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Miners making big moves

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What a great time to be opening a new gold mine. The precious metal is blazing and breaking price barriers to trade at all-time highs. Australian miner, West Wits Mining, which plans to open South Africa's first new underground gold mine in 15 years, has initiated pre-production works, engaged a mining contractor and is moving key equipment to site. The company will begin output next year at its Qala Shallows project, located on the western edge of Johannesburg. The $90 million project is projected to produce about 70 000 ounces of gold annually. Qala Shallows, part of a concession that operated for more than a century before closing in 2000, is expected to generate $2.7 billion in revenue over its 17-year lifespan.

The favourable price environment creates a compelling economic case for projects that might have been marginal under lower gold price scenarios, such as the Qala Shallows project. Record-breaking prices provide exceptional margins for producers. In August, gold traded around $3 380 /oz.

South African miner, DRDGOLD, is set to invest around R7,8 billion in its Vision 2028 - a growth strategy centred around five major capital projects. The strategy aims to boost gold production by about 20% to 6 tonnes annually by financial year 2028, primarily through increasing Ergo and Far West Gold Recoveries throughput and extending mine life. Key initiatives include infrastructure upgrades, construction of a new tailings facility, and the adoption of renewable energy through solar power to reduce costs and environmental impact. Vision 2028 is expected to significantly strengthen DRDGOLD's position as a leading tailings reprocessing specialist, potentially placing it among the top tier of mid-sized gold producers in Africa.

Also making big moves is the country's largest gold miner, Harmony Gold, which recently made a play for Australian miner, MAC Copper, in a deal worth around R19 billion. MAC Copper owns the high-grade CSA mine in Cobar, New South Wales, Australia. The acquisition accelerates Harmony's strategy of adding to its portfolio of high-margin, long-life ore bodies, the company said. The mine will add about 40 000 tons per annum of copper to the group's portfolio.

On the topic of Australian acquisitions, local miner, Pan African Resources which acquired Tennant Consolidated Mining Group for $54.2 million in December 2024, announced that the Tennant Mines gold processing plant has been commissioned on budget and on schedule with steady state production of roughly 50 000 oz per annum expected during the first quarter of FY26.

In other good news, PGMs, which have long been in the doldrums, are finally on the rebound pleasing PGM producers. In fact, the platinum market is experiencing a powerful revival, with prices soaring to an 11-year high in June 2025. The recent rally in the platinum price reflects increasing demand from industrial applications such as medical uses and manufacturing equipment, the automotive industry and the jewellery market (see pg. 10 for our PGM outlook).

> The favourable price environment creates a compelling economic case for projects that might have been marginal under lower gold price scenarios, such as the Qala Shallows project.

Meanwhile, the world's largest primary platinum producer, Valterra Platinum, will launch trial mining operations at its flagship Mogalakwena open-pit complex in late 2026. The miner plans to extract higher-grade ore from the underground Sandsloot pit development at the world's largest open-pit PGM operation in Limpopo province. Valterra hopes the underground mine will contribute to a 10–50% increase in Mogalakwena concentrate production. Mogalakwena is a significant asset for Valterra, accounting for nearly half of the company's PGM output.

On the topic of all things precious, dual-listed Gemfields recently concluded the sale of luxury goods brand Fabergé to US-based investment company SMG Capital – this will help bolster the miner's under-pressure balance sheet.

Our cover story for this edition, Ukwazi, a leading mining consultancy firm, discusses the evolution in underground massive mining techniques. The company recently established a local underground massive mining Centre of Excellence, which brings together world-class expertise to guide mining companies through the complex transformation, Ukwazi's MD, Jaco Lotheringen tells *Modern Mining*.

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Seriti Resources CEO, Mike Teke.

Electricity Minister **visits Seriti Green's Ummbila Emoyeni project**

Seriti Resources CEO, Mike Teke, and Seriti Green CEO, Peter Venn, recently hosted the Minister of Electricity and Energy, Dr Kgosientsho Ramokgopa, at Seriti Green's flagship Ummbila Emoyeni renewable energy project. The Minister's visit underscores Seriti Green's alignment with the South African government's priorities to accelerate the Just Energy Transition (JET) and build a sustainable, low-carbon energy future.

