resources' Lethakane uranium mine, one of the largest undeveloped uranium projects in the world, is expected to make a positive contribution to a carbon-free future, while also building strong local communities and fostering a safe and healthy work environment. Situated in Botswana, the Lethakane uranium mine has a resource base of some 155 mt at 345 ppm. With the global market for uranium focused on power supply, the Lethakane project is scheduled as the backbone for a clean energy future. ■

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North sand dump.

MTR boosts PAR's production to 250 000 ozpa

By Nelendhre Moodley

Gold miner, Pan African Resources (PAR) has achieved first gold from its recently constructed R2,5 billion Mogale tailings re-treatment (MTR) operation. The acquisition of the historic tailings storage facilities was finalised in 2023, after which construction of the MTR plant commenced in July 2023. MTR catapults the miner from a ca.190 000 oz producer to a 250 000 oz per year producer, Hethen Hira, Head of Investor Relations & Communication at PAR, tells *Modern Mining*.

The miner achieved first gold in the first week of October 2024 - four months ahead of schedule.

“Achieving first gold in 14 months – instead of the scheduled 18 months – is a major triumph for PAR.

We used our extensive experience to deliver the project efficiently and under budget, saving roughly R300 m by being ahead of schedule. The safety statistics were also exemplary – during the construction phase MTR employed over 1 600 workers on site and achieved completion of construction with zero lost-time injuries for the 1.5 million man hours worked.”

According to Hira, PAR has a strong track record of successfully retreating surface deposits, which includes its Barberton Tailings Retreatment Plant (BTRP) and Elikhulu tailings retreatment operations, with the lessons learnt helping to deliver the MTR project ahead of schedule.

MTR adds a further 50 000 ozpa to 60 000 to PAR's production base, firmly placing the JSE-listed entity in the mid-tier category.

“Further to this, we commissioned a new sub-vertical shaft at our Evander mine, located in Mpumalanga, to improve efficiencies, which lifts production by a further 15 to 20 000

ozpa to ensure that production sits comfortably between 250 000 ozpa and 260 000. Following delays as a result of ground conditions at depth, the new sub-vertical shaft was commissioned in December 2024.”

PAR achieved steady state production from MTR in early January 2025 - an asset purchased for just over \$1 an ounce and originally containing over a million ounces in Mineral Reserve.

The Mintails assets acquired for R50 million comprised historic TSFs, or mine dumps, that were the residue of underground gold mines mined in the West Rand since the early 1900s. The assets were previously owned by Mintails Mining SA, which has been in provisional liquidation since 2018.

According to Hira, there are some two million ounces of low-grade gold in the TSFs, contained in around 240 Mt of material, grading at an average of 0,3 g/t of gold.

The company's tailings operations are hugely profitable at current gold prices, given the anticipated low all-in sustaining cost (AISC) of around \$1 000/oz. In addition, PAR anticipates a life of a mine at around 20 years, with annual production averaging around 50 000 ozpa. The project has a processing plant with a design capacity of 800 000 tons per month.



Processing plant CIL tanks.

“As gold miners, we continually seek to increase our annual production and resource base, which is why the assets acquired from Mintails, one of the last large remaining surface sources for gold in the country, are so important to our future growth aspirations, as they add low-cost ounces to our production for the next two decades. Moreover, coming in at AISC of \$1 000/oz reduces the average group production cost, which means that the asset portfolio becomes highly profitable, making our investment case all the more attractive.”

Importantly, with the gold price setting new records, having climbed above the \$2750 oz mark at the end of October 2024, gold miners are reaping the rewards of the spectacular gold run, PAR anticipates a significantly reduced payback period on its Mintails loan of between two- and three-years at these high prices.

Job creation

At a whopping R2,5bn, the Mintails project is currently one of the largest new mining investments in the country and has done much to invigorate the project area in the West Rand of Gauteng.

Given the high unemployment rate in the area, PAR boosted the local economy through employment during the construction phase of the project and now through the

concurrent rehabilitation and reprocessing phase.

Following PAR’s decision to fast-track project construction, initially targeting the employment of 700 people during the construction phase, of which 500 would be local, as the requisite skills set is not always readily available in the area of operation, the miner subsequently more than doubled employment opportunities. Skills sets were sourced within a 20-25km radius, including from the Krugersdorp, Mogale City and Soweto areas.

“We subsequently employed some 1600 people for the construction phase, which is how we were able to ramp up the construction time-frame. Of the 1600 people employed, over 1 000 were locals. This translated to a huge cash injection for the area – not only in terms of direct employment but also employment in the form of local suppliers, such as tank construction specialists, catering and electrical equipment suppliers, etc. The knock-on effect of the added activities has been a tremendous shot in the arm for the local economy. We also engaged in training and skills development initiatives with the objective that the workers would, once the contract ended, aim to start their own businesses or find employment in related industries.”

MTR – PAR’s future growth asset

With its 20-year LOM and surface mining opportunity– namely, the Soweto cluster – MTR offers PAR strong future growth prospects.

“Our current plant has a capacity of 800 000 tons per month and in line with our future growth aspirations, we are currently mulling



We employed some 1600 people for the construction phase, which is how we were able to ramp up the construction time-frame. Of the 1600 people employed, over 1 000 were locals.



Mintails plant site as at November 2023.

options to lift plant capacity to 1 mtpm or establish a new plant in the Soweto cluster area, which would reduce our pumping cost. As we are keen to increase our production rate sooner rather than later, we are busy undertaking a feasibility study to determine the best of the two options.”

PAR anticipates completing its DFS sometime during 2025.

Discussing the challenges associated with retreating tailings dumps, Hira explains that while tailings dumps offer huge upside, particularly on the back of a surging gold price, inexperienced companies, however, often fail to achieve profitability as they underestimate the initial high capital injection required and the extremely low-grades of the assets. For instance, the MTR asset has a grade of 0,3 g/t, with actual recoveries in the region of 0,15 g/t.

“Tailings dump retreatment is a volumes game, as is the case with MTR, where we treat around 800 000 tons per month just to achieve production of 50 to 60 000 ozpa.”

PAR’s portfolio currently sits at 45% surface mining, with the remainder being underground operations at Evander 8 Shaft and Barberton Mines.

Although tailings retreatment offers several benefits, including cheap access to gold through hydraulic mining, the availability of large-scale tailings dumps is limited, with the larger assets already in the hands of local gold producers Harmony Gold and DRD Gold.

“There are not many significant scale tailings

dumps left – in fact, PAR secured one of the last large-scale tailings assets,” he says.

ESG

As it processes the Mogale TSFs, PAR is concurrently rehabilitating the asset and has since achieved significant success, having rehabilitated a large portion of the wetlands area adjacent to the surface dumps.

Initially targeting rehabilitation on 40 hectares in the first year, PAR has surpassed the target, expanding its focus more recently to rehabilitating 80 hectares.

“Using labour from the local community, we have cleared a major portion of the alien vegetation and, in the process, trained locals in eradicating alien vegetation, which continues to be the impetus for job creation. In the short time that we have removed the alien vegetation, we are already noting the return of indigenous species – both in fauna and flora, while water quality is also improving.”

Aside from repurposing waste material from the plant for use as infill material on existing pits, new tailing storage facilities will be developed with a significantly reduced footprint – all of which talks to PARs focus on lowering its environmental impact.

“The key advantage associated with filling underground voids is the dramatic reduction in opportunities for illegal underground and pillar mining activities. Moreover, our ESG related initiatives are already realising improvements in air and water quality, and we have received



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Wetland rehabilitation as at February 2024.



Processing plant CIL tanks.

positive feedback from the communities in the area, with whom we engage on a regular basis,” explains Hira.

The reprocessing of the massive mounds of tailings dumps is having a positive impact on the landscape and by ensuring that the associated dust – a nuisance that has for a long time negatively impacted those living in close proximity – is being addressed.

“The value of retreating gold dumps is immense not only for the added revenue and profitability to shareholders, but also to the benefit of other stakeholders in the area, in terms of employment, improving the environment (air and water quality), infrastructure developments and in making additional land available for other economic uses, such as housing developments and agriculture projects, amongst others.”

Going clean and green remains a key focus for PAR - one of the first mining companies to make the jump to solar power, commissioning a 10-megawatt solar power plant at its Evander

operations in 2022. In July 2024, the company also commissioned an 8.75MW solar renewable energy plant at its Barberton operations. Combined, these plants result in cost savings of some R10 million a month, at current Eskom tariffs, while also reducing greenhouse gas emissions by over 20 000 t of CO₂ e/year.

The company’s strong focus in adopting renewable energy options sees the gold miner busy with a feasibility study for the development of a 20 to 25-megawatt solar power plant for its MTR operation.

“This plant is expected to supply roughly 50% of the operation’s required power needs, which will reduce pressure on the grid. Implementing renewable energy options is a huge strategic focus, which allows us to achieve further cost savings, reduce emissions and have a lower impact on the environment. The intention is to obtain 50% of our power requirements from renewable energy sources by 2030, which will also improve our overall cost of production in future,” concludes Hira. ■



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Letlhakane uranium mine key to a carbon-free future

The Letlhakane uranium mine, one of the largest undeveloped uranium projects in the world is expected to make a positive contribution to a carbon-free future, while also building strong local communities and fostering a safe and healthy work environment.