Located between Bethal and Morgenzon in Mpumalanga, the first three phases of the Ummbila Emoyeni project – each comprising a 155MW wind energy facility – are scheduled to begin commercial operation in the first half of 2027. Once operational, the project will supply approximately 75% of the Seriti Group's electricity needs, supporting its decarbonisation goals. The site forms part of a broader 900MW hybrid renewable energy cluster, comprising five wind farms and one solar photovoltaic (PV) facility, expected to be fully commissioned by 2027. Once completed, it will be the largest renewable hybrid energy facility in South Africa. The project's anticipated total capital investment spend will be R70 billion. Some R385 million will go towards funding small and medium sized businesses and social development projects. ■

Minerals Council **prepared for talks on Mineral Resources Development Bill**

The Minerals Council South Africa will engage extensively with the Department of Mineral and Petroleum Resources (DMPR) on the Mineral Resources Development Bill to ensure the mining regulatory environment is conducive to investment, growth and job creation. The Minerals Council's members account for 90 percent of South Africa's annual mineral production. The Minerals Council lodged its extensive Board-approved submission on the Bill within the 13 August 2025 deadline.

"The regulatory environment must be conducive to encouraging investment in exploration, mine development and sustain existing mining operations so that the industry can grow, create jobs and generate the wealth it is capable of delivering for the benefit of all South Africans," says Mzila Mthenjane, CEO of the Minerals Council.

Mzila Mthenjane, CEO of the Minerals Council.

"Our key point of departure in engagements with the Department is to have pragmatic conversations that address elements of the Bill that discourage investment and growth of the industry which we all agree has untapped potential that is not being realised," he says. ■

Exxaro group management restructure changes

Exxaro Resources has announced changes to its Group Management Structure, aimed at repositioning it as an organisation that is fit for the future and a structure that incorporates its growing diversified portfolio, to stabilise the business, enhance agility and collaboration, and enable more responsive decision making as it accelerates the execution of Exxaro's Sustainable Growth and Impact Strategy.

These changes ensure that Exxaro's leadership team is aligned to exploit opportunities across coal, energy, and transitional metals, while driving capital discipline and operational efficiency. "These leadership appointments and structural changes strengthen Exxaro's functional model to deliver sustainable growth and long-term value to our shareholders and all our stakeholders. With a proven leadership team in place, Exxaro is well positioned to accelerate diversification, deliver consistent operational performance and unlock value in energy and metals, while continuing to strengthen our coal base. We look forward to welcoming Caroline Shirindza and Neo Monareng to team Exxaro," said Ben Magara, CEO of Exxaro. ■

Caroline Shirindza - Executive Head Coal (effective 1 November 2025).

FutureCoal appoints Mike Teke as Chairman

FutureCoal has appointed Mike Teke as its new Chairman.

The Global Alliance for Sustainable Coal (FutureCoal) has appointed Mike Teke, Group CEO of Seriti Resources, as its new Chairman effective 12 August 2025, following the retirement of July Ndlovu. As Chair of FutureCoal's Southern Africa Chapter, Teke has already played a significant role in advancing the Alliance's Sustainable Coal Stewardship (SCS) framework. This practical, innovative, and technology-led roadmap provides a 10-year pathway for modernisation and responsible investment aimed at delivering both economic and environmental benefits. ■

De Beers and Endiama discover new kimberlite field in Angola

Diamond miner, De Beers, together with Angola's national diamond company, Endiama, recently announced a significant step forward in their joint exploration efforts with the discovery of kimberlite, the host rock for diamonds, in Angola. In July 2025, the De Beers-Endiama joint venture successfully intersected kimberlite in its first drill hole into a high-priority cluster of targets, identified from the airborne surveys completed in March 2025. This breakthrough represents the discovery of the first new kimberlite field by De Beers Group in more than three decades. Over the coming months, further drilling, ground geophysical surveys, and laboratory analysis will be conducted to confirm the kimberlite type and assess its diamond potential. This latest milestone builds on the foundation of two Mineral Investment Contracts signed between De Beers and the Government of Angola in April 2022, and a MoU signed at Mining Indaba in February 2024.

De Beers and Endiama discover new kimberlite field in Angola.

Pioneering the Future: **Local massive mining centre of excellence for the EMEA region**

By Jaco Lotheringen, Managing Director, Ukwazi

Jaco Lotheringen, Managing Director, Ukwazi.

My first exposure to underground mining was in the early 1990s at Thabazimbi iron ore sublevel cave section. It was hard not to become totally fascinated by the three-dimensional labyrinth of tunnels filled with busy load-haul-dumpers constantly loading ore from draw points and feeding ore passes. Additional to the sublevel cave, alternative methods such as open stoping and vertical crater retreat were being investigated on a trial mining basis to cater for the changes in shape, dip and quality of the ore body as the sublevel cave was nearing the end of its economic life.

Massive mining in Africa

The technical department worked closely with the production team to understand and manage factors such as the shape of the drift roof, the width of the drift, the difference in fragmentation of the blasted ore and the caved roof, the inclination of the front, grade control processes for dilution management, and meticulous ring and blast design. I can remember the general interest with the available international technical papers on advanced, high-production caving operations such as Kiruna, an iron ore mine in Sweden.

Underground mining was doing well in South Africa from the deep gold mines, the shallower platinum mines and a number of mines using massive and caving methods such as Thabazimbi, Prieska, Nkomati, Finch, Koffiefontein, Cullinan, Black Mountain and many more. Later the Palabora open pit transitioned to block caving and more recently mines such as Ivanhoe's Platreef and De Beers' Venetia mine are establishing large-scale underground mines, using massive mining methods.

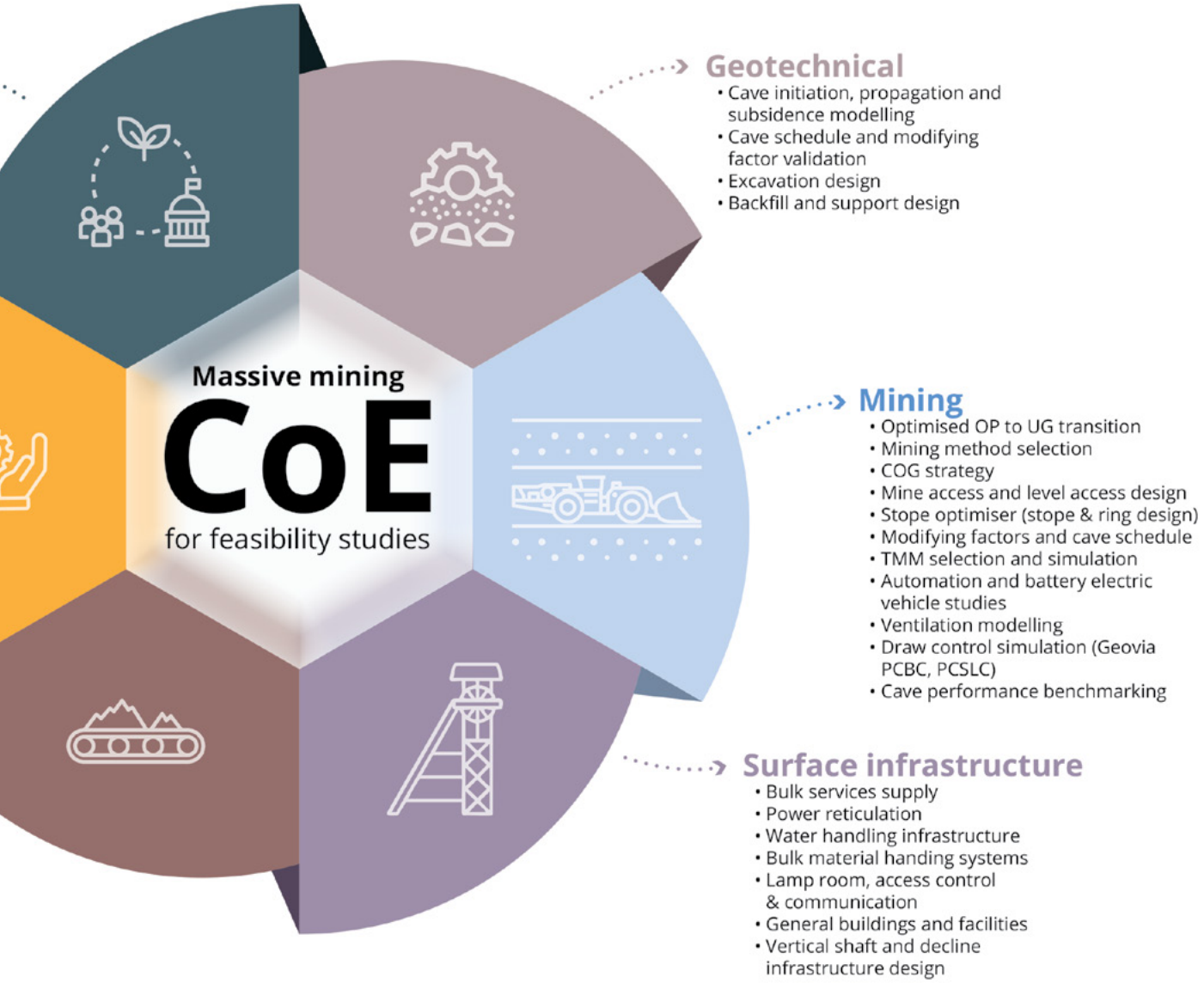
Based on this experience, and on the back of the strong Southern African advisory services industry, our company, Ukwazi participated in the design and establishment of a number of underground mines, using massive methods across Africa, particularly the west African gold mines and the high-grade copper mines of the Copperbelt.