Diamond drill rig extracting samples.

Situated in Botswana, the Letlhakane uranium mine is thought to be one of the largest undeveloped uranium projects in the world, with owners Lotus Resources predicting that it has a resource base of some 155 mt at 345 ppm.

Australia-based Lotus originally purchased the mine some years ago, with the ultimate plan being to restart the former mine in the near future. According to the business, it will be quite simple to get the operation going again, thanks to several recognised advantages. These include the fact that the project is situated close to high quality infrastructure - a sealed road, rail line and a nearby power line. In addition, a major population centre, Francistown, is located relatively close by - it is within 50km of the mine.

Lotus Resources – a leading ASX listed uranium developer – is well placed to become a major

player in the uranium market, owning 100% of the Letlhakane Uranium Project, along with having an 85% stake in Malawi's Kayelekera Uranium Project.

Keith Bowes, MD at Lotus Resources, points out that the organisation is positioning itself as a responsible uranium producer. This is something he claims will be achieved by focusing on ensuring not only a safe and healthy work environment, but by also building strong local communities and, ultimately, by playing a positive role in contributing to a carbon-free future.

Planning and redevelopment

He advises that Lotus is currently progressing with beneficiation test work at the mine, along with conducting geometallurgical modelling and undertaking a processing options study.

"I believe that we already have the necessary requirements in place to begin operations.





Geotechnical team logging soil samples.

This includes having a mining licence, water rights, and provisional surface rights in place,” he says.

Noting that the project is well positioned in terms of transportation options, he explains that the core deposit is located next to the main highway from Gaborone and Francistown. This, in conjunction with the rail line and rail siding that already exist within the mining lease boundary, means that Lotus has multiple options as far as transport is concerned. Power should also be less of a challenge, as there is an electrical substation within the mine’s bounds.

“The previous owners had identified a ground water source, which means we have already been able to tick the boxes around many of the traditional infrastructure problems a project like this faces. The real benefit to us was that this meant we did not need to expend capital on these issues during the budget planning,” he says.

“One of the plans we have for this mine involves finding ways to increase the head grade of the feed material to the mill. We aim to achieve this via a combination of updated mineral resource



Drilling underway at Lethakane.

modelling and beneficiation test work on the run-of-mine material. Another plan is to develop an alternate process flow sheet, which will increase the uranium recovery rate and reduce acid consumption. This will be significant, as acid consumption is a significant contributor to plant operating costs.”

Bowes indicates that according to the latest mineral resource estimate, Lethakane contains at least 118 million pounds of uranium, based on a 200 ppm cut-off grade. This offers a strong production profile, he continues, when the mine is compared to similar projects elsewhere. In fact, it is anticipated that Lethakane’s resources should, over the expected 20-year-life of a mine, produce around three to four million pounds of uranium per year.

“The global market for uranium is very much focused on power supply. In fact, commercial uranium mines only supply to nuclear utilities that produce electricity, providing fuel for their nuclear reactors.”

“Therefore, Lotus expects to supply North America, the European Union, South Korea and Japan with uranium, in the



Lotus Resources crew weighing soil samples.



Down hole gamma logging underway.

main. It is an increasingly popular commodity today, as the power generated through such facilities has no attendant greenhouse gas emissions. It is therefore a green technology that is far more stable than solar or wind, as nuclear facilities are able to operate 24/7/365," he states.

Cost-effective mining

He is quick to add that Lotus has placed a premium on being able to keep operating costs at a minimum. This explains the company's intense scrutiny of mining and processing methodologies, as well as its desire to leverage various modelling solutions to effectively determine costs.

"The reality is that modelling allows us to more accurately determine the value of the minerals in the ground, as well as the cost to the mine to process the material. We utilise geometallurgical modelling to clearly understand and predict operational expenses - something that helps Lotus to delineate the optimal methods for reducing costs, while ensuring that it is still able to maintain a good flow of product at an increased profit margin," he states.

"The cut-off grade of the material is critical when undertaking mineral resource modelling. To this end, the organisation is focused on identifying the most economic blocks to mine, as

these will be cheaper to mine and process."

Beneficiation is an important process too, he continues, suggesting that this is needed in order to separate the geologic material from the uranium. He notes that this is a complex process, as it is crucial to ensure that material isn't thrown away in the waste stream that might still contain other economically viable minerals.

"As already mentioned, a major contributor to operating costs in a mine like this is the process of acid consumption. In order to leach the uranium from the solid material, acid is a vital ingredient. Clearly, if we are able to reduce the amount of acid used, the operation will be that much more profitable.

"Therefore, by focusing on specific areas of improvement – including how small the material can be crushed, the type of acid used, and how strong it is when added – we aim to recover the highest amount of uranium through the utilisation of the least amount of acid possible."

People and communities

Bowes notes that from a local workforce perspective – even during the current on-site activities, like resource and exploration drilling, monitoring and sampling – the company uses as many locals as it can, indicating that somewhere between 20 and 30 people are already employed from the surrounding villages.

"Once the mine is operational, we expect to employ a work force of around 700-800 people in total, and expect the mining contractor to employ several hundred more. Overall, our workforce should be over 1 000 workers, and we will certainly source as many as we can locally, both from the surrounding villages, and from the larger towns like Francistown and Gabarone."

Speaking of the projected operational start date, he points out that Lotus is still in the planning stages, identifying the best and most effective ways to mine and process the material. With plenty of technical work still to be done, he expects it will be a further two to three years before construction of the requisite facilities will begin.

"Ultimately though, the timeline remains completely in our hands, thanks to the fact that we already have the required licenses in hand. We are waiting for the technical work to be completed, which will ensure that we know what we want to build and how, not to mention exactly how it will all be financed. Once we reach this point, I estimate that it should take a further 18-24 months before operations begin. This means that our ultimate start date should be anticipated somewhere between 2028/29."

"It is important to note that uranium is a key commodity globally, with nuclear power facilities contributing to the green electricity supply. These entities not only provide security of supply, but also play a key role in reducing greenhouse gas emissions. We are pleased that Letlhakane can offer a significant amount of uranium to the market, which will in turn positively impact on the climate crisis. Just as crucially, it will have a huge and positive financial impact on the surrounding communities. In the end, this project has proven to be a commercially attractive proposition for both ourselves and the government, and should have a massive long-term impact on Botswana's economy," concludes Bowes. ■



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Lumwana Super Pit expansion **to boost** **Zambia's economy**

The Lumwana copper mine, once facing economic challenges, is on the brink of a remarkable turnaround thanks to a substantial investment of approximately \$2 billion from Barrick Corporation. This significant funding is part of an ambitious expansion initiative aimed at dramatically increasing Lumwana's annual copper production, which is crucial for Zambia's overall economic growth.

Upon the project's completion, the mine's production will rise to an impressive 240 000 tonnes of copper annually. This increase will stem from a processing plant designed to handle 50 million tonnes per annum, extending the mine's operational lifespan to 36 years. This transformation is not just about numbers; it represents a strategic shift that could elevate Lumwana from a previously unprofitable venture to one of the leading copper producers in the region. The successful execution of this expansion project highlights the potential for economic development and the vitality of Zambia's mining sector.

Barrick's chief executive, Mark Bristow, emphasises the importance of completing an accelerated work programme to finalise a comprehensive feasibility study by the end of 2024.

"This study is essential as it will set the stage for construction in 2025, allowing the enhanced processing plant to be operational by 2028," he says.

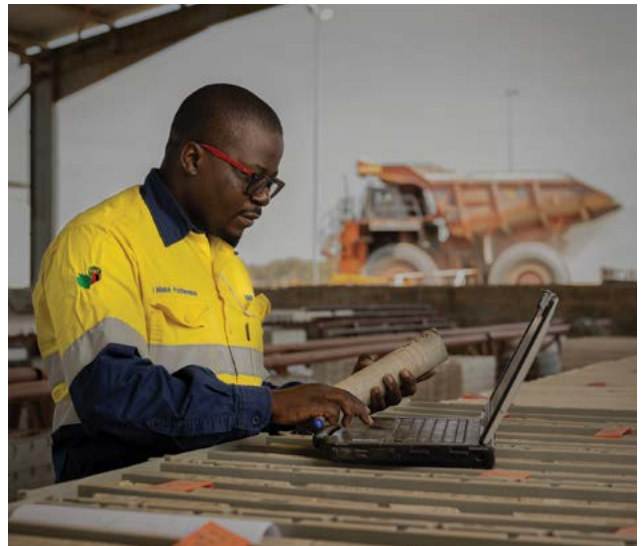
"Lumwana has been thoroughly restructured and re-engineered with a clear objective: to become a key player within Barrick's expanding copper portfolio. As an organic growth initiative, the project records show the probability of elevating the mine's production by 70% while doubling its lifespan. This sustainable approach maximises resource extraction and ensures ongoing investment in Zambia's economy," continues Bristow.

Since Barrick took over the operations at Lumwana in 2019, the mine has had a substantial positive impact on the local and national economy, contributing nearly \$3 billion

Lumwana has been thoroughly restructured and re-engineered.



A critical element of the Super Pit Expansion is its focus on creating a sustainable legacy.