A rich history of underground mining in South Africa

Since the discovery of the kimberlitic diamonds at Kimberley and the Witwatersrand goldfields in the latter part of the 19th century, mining has played a significant role in South African society. This was later cemented by the discovery of the platinum group metals of the Bushveld Igneous Complex by Lombaard and Merensky in the 1920's. To supply energy and metals to these mines and related local industries, coal deposits were developed in the Eastern Cape, Kwazulu-Natal and Mpumalanga; copper and iron ore were targeted in the Nort West province, Limpopo and the Northern Cape. Every one of these discoveries had an impact on the world-wide supply of saleable minerals at the time.

Before long, surface mines started to transition to underground mining. This is where South African companies really pioneered technologies and methodologies to deal with the complexities of underground mining. Based on this, South Africa was internationally recognised as a centre of excellence for underground mining. Despite the flat-dipping, narrow tabular nature of the gold and platinum deposits of the Witwatersrand and the Bushveld Igneous Complex, our underground mining methods and technologies are diverse. As part of this trend, we were developing large block caves, large sublevel caves and the world's deepest shafts, world-class infrastructure and process facilities based on a wide range of commodities.

To build these mines and industries, large and highly skilled and multi-disciplinary technical teams were developed over the years, some of which were later unbundled to operate independently. A number of world-class advisory companies were



Successful massive mining projects rely on wide range of specialised professionals with practical experience to design well-integrated, safe and profitable underground mines.

started to deliver niched technical skills to the mining industry over the last 50 years. Ukwazi is one such company and is part of this evolution in underground massive mining techniques.

The recent growth of the international consulting industry has centred around the development of international reporting codes and guidelines, and the ability of the North American and Australasian public funding institutions to secure a platform for investors and access to funding for mining houses world-wide, and also in Africa.

A strategic response to industry evolution

As mining activities on the African continent matures, some of these deposits must transition to underground mines and some were more suitable to underground mining methods from the start. Most of these underground mines will be developed based on massive mining and caving methods.

For mining executives, this transition represents one of the most significant strategic choices they will face, not only in terms of the envisaged underground operation, but also the management of the transition and the potential production gaps, if not planned on an integrated basis.

Recognising this fundamental shift, Ukwazi established a local underground massive mining Centre of Excellence in 2025, bringing together world-class expertise to guide mining companies through this complex transformation. The experts in our CoE understand the financial, operational, and regulatory implications of this decision to provide the technical foundation

Ukwazi is part of the evolution in underground massive mining techniques.

Ukwazi actively participated in the design and establishment of several underground mines.

Ukwazi is well positioned to add significant value to massive mining and caving projects throughout the EMEA region.

as basis for informed decision-making.

Through comprehensive feasibility studies, risk assessments, and operational planning, the CoE helps clients understand not just whether underground mining is viable, but how to optimise their approach for maximum value creation. This support extends throughout the project lifecycle, from initial concept through full production and integrated mine closure.

Addressing industry-wide challenges

The establishment of this CoE comes at a time when the mining industry faces unprecedented challenges. Stakeholder expectations around environmental stewardship have never been higher, while the technical complexity of accessing deeper ore bodies continues to increase. ESG compliance and funding have become a critical determinant of project viability, with investors and regulators demanding demonstrable commitments to environmental protection, social responsibility, and governance excellence. The CoE's focus on cost-effective, safe, and sustainable underground mining methods directly addresses these requirements, providing clients with solutions that satisfy both operational objectives and ESG mandates.

Massive mining technical excellence for Africa, from Africa

The Centre's integrated approach recognises that successful underground mining operations require seamless co-ordination between geological understanding, ESG, geotechnical test work, simulation and benchmarking, surface and underground engineering infrastructure design, practical mining considerations, risk management and compliance reporting. By bringing together specialists across these disciplines, the CoE provides comprehensive solutions that address the full spectrum of underground mining challenges. The structure of our massive mining CoE was based on the incremental skills and decades of practical experience that are unique and specific to underground massive mining and caving projects.

Innovation through collaboration

Beyond individual project support, the CoE serves as a hub for innovation in underground mining practices. The collaborative environment enables specialists to share insights across different styles of mineralisation, mining methods and geotechnical conditions, fostering the development of new approaches and technologies. This knowledge-sharing culture ensures that clients benefit not only from individual expertise but from the collective engagement of the entire team.

Our specialists regularly engage with world-wide subject matter experts, equipment manufacturers and technology providers to stay at the forefront of underground mining innovation. This network approach ensures that clients have access to the latest technological advances and can implement cutting-edge solutions in their operations.

Looking forward

As the mining industry across EMEA, and specifically Africa, continues to evolve, the importance of specialised underground massive mining expertise will only grow. The establishment of this CoE represents a significant milestone in Ukwazi's evolution and in the industry's ability to access deep mineralised deposits sustainably and efficiently.

The Centre's integrated approach, combining deep technical expertise with collaborative innovation, positions it as an essential resource for local and international mining companies navigating the complex environment of medium- and large-scale massive mining underground projects.

The mining industry's future lies beneath the surface, and this initiative is uniquely positioned to guide that journey. Through our specialised expertise, practical experience, innovative approaches, and unwavering commitment to industry advancement, the CoE represents a new chapter in underground massive mining excellence.

Supporting strategic decision-making

Ukwazi is an independent, multi-disciplinary mining advisory company with a 21-year track record in delivering code compliant, cohesive, and integrated mining and mine infrastructure studies across the EMEA region.

Based on our rich history of underground mining, specifically massive mines for diamonds, iron ore, copper and gold mining and our locality in Africa, we are well positioned to continue to add significant value to massive mining and caving projects throughout the EMEA region. ■

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Jewellery: The sparkle driving the platinum supply and demand conversation

The platinum market is experiencing a powerful revival, with prices soaring to an 11-year high in June 2025. While traditional industrial uses such as automotive catalysts, electronics, manufacturing equipment, and medical applications continue to drive the market, according to Platinum Guild International (PGI), a marketing organisation, platinum jewellery sales are contributing to this upward momentum.

Platinum's rally: supply and demand constraints

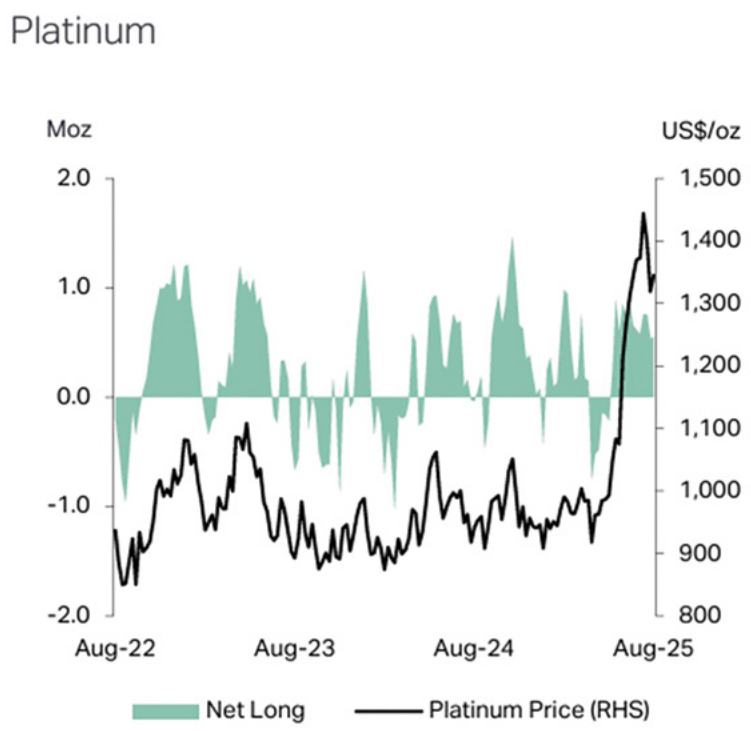
The recent rally in the platinum price reflects increasing demand from industrial applications such as medical uses and manufacturing equipment, as well as from the automotive industry. As demand for hybrid vehicles rises, exceeding that of electric vehicles in Western economies, a greater platinum content per vehicle is required due to its role in effective emission control – converting carbon monoxide and hydrocarbons in the catalytic converter into carbon dioxide and water vapour.