The expansion unlocks the potential to transform the Lumwana mine into a long-life, high-yielding Top 25 copper producer.

through various channels, including taxes, royalties, salaries, and the procurement of local goods and services.

Barrick's commitment to a local procurement policy further underscores its dedication to fostering community development. An impressive 99.3% of Lumwana's workforce are local, illustrating the company's commitment to creating job opportunities and supporting the local labour market.

"In summary, the Lumwana Super Pit Expansion represents a significant investment in mining. It embodies a strategic initiative to revitalise Zambia's economy, create jobs, and establish a sustainable future for the region's copper production industry," he notes.

A new economic frontier

The development of the Super Pit at Lumwana was officially launched on October 2 by Zambian President Hakainde Hichilema.

"Mining plays a key role in Zambia's economic structure and our partnership with Barrick is creating one team, with a shared vision, to develop a new economic frontier in the North-Western Province of the

country and beyond," he noted at the launch.

Bristow suggests that the expansion unlocks the potential to transform the Lumwana mine into a long-life, high-yielding Top 25 copper producer. The expansion should turn Lumwana into a Tier One copper mine, a significant achievement enabling it to compete effectively with the volatility of the copper demand cycles.

"The expansion involves firstly doubling throughput, by twinning the existing process circuit, and then by significantly increasing mining volumes. Plant throughput should grow from the current 27 mt to 52 mt, thereby doubling the mine's annual copper production, from 120 000 t to a life-of-mine average of 240 000 t per annum."

"The process expansion will be supported by a ramp

Lumwana has been thoroughly re-engineered to become a key player within Barrick's expanding copper portfolio

up of total mining volumes, which are planned to increase incrementally year-on-year, from 150 mt this year, to close to 240 mt by 2028 - and then to an average rate of 290 mt per annum from 2030 onwards.”

He estimates that at a flat, long-term average copper price consensus of \$4.13 /lb, the project can deliver an incremental Internal Rate of Return (IRR) of 20% and a total mine IRR of more than 50%. This means it will pay back the initial expansion capital approximately two years after completion of the expansion.

Post-expansion, sales and C1 cash costs are estimated at approximately \$2.36 /lb and \$1.85 /lb, respectively. This places Lumwana in the first quartile of the industry, excluding the benefit of any byproducts.

“Furthermore, the process plant engineering has matured to a point that has allowed us to select major equipment vendors and place orders for long lead equipment, including both mills and crushers,” says Bristow.

“We are starting detailed engineering works this quarter and expanding our onsite accommodation, while building partnerships with key suppliers and contractors ahead of the pre-construction ground preparation works, which are scheduled to start this year.”

He adds that the commissioning of the new process plant is planned to start in the second half of 2027. Once the new process circuit is commissioned, the existing circuit will undergo a series of scheduled shutdowns, allowing the company to install upgrades while ensuring uninterrupted copper delivery throughout the expansion.

The permitting process for the expansion is well underway. The environmental and social impact assessment has already been submitted to the Zambian authorities, with approval expected by the end of this year.

Accelerating local businesses

As part of the project, Barrick has implemented its Business Accelerator Programme (BAP), an approach that aims to build business capacity for the various Zambian contractors in Lumwana’s supply chain and support them in implementing their growth plans.

The company has further chosen to partner with the country’s Ministry of Small and Medium Enterprises to support the development of these businesses.

Known as the 10X BAP, it will be implemented by the Women’s Entrepreneurship Access Centre (WEAC) and aims to build business capacity for local contractors in Barrick’s mining supply chain. It will further support them in implementing their growth plans and diversifying their markets, enabling them to become sustainable beyond the mine’s operations.

Barrick’s 10X BAP further aims to enable these SMEs to better position themselves for sustainable growth, including the capacity to bid for and service larger supply tenders.

“As a private sector local supplier initiative, BAP has the potential to stimulate regional economic growth, given the significance of the mining sector in the economy and its impact on other subsectors. Barrick points out that an investment of this nature effectively extends the local community’s benefit from Lumwana’s operations,” adds Bristow.



The Lumwana copper mine, once facing economic challenges, is on the brink of a remarkable turnaround.

Suppliers and surrounding communities

He points out that a critical element of the Super Pit Expansion is its focus on creating a sustainable legacy, a goal which will be achieved by developing local capacity within the region, benefiting surrounding communities and businesses throughout the construction and operational phases. The expansion will need around 550 additional workers over the next five years to support the ramp-up and 2 500 construction workers for three years, until 2028.

“We are also planning to build critical infrastructure, including an airstrip and an industrial supplier park. This will enable key suppliers to establish themselves in the area, creating an economic hub that will further fuel growth and development in the wider region,” adds Bristow.

“Barrick believes that its host countries are its key stakeholders, and that partnering with them creates sustainable value for both parties. In Zambia, as elsewhere in our global network, we seek to share the economic benefits generated by our mines with the country’s government and people, notably our neighbouring communities.”

The Lumwana Super Pit Expansion is critical to the Zambian government’s drive to revive the country’s copper industry over the next decade. Meanwhile, Barrick’s approach to sustainable value means the project will also significantly impact Zambia’s unemployment statistics.

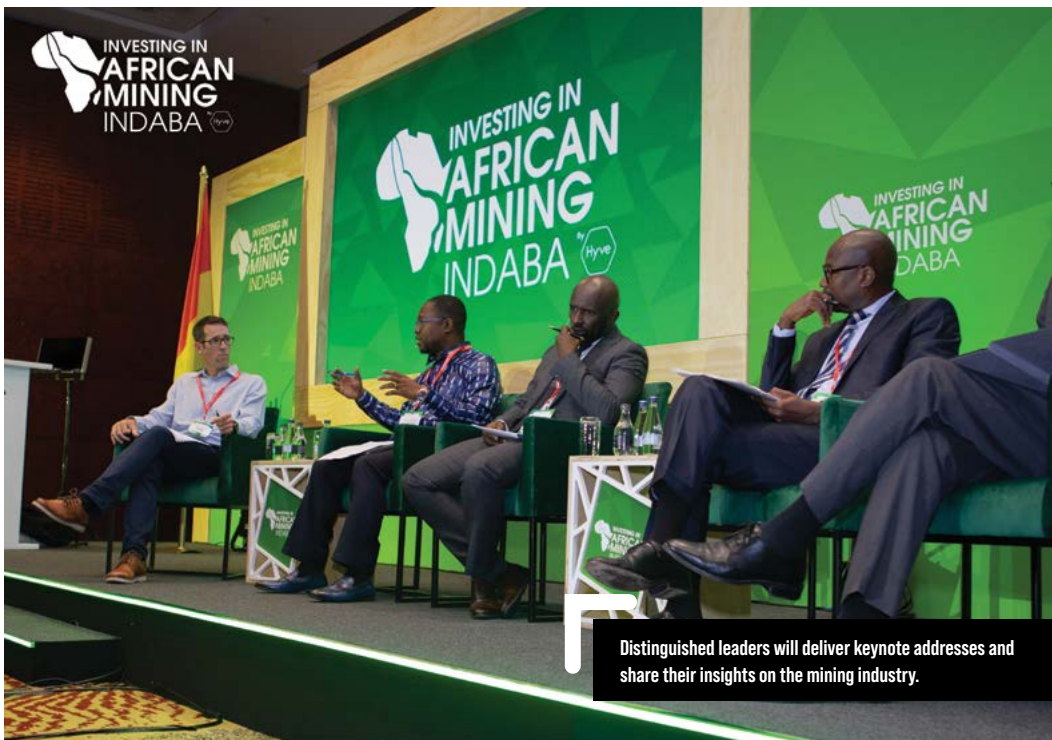
The company takes this approach seriously, as evidenced by the fact that local procurement—\$472 million in 2023—made up more than 81% of Lumwana’s total spending.

“In addition, Barrick has launched a Business Accelerator Programme (BAP) that is designed to build the business capacity of the Zambian contractors in its supply chain. BAP will equip them to grow and diversify their enterprises, while helping them to remain sustainable beyond Lumwana’s overall life of mine.”

“Lastly, and in line with Barrick’s partnership philosophy, the company’s REDD+ initiative will uplift host communities through the conservation of the natural forest surrounding the mine. In this regard, resources have already been allocated, while engagement with the surrounding communities is underway,” concludes Bristow. ■

Mining Indaba 2025: A glimpse into the future of the industry

The theme for Mining Indaba 2025, “Future-Proofing African Mining, Today”, could not be more timely as the global landscape continues to evolve. As the mining sector faces new challenges and opportunities, Mining Indaba 2025 will continue to serve as a leading platform for addressing the sector’s most pressing issues and fostering growth. With a rich history of supporting Africa’s mining industry, this year’s event is set to be the largest and most impactful edition yet, offering a variety of innovative sessions, exciting showcases, and new opportunities for collaboration, Laura Nicholson, head of Content & Strategic Partnerships for Mining Indaba, tells *Modern Mining*.



For 2025, Mining Indaba is taking its government engagement to the next level.

Mining Indaba 2025 is embracing a forward-thinking approach by actively exploring new audience sectors that will enhance the event and contribute to the full value chain of mining. This strategy highlights a strong commitment to evolving the event offering, ensuring Mining Indaba continues to serve as a pivotal platform for the development and advancement of the African mining industry.

By expanding into new sectors, Mining Indaba aims to bring fresh perspectives, drive innovation, and foster collaboration across all aspects of the mining process, from exploration through to production and beyond. These new audience sectors will not only broaden the scope of the event but will also deepen the quality of discussions, enriching the conversations and knowledge-sharing at the core of the event’s success.

Heightened anticipation

“As the mining industry gears for Mining Indaba 2025, the mood among delegates, exhibitors, and the international community is one of heightened anticipation and optimism. There’s a palpable sense of excitement surrounding the

event, fuelled by the growing recognition of Africa’s role in the global mining landscape and the industry’s increasing commitment to sustainability, innovation, and inclusivity. From the delegates and exhibitors to the international community, the sentiment reflects a collective desire to address the most persistent challenges facing the sector while also seizing the opportunities that come with them,” explains Nicholson.

One of the key factors driving this positive sentiment is the overwhelming emphasis on innovation and cutting-edge technology. Mining Indaba 2025 promises to be a showcase of transformative technologies that are changing the way mining operations are conducted, from automation and AI to green energy solutions and sustainability-driven innovations.

“With the world focusing on sustainable practices, the significance of collaboration and innovation in the mining industry has never been more critical. Mining Indaba 2025 stands at the forefront of this movement, providing a vital platform for industry leaders to come together and drive progress,” adds Nicholson.

As public and private sectors intensify their focus on responsible resource extraction, Mining Indaba 2025 is



The event is a meeting place for miners and investors.

positioning itself as a platform for actionable solutions around sustainable mining practices, ethical sourcing, and community impact.

“Delegates and exhibitors are particularly interested in how Africa can balance the immense potential of its mineral resources with the growing global emphasis on environmental responsibility. With a spotlight on how mining can align with broader sustainability goals—particularly in light of the increasing demand for battery metals and clean energy solutions—the conference will address the sector’s role in supporting a low-carbon future. The event is poised to catalyse conversations that will drive sustainable development, making it a vital venue for the sector to lay the groundwork for long-term progress.”

Appetite from exhibitors

According to Nicholson, the exhibition floor at Mining Indaba 2025 has grown larger than ever before, showcasing a dynamic blend of loyal repeat clients and new participants. “This impressive expansion reflects the growing importance and value that stakeholders place on positioning themselves at the event, year after year. The presence of returning exhibitors highlights the long-term relationships and trust that has been cultivated through consistent participation. At the same time, the inclusion of new clients eager to experience what Mining Indaba has to offer underscores the event’s continued appeal and relevance in the industry. This combination of both seasoned players and fresh faces ensures a dynamic, diverse, and vibrant exhibition environment. It fosters a rich exchange of ideas, products, and innovations, making the conference not just a showcase of mining advancements, but a vital platform for establishing new connections, exploring new partnerships, and shaping the future of African mining.”

What’s New at Mining Indaba 2025?

Building on the success of Mining Indaba 2024, this year’s event will feature an expanded conference programme that promises to offer even more valuable insights and actionable takeaways for attendees. Some of the key highlights include:

Disruptive discussions programme: “We are redefining the future of mining with our Disruptive Discussions—and we are starting with a look at Redefining Critical Minerals. The global demand for these critical minerals is increasing at an unprecedented rate, and we’ll be exploring how this reshapes everything from investment strategies to geopolitics.”

Government engagement: For 2025, Mining Indaba is taking its government engagement to the next level. The introduction of Investment Forums: *Strictly by invitation and the brand-new government space, —will provide a unique space where policymakers and industry leaders can come together to address the challenges and opportunities facing the mining sector. This initiative seeks to foster collaboration

between governments and the private sector to shape the future of African mining.

Cutting-edge technology & innovation: The role of technology in transforming mining practices is undeniable, and Mining Indaba 2025 will showcase the latest in mining automation, robotics, and other technological innovations. The Technology and Exhibition Space will provide a first-hand look at how these technologies are reshaping the industry and driving efficiency and sustainability.

Supporting mining communities & indigenous voices: “One of the most exciting additions for 2025 is on amplifying the voices of mining communities and indigenous people. Mining Indaba will provide a platform for these groups to share their perspectives and ensure that their needs and concerns are heard as the industry evolves. This inclusion is crucial for ensuring that mining is not only profitable but also socially responsible and sustainable,” says Nicholson.

Downstream buyers: As the world shifts toward electric vehicles and renewable energy, Africa’s role in supplying critical minerals for these industries is becoming more important than ever. The Downstream Buyers session will address the challenges that these industries face, such as supply chain transparency, geopolitical risks, and sustainability. This will be a critical space for discussing ethical sourcing practices and fostering collaboration between different sectors.

Investment village: The Investment Village at Mining Indaba 2025 will provide an unparalleled opportunity for investors and mining companies to connect and explore potential collaborations. With three distinct areas—the Investment Lounge, the Investment Theatre, and the Explorers Showcase—the village will serve as a dynamic hub for networking and deal-making, enabling attendees to gain deep insights into the African mining landscape.

Dealmakers den: The Dealmakers Den is where the next generation of mining giants will be discovered.



The event brings together stakeholders from across the mining industry to drive positive and long-term change in the sector.

This high-energy space will bring together junior mining companies and investors in a showcase of innovation, ambition, and potential. According to Nicholson, only the most compelling projects with strong financial and economic

prospects will attract the attention of Africa's leading decision-makers, making it a critical platform for those looking to make a mark in the industry.

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- International standard thread types
- Excellent abrasion resistance, fast drilling speed

Casing Systems:

- Various options available
- Hardened part surfaces for anti-wear properties
- Unmatched drilling speed and reliability



lies with the next generation of leaders, the conference is placing a significant emphasis on integrating youth into the event. The Young Leaders Programme will be expanded across the entire event, providing opportunities for young people to engage with industry leaders and the opportunity to explore careers in mining. Additionally, the LEAD Alumni Programme will continue to nurture future leaders in the mining sector, ensuring the industry remains dynamic and innovative for years to come.

121 Junior Mining event

The 121 Mining Investment Cape Town 2024 event was an undeniable success, cementing its place as a key event in the African mining and investment calendar. The event broke attendance records, bringing together over 500 investors and 111 mining projects, offering a dynamic platform for networking, deal-making, and business development. “The energy and enthusiasm generated at the event was palpable, reinforcing its status as a critical hub for forging connections and advancing mining ventures,” says Nicholson.

With such a successful 2024 edition, the 121 Mining Investment Cape Town 2025 is set to raise the bar even higher. Following strong demand from the sector, the 2025 event will feature a range of exciting new initiatives and enhancements designed to provide even greater value to attendees.

Social responsibility: Beyond the event

Nicholson explains that Mining Indaba 2025 is not just about

business and industry development—it’s about making a lasting social impact. As such, the Hyve Group continues to demonstrate its commitment to social and community benefits, ensuring that the event leaves a positive legacy.

“For example, the partnership with Township®, a Fair-Trade social enterprise supporting women’s economic development in South African townships, will continue into 2025. Through this collaboration, delegate bags are crafted using eco-friendly materials, with designs incorporating banners from previous events to promote sustainability.”

Moreover, Hyve Group’s ongoing partnership with Breadline Africa led to the rebuilding of the Masonwabe school in Gugulethu, using carbon-negative building materials to create a safe and dignified learning environment for local children. These efforts showcase the positive social impact that Mining Indaba strives to achieve, demonstrating how the mining sector can work in tandem with local communities to create sustainable, meaningful change.

“At Mining Indaba, we believe the greatest industry transformation happens through the content and dialogues that unfold under our roof. The dynamic exchange of ideas, the unveiling of cutting-edge technologies, and the creation of new partnerships will continue to shape the future of African mining. Mining Indaba 2025 is poised to be a vibrant hub where industry leaders, along with fresh and diverse voices, come together to drive the transformation of mining—not only in Africa but globally,” concludes Nicholson. ■



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In 2024, Redpath Mining South Africa (RMSA) celebrated its 30th anniversary, marking three decades of delivering world-class mining solutions. While RMSA focuses on operations within South Africa, Redpath's broader African footprint currently extends to countries such as Ghana, Zambia and Botswana and has historically extended to several other African countries. Redpath is currently exploring several opportunities across the continent, both in regions where it has worked previously and in new jurisdictions.

Safety is a core value for Redpath, guided by its motto: Safety – *First, Last and Always*. This commitment is evident in recent milestones such as 1 047 LTI-free days at Mogalakwena, 1 141 LTI-free days achieved by the Northam Boxfront project crew and 2 698 LTI-free days at RMSA's Alberton Raiseboring and Engineering Workshop. Numerous projects, including Obuasi Gold Mine, Tshepong Mine and Thubelisha West Mine, have remained accident-free since their inception.

A defining feature of Redpath's success has been its ability to execute flagship projects that combine technical expertise with innovative solutions, such as Anglo American Platinum's (AAP) Mogalakwena Underground Exploration Decline project (Phase B at present). Mogalakwena is a strategic capital project for AAP, supporting the future addition of underground mining at the mine. Redpath is collaborating with AAP to deliver this world-class project, leveraging global expertise and innovation. Two key objectives of the project are high-speed lateral development and skills transfer, achieved through Redpath's Australian secondees executing advanced methodologies and training local operators.