However, shifting consumer perceptions in the jewellery market are also playing a role – gold prices have soared to record highs and created what is widely known as "gold fatigue" among consumers and investors, meaning platinum, with its analogous prestige, is re-enforcing itself as a compelling alternative to gold for jewellery; luxurious, but more accessible.

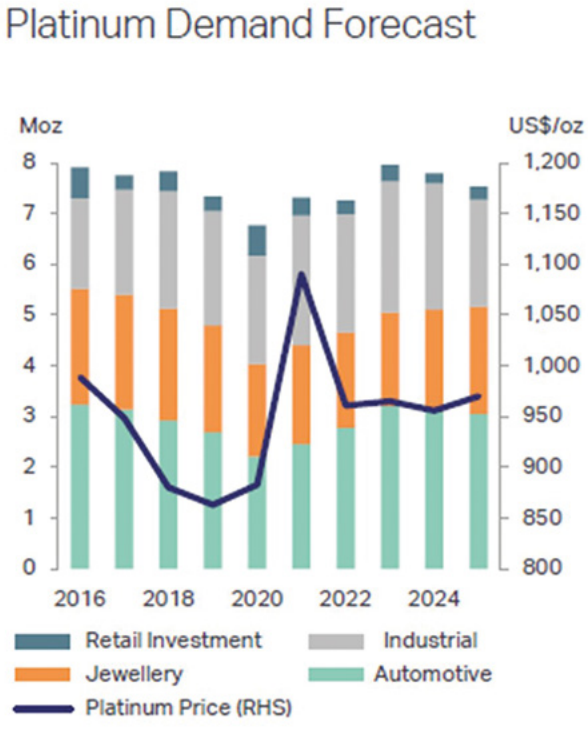
At the same time, fundamental supply constraints are also influencing rising prices. Leading independent precious metals consultancy, Metals Focus, predicts that the platinum market will record a deficit of 600 000 ounces in 2025, with global mine output forecasted to decrease by 6%. The platinum-group metals (PGM) market has exhibited this outlook since the start of the year, when, like many other commodity markets, it began to face heightened uncertainty due to tariff discussions and shifting automotive emissions regulations. This prompted a significant shift of material into the US, with the CME Group's warehouse stocks reaching 630 000 ounces in Q1 before declining to 341 000 in Q2. Unlike last year, when accelerated inventory drawdown helped ease the market, this is unlikely to repeat itself in 2025 according to Metals Focus' Director of PGM Research, Wilma Swarts.

These supply shortfalls largely stem from economic challenges and weaker production in key regions, particularly South Africa. South Africa remains the backbone of global platinum supply, with the Western Limb alone containing over 450 million ounces of PGMs, and 70% of the world's platinum supply, according to GlobalData. Although these resources are sufficient to sustain current output for over a century, according to Metals Focus, economic pressures are reshaping the supply landscape.

In 2010, when Metals Focus' platinum mine dataset began, the Western Limb accounted for 61% of global output. Since then, that share has steadily declined, slipping to 50% last year and



Source: Metals Focus, Precious Metals Weekly, August 2025. Chart showing platinum price year-on-year since 2022.



Source: Metals Focus, Bloomberg, PGM Focus 2025. Chart showing annual platinum demand forecast, including consistent rising demand year-on-year from the jewellery sector since 2020.

Source: Platinum Guild International. PGI's 'Platinum Days of Love' collection in India.

projected to decrease further to 47% by the end of the decade. Economic pressures such as rising costs of extraction and labour issues have led to this reduction, in addition to price pressures which have exacerbated the decline in production. Deeper and more complex ore bodies require costly mechanisation, and output via these traditional labour-intensive methods has fallen. However, global platinum recycling is expected to increase by 3% year-on-year to 1.57 million ounces according to the latest Metals Focus PGM Focus report, helping to offset some of this weakness in primary supply.

Despite these supply constraints, demand for platinum remains robust and, in addition to traditional uses, changing consumer preferences mean an often-overlooked sector is re-invigorating demand: jewellery.

The role of jewellery and changing consumer preferences

Platinum's role in the jewellery market is growing, with changing perceptions linked to evolving consumer and trade preferences. Its rarity and durability mean platinum is increasingly seen as a timeless choice for a jewellery metal, making it an attractive option for customers seeking both luxury and value. Platinum Guild International's consumer education and targeted market support have increased platinum's visibility as a high-end precious metal and contributed to platinum's resurgence as a top choice in jewellery.

One such initiative is the company's "sell-through optimisation" programmes in multiple key jewellery markets. By expanding its partnerships with platinum manufacturers and providing both online and onsite training and sales "e-schools" to sales associates, PGI helped partners achieve increased monthly sell-through volumes.

For instance, in India, PGI has pushed for the strategic growth of platinum jewellery by market-specific initiatives and consumer campaigns. PGI's focus remains on young, affluent consumers, and by addressing their desires for non-traditional designs and something other than gold, which is more about tradition and investment, platinum becomes a premium choice and symbol of contemporary identity. PGI has established three brands targeting different groups in India, speaking to the self-expression of these target groups and helping to enhance platinum's premium positioning as a high-margin category for retail partners.

As a result, from 2020 to 2024, platinum jewellery fabrication in India grew at an impressive 23% compound annual growth rate (CAGR). Besides brand messaging, this expansion in platinum demand within jewellery markets was supported by increasing its retail presence, in-store activations, digital campaigns, and celebrity endorsements. PGI collaborated with over 1 900 points of sale (POS) of strategic partners and trained over 22 700 sales staff last year, regularly launching integrated campaigns across print, CTV, social, and digital platforms to increase purchase rates, the most successful of which drives almost half of platinum jewellery ounce sales in India. Sell-in volume for manufacturing partners was also driven by PGI's "Buyer Seller Meet" trade event, which allows strategic partners to place their orders ahead of the key shopping season.

Such success has expanded to the Middle Eastern market, led by the United Arab Emirates. After introducing platinum to the UAE in 2024, platinum has a distribution presence in 136 stores across the GCC states. As the economies of these countries expand and consumer tastes evolve, there is a growing association between platinum and premium high-quality jewellery, further positioning the metal as the go-to choice for luxury buyers.

Japan's platinum jewellery market stands as one of the most established and influential globally, shaped by decades of consistent performance, premium positioning, and deep cultural significance. Platinum's dominance is especially evident in the bridal segment, where it remains the metal of choice, accounting for 92% of engagement rings and 82% of wedding bands sold last year. Beyond bridal jewellery, the sentiment that "good jewellery is platinum jewellery" is widely embraced by consumers in Japan, rooted in platinum's physical qualities: its ability to securely hold precious stones, its white lustre that enhances gem brilliance, and its lasting durability. In 2024, 34% of platinum pieces sold were priced above JPY 300,000 (approximately $2 000), compared to just 16% across the broader jewellery market.

A consumer survey conducted in April 2025 in the UK demonstrated that 41% of consumers intend to buy platinum jewellery in the near future compared to only 35% for gold. Out of the 200 people surveyed aged between 18 and 65 years old, 22% said they had purchased platinum jewellery recently. Platinum is still considered a "top-notch precious metal" in countries like Germany and the UK, according to PGI CEO Tim Schlick, who believes European consumers are experiencing a "renaissance" of the feeling that platinum is a highly desirable metal.