The Mogalakwena project follows a similar model to the project presently being executed at Venetia Mine for De Beers. Redpath, in collaboration with Venetia management, has significantly improved development rates using Redpath Australian expatriates to upskill local Venetia employees. These efforts have been realised over the last period where record development metres have been sustainably achieved.

Northam Zondereinde 3 Shaft is another significant project for Redpath. At Zondereinde, Redpath is equipping a raisebore shaft and executing ancillary construction works. The project is complex and has had its challenges, which Redpath and Northam have worked collaboratively to solve. This continues a long-standing relationship with Northam, and Redpath is



The Mogalakwena Exploration Declines Phase B project in Limpopo, one of Anglo Platinum's most significant capital projects, where Redpath is delivering extensive mining and construction services.



Redpath Thonket's record-breaking raiseboring work at the Obuasi Gold Mine in Ghana, featuring the Kwesi Mensah Ventilation Shaft – now the world's largest raisebore hole.

proud to be entrusted with this critical capital work as part of Northam's overall expansion.

Redpath's Raiseboring Division has also delivered notable achievements. At Obuasi Gold Mine in Ghana, the Redpath Thonket Joint Venture set a world record by completing the largest raisebore hole to date – the Kwesi Mensah Ventilation Shaft. Measuring 944m in depth and 6.5m in diameter, the project demonstrated exceptional technical execution while incorporating sustainability measures such as water recycling and energy-efficient technologies. The team is currently reaming an additional underground hole with a diameter of 6.1m and a depth of 300m.

In South Africa, projects like the Zibulo Colliery ventilation shafts and the Thubelisha West ventilation shaft (both in Mpumalanga) further highlight the division's ability to deliver high-quality results ahead of schedule. A key success this year has been RMSA securing a raiseboring contract at AAP's Der Brochen Project in Limpopo – a significant growth project for AAP. RMSA's machinery is in place and crew mobilisation is underway, with work scheduled to commence in 2025. ■

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BME AXXIS assembly plant in Losberg.



Ralf Hennecke, Managing Director BME.

BME champions sustainability, innovation at Mining Indaba

Omnia Holdings company BME, a silver sponsor at the 2025 Investing in African Mining Indaba, will be sharing its commitment to decarbonisation and advanced technologies – supporting the mining sector’s drive to reduce its environmental footprint while enhancing operational efficiency.

According to Ralf Hennecke, Managing Director of BME, the company is known for its emulsions, equipment and electronic initiation technology that enhance mines’ environmental sustainability efforts.

As an integral part of the Omnia Group, whose core purpose is ‘innovating to enhance life, together creating a greener future’ BME is pleased that Omnia CEO, Seelan Gobalsamy, will be participating in the 2025 Mining Indaba in Cape Town, in the panel discussion on ‘Sustainable Investment: Catalyst or Constraint for Mining Development?’

Further, Nishen Hariparsad, BME’s General Manager for Technology and Marketing, will participate as a panelist in the session on ‘The role of technology in building and undermining sustainability in African mining’.

“We feel that these are vital conversations for the sector, on topics that we are confident to share our own insights and learnings,” said Hennecke. “Our own sustainability journey has allowed us to impact positively on our

customers’ mining efficiencies and sustainability goals.”

Driving decarbonisation

BME’s approach to sustainability addresses some of mining’s most pressing challenges, particularly the need to reduce carbon emissions, with Hennecke emphasising the critical link between energy efficiency and carbon reduction.

“Reducing energy consumption is a direct path to lowering carbon footprints, particularly in countries like South Africa where coal-fired electricity dominates,” he said. “Our innovations, from emulsions to electronic initiation systems, empower mines to achieve significant energy savings while meeting stringent environmental standards.”

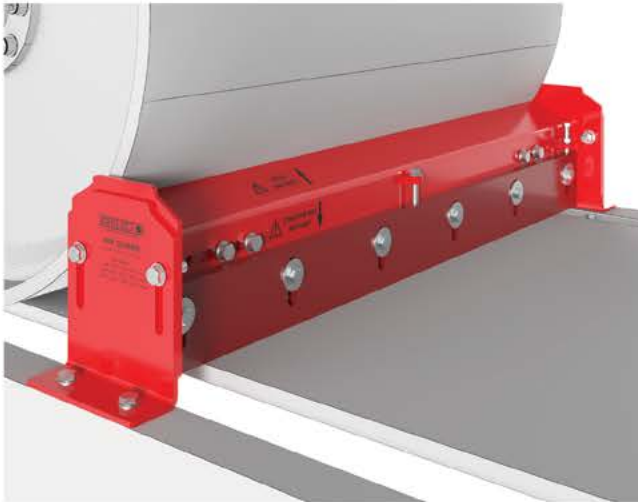
Technology for sustainability

BME’s technological advancements have been critical in delivering these efficiencies, according to Hariparsad. The company’s AXXIS® technology, for instance, has allowed mines to



Nishen Hariparsad, General Manager Technology and Marketing BME.

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Integrating BME’s Blastmap™III blast planning software further enhances mines’ abilities to optimise blasting outcomes. This has a ripple effect on energy efficiency, reducing fuel consumption and greenhouse gas emissions across the mining process.

“Our ESG-focused initiatives extend across the value chain,” Hariparsad added, “ensuring that we safeguard the environment and communities while enabling our mining customers to achieve their green goals.”

BME’s dual salt emulsions also contribute to this focus, offering a greener alternative to traditional explosives. By reducing nitrate leaching and greenhouse gas emissions, these emulsions reduce risk of environmental damage, and help mines to comply with local regulations and international standards.

“The manufacturing process for dual salt emulsions is also more energy-efficient, as it operates at lower temperatures – further reducing energy consumption and carbon emissions,” he explained.

Recycling used oil

Another aspect of BME’s sustainability portfolio is its pioneering use of recycled oil in its emulsions, effectively removing millions of litres of potentially hazardous waste from the market annually. This innovation prevents water and soil contamination while promoting a circular economy. The company also supports local economies through this initiative, partnering with small businesses to collect and deliver recycled oil.

Following an exciting rebranding exercise under the Omnia Group, BME now operates through two core divisions: BME Blasting Solutions and BME Metallurgy. This has given the company a broader impact to strengthen customer’s sustainability efforts across the mining cycle.

“Our ability to contribute at both the blasting and mineral processing stages gives us a definite edge in the market,” said Hariparsad. “From breaking rock to optimising mineral recovery, our solutions align with the mining sector’s ESG priorities and help mines meet Scope 1, 2 and 3 emission targets.”



BME Metallurgy warehouse facility.

Global growth

BME continues to take this strategy forward through its global growth trajectory. The company’s successful integration with its Indonesian joint venture, along with expanding operations in Canada, Australia and West Africa, highlight its ability to deliver value in diverse markets.

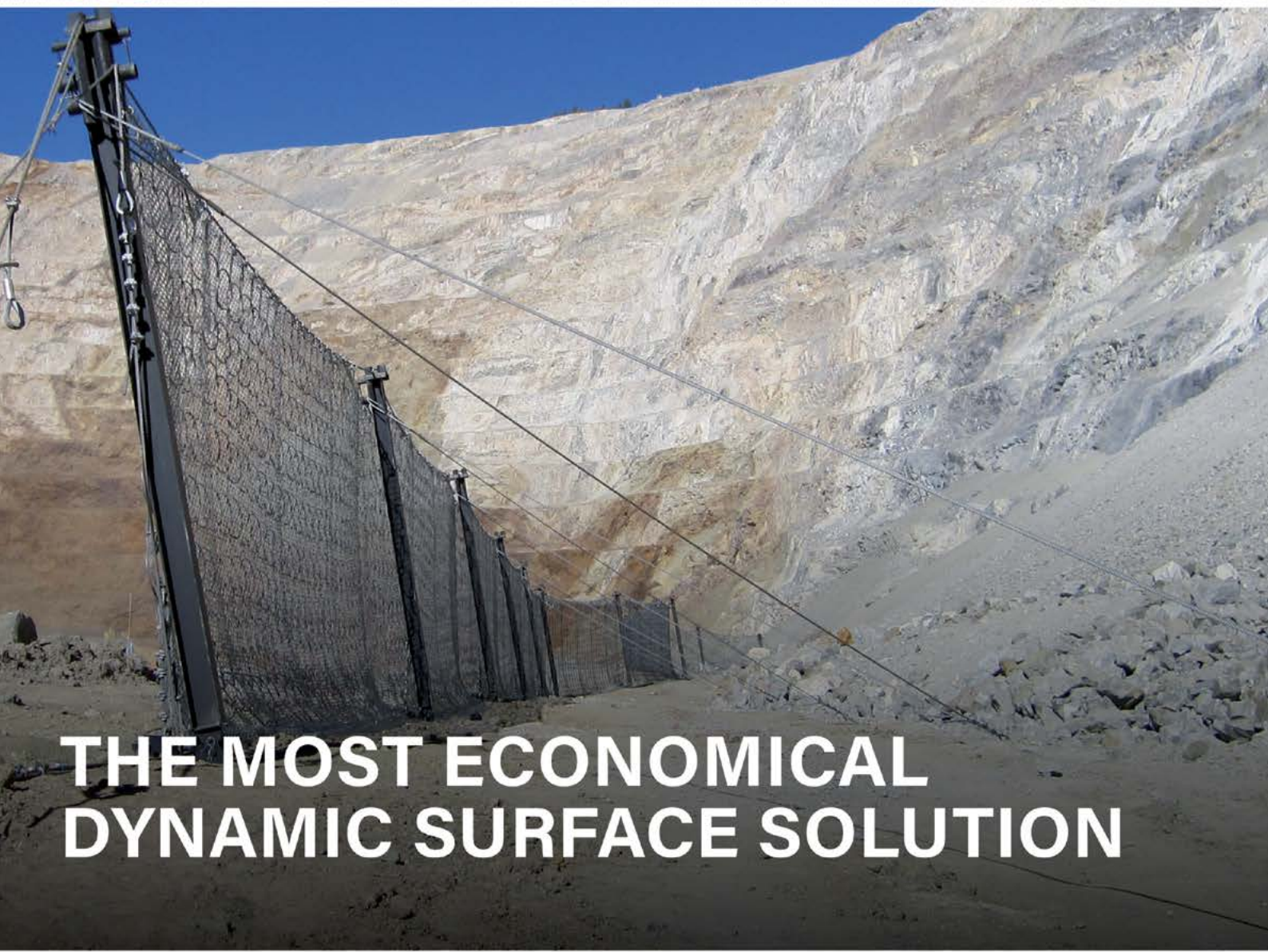
“We’re leveraging our expertise to support the growing demand for green metals and other critical resources,” says Hennecke. “BME’s investment in local operations and infrastructure, including the progress in detonator plants in Canada and Australia, underscores our commitment to sustainable growth.”

“In Indonesia, the integration with our joint venture partner, MNK, is progressing well,” he said. “Three new contracts were secured in Indonesia, signalling further growth in the region.”

The company boosted its in-country presence in Canada by commissioning a non-electric detonator plant, and its organic growth strategy and infrastructure development in Australia is progressing well – with the commissioning of a detonator plant underway.

He highlighted that safety underpinned the company’s positive performance, reflected in the way it maintained its Recordable Case Rate (RCR) of zero for the period. This world-class safety record was supported by the ‘Safety for Life’ programme and the collective efforts of the team.

“This focus is integral to our sustainability and ESG commitments, which align with Omnia’s efforts in creating a positive and sustainable impact for the planet and communities,” said Hennecke. ■



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A number of regulations are set to be promulgated for the mining sector.

Latest policy/legislative developments in the mining sector

By Ntsiki Ntsiki-Adonisi and Zinzi Lawrence of ENS

Policy and regulation play an integral role in establishing the ground rules for a sector, supporting economic development and the rule of law. Going into 2025, government has flagged a number of regulations that are set to be promulgated for the mining sector. Law firm, ENS, has outlined some key legislation set to be implemented this year, that will impact the local mining industry.

Separation of mineral and petroleum resources and energy

Early this year, the President of South Africa, Cyril Ramaphosa announced that the Department of Mineral Resources and Energy (DMRE) would be separated into the Department of Mineral and Petroleum Resources and the Department of Electricity and Energy (DEE). It is not the first time that the two departments have split.

On 28 August 2024 the President announced that the DMRE continues to exist until the necessary laws and relevant human and financial resources are transferred. The President indicated that a memorandum of agreement will be concluded to ensure the DMRE provides the necessary support to the Minister of Electricity and Energy for the

remainder of the 2024/2025 financial year until a new DEE is established and resourced.

Proposed amendments to the mprda

The DMRE is in the process of amending the MPRDA through the 2024 MPRDA Bill and has been undertaking consultations with relevant stakeholders in the second half of this year. We note that the MPRDA Bill has not been gazetted for public comment and we understand that its publication is imminent. Stakeholders were provided with a PowerPoint presentation of the DMRE dated 16 August 2024 (the DMRE Presentation) outlining the proposed amendments to the MPRDA. The proposed amendments were also discussed at a stakeholder engagement workshop. Some key proposed amendments



Ntsiki Adonisi



Zinzi Lawrence

include amendments to section 11 of the MPRDA, extension of the duration of mining permits, the regulation of historic dumps and section 43 of the MPRDA dealing with mine closure certificates.

The DMRE presentation does not make reference to proposed changes to the MPRDA to deal with empowerment. Following the judgment in the matter between Minerals Council of South Africa v Minister of Mineral Resources and Others Case No: 20341/19), which held that the 2018 Mining Charter is a policy document and is not binding as law, the DMRE had indicated that it would not appeal the judgment but instead, would consider steps to achieve the empowerment objectives of the MPRDA through amendments to the MPRDA. At this stage, it is not clear whether the MPRDA Bill will have changes relating to empowerment. It therefore remains to be seen whether this will be housed in the MPRDA Bill.



Policy and regulation play an integral role in establishing the ground rules for a sector.

Upstream petroleum resources development act

The MPRDA in its current form still regulates the upstream petroleum industry. On 29 October 2024, the President of South Africa assented to the Upstream Petroleum Resources Development Act 23 of 2024 (Upstream Act), which will regulate the upstream petroleum industry separately. The Upstream Act has not come into effect and will come into operation on a date fixed by the President by proclamation in the Gazette. The Upstream Act contains transitional provisions which will provide for security of tenure in respect of petroleum titles which have been applied for; and issued under the MPRDA.

Mining cadastral system

South Africa has lagged behind its African peers on implementing a modern, transparent cadastral system. The current SAMRAD system is largely unreliable, gives rise to issues of double grants, overlaps in mining titles; inevitable delays in commencing with projects and backlogs in applications.

The DMRE has also confirmed that it has made strides towards the implementation of a mining cadastral system, which is long overdue. On 20 May, the SLA for the cadastral system was signed. The DMRE has indicated that it is currently in the design and development phase of the system and is working towards a roll-out of the project by June 2025. ■

ENS

- ENS are legal experts in mining in Africa, entrusted by major local and international mining clients to service all their requirements across the continent by providing bespoke solutions to complicated problems.
- The dynamic mining team, headed by Ntsiki Adonisi, has built a solid reputation over many years by handling large, complex mining and minerals transactions across Africa.
- ENS also has a market-leading mine health and safety offering.
- ENS adds value through our strong understanding of operational and technical aspects such as geology and mining engineering, as well as its deep knowledge of commercial, regulatory and geopolitical considerations.



Hitachi equipment offer advanced solutions that balance productivity with environmental responsibility.

Driving sustainability: The power of Hitachi trucks and electric excavators

The mining industry is rapidly advancing on its journey to environmentally sustainable mining, driven by the need to reduce carbon emissions, enhance efficiency, and meet evolving environmental standards. Hitachi equipment offers advanced solutions that balance productivity with environmental responsibility in the form of battery trucks, trolley trucks and electric excavators.

Mining operations are energy-intensive and environmentally demanding. Hitachi electric-powered mining equipment leverages well-established technologies while focusing on tailored customer solutions. It is this

customer-centric approach that sets Hitachi Construction Machinery Africa apart in the mining industry.

Battery Trucks: Hitachi battery-powered trucks eliminates the need for diesel fuel, cutting CO₂ emissions significantly. Ideal for haul operations, these trucks deliver quiet,

zero-emission performance, enhancing both environmental sustainability and on-site working conditions.

Trolley Trucks: Designed for heavy-load tasks, Hitachi trolley-assist trucks utilise overhead electric lines to power the vehicle, lowering fuel consumption and emissions. This hybrid approach balances the dependability of diesel with the eco-friendly benefits of electric power.

Electric Excavators: Hitachi electric excavators offer robust digging and loading capabilities while reducing emissions and fuel costs. Their electric motors ensure lower maintenance requirements and contribute to a reduced environmental footprint.

Customer-centric innovation for maximum efficiency

At Hitachi Construction Machinery Africa, customer success drives innovation. Hitachi electric mining equipment is designed with operational efficiency in mind, offering consistent torque and power for smoother operation, reduced downtime, and lower energy consumption. This results in cost savings and improved profitability for mining companies.

Dedicated after-sales support for long-term value

Hitachi Construction Machinery Africa's customer-centric philosophy extends well beyond the point of sale. The company's extensive network of service centres, staffed by expert technicians, provides proactive maintenance, timely repairs, and a reliable supply of spare parts. Advanced telematics and remote monitoring systems enable predictive maintenance, ensuring maximum equipment uptime and extending service life.

Additionally, Hitachi Construction Machinery Africa is committed to environmental stewardship through its state-of-the-art component remanufacturing facilities. This comprehensive approach helps mining companies achieve sustainability goals while optimizing resource use.

A partner for a sustainable mining future

While the journey toward zero-emission mining equipment has already begun in the industry, Hitachi Construction Machinery Africa's focus on customer-centric solutions and dedicated after-sales support gives mining companies a trusted partner for long-term sustainability. By adopting Hitachi equipment, mining operators can reduce their carbon footprints, optimize operational costs, and achieve greater efficiency in a competitive landscape. ■



Powering the Future, Today.

Clean Energy Machines built for Heavy-duty Mining.

Hitachi Construction Machinery Africa supplies an extensive range of Hitachi products, associated parts and innovative services throughout Southern Africa.

All Hitachi products are known for reliability, performance and cost efficiency in their specific applications and carry quality assurance to international standards. Built on the foundation of superb technological capabilities, Hitachi Construction Machinery Africa is committed to providing leading-edge solutions and services to contribute as a reliable partner to the business of customers across Africa.

Visit us at the [Mining Indaba 3-6 February 2025](#) at [Stand M28](#), Cape Town International Convention Centre (CTICC).



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Trump's proposed tariff regime and African minerals

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



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



The US will have to get smarter in how it engages in Africa.

A recent article by Craig Singleton in The New York Times – aside from appearing like a job application to work in the new Trump administration – fell only just short of endorsing an America-first attempt to beat China into economic submission through aggressive tariffs: “If Mr Trump can couple the blustery style of his first term with a more focused strategy and tighter discipline, the next four years are a golden opportunity to keep Beijing on the defensive and permanently transform the rivalry in America’s favour.”

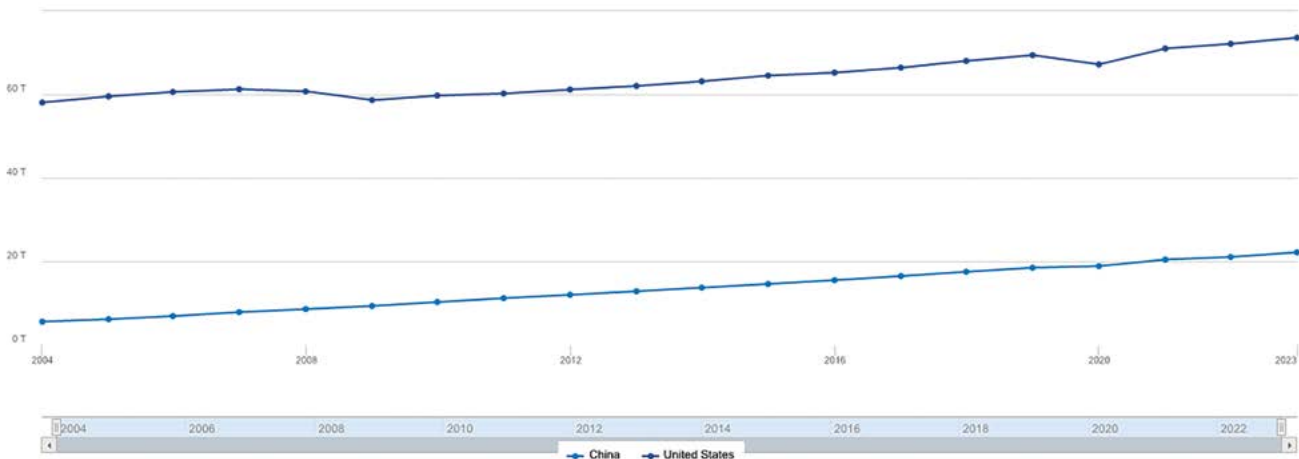
Singleton is right, of course, that China is a declining power. Apologies to all the China apologists reading this column. I’ve been following this debate about China as a rising power for two decades now. There is nothing in the data that should convince anyone that China will out-compete the US.

As the graph below makes clear, China is nowhere close to the US in economic performance terms. US GDP per capita, by 2023, was US\$73,637 (in constant 2021 \$ purchasing power terms). By contrast, China came in at US\$22,135. On average, US citizens are 3.33 times wealthier than Chinese citizens. China’s progress over the last twenty years has been impressive on the surface, and the differential has converged. In 2004, US GDP per capita was US\$58,153. China’s was US\$5,567. You can do the maths. My prediction – at which economists have typically not been that good – is that the differential is unlikely to fall further. China’s growth has been off a very low base. Moreover, the country will grow old before it grows rich thanks to the legacy effects of a disastrous “one-child” policy.

China’s political institutions also render its economic

institutions fundamentally incapable of creating the kind of dynamism unleashed in the 1980s under what Yasheng Huang called “directional liberalism”, which ended abruptly with the Tiananmen Square massacre in 1989. Xi Jinping’s iron grip over power within the Chinese Communist Party since 2012 means that he is surrounded only by yes-men who will not tell him that his economic and foreign policy decisions are wrong-headed. It is hard to see how the country will recover from building ghost cities that created an enormous property bubble, or how it will now manage its growing debt with an overheated and stagnating economy. Its attempts to move away from an export-led manufacturing growth model into a more services and consumption-orientated economy haven’t worked because the wealth base is neither high enough nor sufficiently broad-based to effect the change.

However, it does not follow that the US should now kick China while it is down. This is an autarkic temptation that defies wisdom. Singleton points out that Trump has “proposed tariffs as high as 60 percent on Chinese imports”. If you view big-power rivalry as a zero-sum game, this approach might appeal. But the significant risk here is that blanket or arbitrary tariffs on Chinese products would drive US inflation up, which would be an unnecessary global loss. Inflation, in a nutshell, is the primary factor that brought Trump to power, notwithstanding out-of-touch urban elitism displayed by the Democrats. While US unemployment is enviously low, inflation hurts cash flow among lowest-paid workers, the very people who voted for Trump. These are the same workers whose



Series : GDP per capita, PPP (constant 2021 international \$)
 Source: World Development Indicators
 Created on: 12/03/2024

jobs are increasingly threatened by mindless digitalisation and automation. As Nobel laureate, Daron Acemoglu, has consistently pointed out, the marginal gains from this approach are insufficient to warrant it.

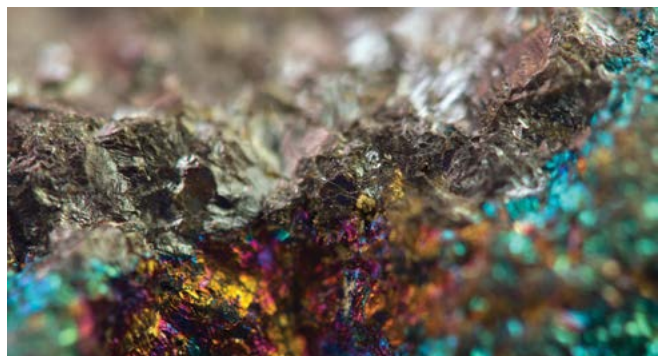
Higher inflation from arbitrary tariffs on Chinese goods will create acute welfare losses in the US that will be hard to justify politically, especially given the growing automation threat. The Federal Reserve typically responds to inflationary signals by increasing interest rates. We are only just beginning to recover from peak interest rates, and it would be enormously damaging for global growth to return there.

A wiser approach, it seems to me, is to only impose severe tariffs on Chinese products if Xi demonstrates any further aggression (clearly defined and communicated) in the South China Sea and Taiwan invasion ambitions. This can be extended to China's tacit support for Russia against Ukraine, and evidence of its growing alliance with Iran and North Korea. The US should be careful not to push China deeper into this alliance through random brinkmanship. Avoiding this would require a careful fine-tuning of tariffs and export taxes for very specific ends. For instance, the US would be wise to diversify its sources of rare earth and other green transition minerals away from China and towards Africa instead, partly through taxing Chinese imports disproportionately. It may also make sense to limit the supply of high-tech goods to China, through export taxes, that will prevent it from building more sophisticated weaponry.

This means that the US would do well to provide African countries with genuinely mutually beneficial deals to secure green minerals. China has a significant head start in this arena through its Belt Road Initiative (BRI). The US will have to get smarter in how it engages in Africa, as I argued in this column last month. Preferential access to US markets through a reconfigured AGOA may afford the US an opportunity to place subtle foreign policy conditions on African governments. But these will only work if those governments see preferential access as a genuine good, concomitant with opportunities to add domestic value – where sensible – to raw materials prior to exports. Perhaps the more important thing here, though, is

that projects like the Lobito Corridor should be configured to avoid reflecting the colonial extraction model. Infrastructure projects should be clearly designed to ensure economic spillover benefits for the entire region through enhancing entrepreneurial dynamism and generating side-stream and upstream opportunities from Africa's extensive mineral wealth.

In short, Trump and his economic advisers should tread carefully and strategically on the tariff front, not to simply 'teach China a lesson' but to ensure gains for its domestic labour force and benefit for African countries who would otherwise continue their march into Chinese indebtedness. ■



The US would be wise to diversify its sources of rare earth and other green transition minerals away from China and towards Africa.



Trump and his economic advisers should tread carefully and strategically on the tariff front.

KSB Pumps and Valves ready to support hydrogen economy

As the world shifts towards cleaner energy sources Namibia and South Africa provide favourable conditions. Not surprisingly, two key projects are already in advanced stages of development in Namibia with the Hyphen Hydrogen Energy and Daures projects well underway.

Global pumping solutions provider, KSB, has identified the vast potential of these types of projects in southern Africa and through its KSB Pumps and Valves subsidiaries in Namibia and South Africa is investing heavily in bringing the right skills to the region.

KSB Pumps and Valves Namibia managing director, DeWet Van Wyk, adds that with its local manufacturing ability and access to global supply chains, KSB is well poised to support the scale of the hydrogen economy where entire regions need to be transformed. “Our pumps ensure the ultra-pure water



KSB Pumps and Valves stands ready to support hydrogen economy.

used in electrolysis remains contaminant-free, which is crucial for maintaining the integrity of the electrolyzers. Additionally, we pressurise the hydrogen, making it easier and cheaper to transport it as ammonia. Beyond the technical infrastructure, these projects will require

significant investment in population amenities. The remote location of the hydrogen projects, particularly in sparsely populated areas like Lüderitz and the Northern Cape, necessitates the development of entire support ecosystems.” ■

New Maptek platform for automation and orchestration

On the back of successful demonstrations at MINExpo International in Las Vegas in September, Maptek has announced that its Maptek Vestrex ecosystem for automation and orchestration is open for early access

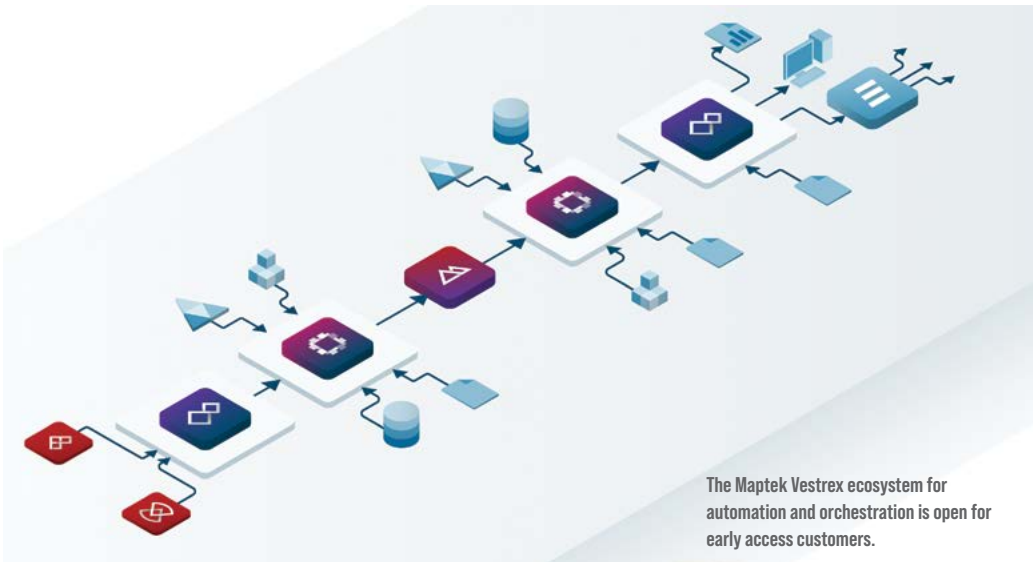
customers. Vestrex creates extraordinary value by making connections between diverse data sources without constraints of product, application, process or format. Data in the cloud encourages stakeholders across mining roles, teams and organisations to collaborate and explore new use cases for their technical data beyond traditional applications. Automation streamlines operations through real-time data and process

integration, and accelerates decision making processes. Orchestration builds on computational power and automated workflows to unlock value from technical data and mining systems.

Global Strategy Manager, James Mackenzie commented on the interest surrounding Vestrex during MINExpo.

‘Everyone we spoke to could immediately think of a way they could apply Vestrex to their organisation,’

Mackenzie said. ‘Customers can expect effortless data transfer between cloud and desktop environments, with data managed securely from a centralised platform,’ Mackenzie added. ‘They will also be able to work with Maptek to orchestrate custom processes that handle their particular challenges.’ The new platform is based on three key pillars—data services, cloud computing and orchestration—sharing a common vision for solution integration and inter-process workflows. ■



The Maptek Vestrex ecosystem for automation and orchestration is open for early access customers.

World's strongest land-based crane passes test programme

Transport and lifting specialist, Mammoet, has officially completed testing the SK6000 – the world's strongest land-based crane. This process - overseen by maritime classification services organisation Lloyd's Register, certifies the crane's safe operation to its specification. Testing was carried out at Mammoet's Westdorpe facility in the Netherlands over the last three months. The tests covered the maximum extents of all load charts for the crane, for all main mast configurations, from shortest (127m) to longest (171m). At its most strenuous, the process tested the crane to a maximum load moment of 520 000 tonne meters. This is well over one and a half times greater than the rated load moment of the SK350 - which was previously the world's



Mammoet officially completed testing the SK6000 - the world's strongest land-based crane.

strongest land-based crane. The SK6000 helps Mammoet's customers across the energy sector to build on a larger scale than ever before, using modularised construction techniques to build in

parallel and enhance the efficiency of assembly phases. The SK6000 will now be boomed down and containerised, ready for shipping to its first project in early 2025. ■

MEICS delivers Mogale Tailings Retreatment Project

Specialist multi-disciplined industrial construction company, MEI Construction & Services (MEICS), played a key role in the successful completion of the Mogale Tailings Retreatment Project as the main contractor for the SMPP and EC&I Works. The scope of the project included the fabrication and delivery of steelwork and platework to site, the installation of all material and equipment as well as assisting the client with commissioning.

Discussing the importance of the project, MEICS said that from the outset every effort was made to expedite fabrication and mobilise critical resources to the site, while continuously assessing risks, implementing controls and measuring the effectiveness of controls.

Further to this, MEICS transferred skills and experience to local labour to benefit the host community.

MEICS services and expertise

MEICS offers SMPP and EC&I construction solutions in the mining, power, energy, petrochemical, solar, paper, sugar and steel sectors.

"Our strength lies in providing multi-disciplined solutions including structural steel fabrication and installation, platework



Another multi-disciplined project coming together.

fabrication and installation, mechanical installation, piping fabrication and installation, electrical installation, control and instrumentation installation. We are focused on enabling our clients to achieve a return on investment by ensuring that we deliver quality construction that beats the schedule and budget without harm to people or the environment," the company said.

MEICS is a CIDB Level 9 company accredited to ISO 9001, ISO 45001, ISO 14001 and ISO 3834-2

Trust Our Experience to Keep Your Project on Track.



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Booyco Electronics' field service regime key to effective pds/cps operation

In the safety- and productivity-conscious world of mining, correct and effective operation of both Proximity Detection Systems (PDS) and Collision Prevention Systems (CPS) are vital. Through a formidable field support service team of more than 200 technicians across South Africa, Booyco Electronics ensures its customers can count on their PDS/CPS solutions to deliver consistent and accurate results all the time.

While their primary objective is to ensure the safety of people, Proximity Detection Systems (PDS) and Collision Prevention System (CPS) installations also have a direct bearing on other critical parameters such as equipment availability and productivity. Through its field support service technicians, Booyco Electronics ensures the intended benefits and objectives of implementing the technology are realised.

PDS/CPS solutions are critical safety

systems in both surface and underground mining environments, particularly due to the significant risk posed by the operation of trackless mobile machinery (TMM) deployed to work in these environments. To ensure correct and reliable functionality of these systems, Charl Marais, General Manager – Field Services at Booyco Electronics, stresses the need for a regular and robust maintenance regime, customised to specific customer needs. “Given that we work with safety systems, field support service is a critical arm of our business to ensure that all machines fitted with PDS/CPS solutions comply with our Section 21 responsibilities, as specified by the Mine Health Safety Council,” he explains, adding that the company has more than 200 technicians across South Africa, supporting both Service Level Agreements (SLA) and non-SLA customers. ■



PDS/CPS solutions are critical safety systems in both surface and underground mining environments.

Multotec's new factory expected to boost efficiency and production

Industry leader in metallurgy and process engineering, Multotec, consolidated its South African injection moulded polyurethane screening media factory sites into a single, larger facility worth R100 million, to enhance capacity and increase efficiency. The new factory is situated on a 7 068m² property with 4 360m² under roof, close to Multotec's current Forge Road main campus in Spartan, Kempton Park. It houses the tool room, production facility, offices and warehousing facilities, providing a comprehensive and efficient workspace.

Rhodes Nelson, Senior Vice President

– Product Management at Multotec, expressed excitement about the anticipated improvements in efficiency and productivity. He predicts that conservatively the new screening media factory will achieve a 15% reduction in unnecessary activity due to a footprint that was designed for ease of material flow and improvements such as the consolidation of raw materials storage facilities.

The injection moulded polyurethane screening media factory supplies screening media products to mining operations across Southern Africa and West Africa, including Botswana, Mozambique, Namibia, Zimbabwe, as well as to international markets such as Australia, North America and South America – which covers most mining destinations around the globe. ■

Empowering today, shaping tomorrow.

MTN Converged Solutions is striving to change the ICT landscape across Africa. By focusing on innovation and customer-centric services, MTN aims to empower businesses and individuals with cutting-edge technology. Our mission is to provide seamless and advanced ICT solutions that cater to the evolving needs of our customers. With a strong

presence in key markets like South Africa, Uganda, Ghana, Nigeria, Côte d'Ivoire, and Cameroon, MTN Converged Solutions is dedicated to driving growth and delivering exceptional value. We are excited to take our place in the transformation of the digital experience across the continent. ■



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