These findings underscore platinum's enduring appeal as a premium precious metal – one that not only retains its intrinsic value but also carries profound symbolic significance, continuing to resonate with consumers worldwide. Through its strategic market initiatives, PGI has increased the visibility of platinum as an aspirational metal and supported its popularity in key jewellery markets.

How jewellery is putting the spotlight on PGMs

The platinum market is currently undergoing a profound transformation. As jewellery demand grows and platinum's profile continues to rise, the growing visibility of the metal as a desirable, high-end jewellery material will continue to support demand going forward. Platinum is therefore not just an industrial metal, but an essential part of the global consumer market. ■

Lotus Resources delivers first product from Kayelekera and eyes new growth opportunities

With first production of yellowcake from its Kayelekera uranium project in Malawi under its belt, ASX-listed Lotus Resources is now focused on achieving steady state production in the coming months while also focusing on taking its Letlhakane uranium project, in Botswana, up the value curve, Lotus Managing Director Greg Bittar tells *Modern Mining*.

"Kayelekera is a resounding success as our first commercial scale asset, and for Malawi and the host community. We are tremendously excited to be restarting in a strategic window for the uranium market, joining a small number of global uranium producers. Global supply of uranium is well below the current demand by nuclear power plants and the uranium term price, the key indicator for long-term contracts, has increased steadily over the last 3-4 years, with industry analysts predicting further price increases in future."

The miner delivered first product in August 2025, becoming a producer in less than five years since its acquisition of Kayelekera from Paladin Energy in 2020.

Lotus Resources has an 85% equity interest in Kayelekera via its local subsidiary Lotus (Africa), with the remaining 15% held by the Malawi government.

Having produced ~11Mlb of U3O8 from 2009 to 2014, Kayelekera had been on care and maintenance for almost a decade following the Fukushima accident and subsequent decline in uranium prices.

On the back of an improved appetite for uranium as an energy source, Lotus Resources initiated an accelerated restart of the project in October last year, outlining a timeframe of ten months to production. The company completed a positive Restart Study which determined an ore reserve of 23 mlbs U3O8 and demonstrated that Kayelekera could support a viable operation.

The company is targeting steady state production of 2.4 million pounds of U3O8 per year from 2026 onwards for the next seven years.

"We aim to achieve steady state production in quarter one of 2026, reaching levels of about 200 000 lbs per month."

The miner adopted an owner-operator mining strategy in favour of appointing a mining contractor, a strategy selected to deliver synergies:

The tailings storage facility and plant in the mist.

A plaque of the project.

President Lazarus McCarthy Chakwera cutting the ribbon.

"The owner-operator mining model offers enhanced control over mining production and ROM management as well as potential strategic synergies, particularly in relation to ongoing tailings storage facility construction, road maintenance and other cost efficiencies."

Plant upgrades

Discussing plant improvements undertaken ahead of getting the project into production, Bittar explains that as the project had been on care and maintenance for the past decade, the entire plant was fully refurbished, and significant upgrades were made to the packaging and drying area.

"Although we employed the original process flowsheet, we refurbished the SAG mill, leaching, precipitation and elution areas, upgraded the onsite power system and we are rebuilding the acid plant. Initially, the plan is to import sulfuric acid but as it is economically and logistically more convenient to produce our own acid, we will recommission the acid plant in early 2026. The drying and packaging area has undergone substantial changes following the introduction of a calciner to produce a calcined product with reduced moisture content, which makes it more efficient to transport and is a product that is preferred by our customers."

Community upliftment

The restart of the Kayelekera mine contributes to Malawi's growth trajectory, with the project scheduled to employ around 600 people from the host community during steady state production.

"The government of Malawi has been extremely supportive in the process to restart the Kayelekera project, which is the largest and only commercial mining operation in the country. Apart from artisanal mining, a few alluvial gold prospects, and a small thermal coal mine producing around 100 000 tons per annum, Kayelekera is the only significant mine in the country and the only uranium operation in Malawi."

According to Bittar, Kayelekera has the potential to generate national income equivalent to that of the tobacco industry, which until recently was the largest income generating industry for the government.

The Government of Malawi has a 15% stake in the project and a 5% government royalty. The company has also recently signed a community development agreement, allocating 0.45% of Kayelekera's revenue to a Community Steering Committee, who will determine how the funds will benefit the surrounding communities.

"From a long list of identified projects, the community and its leaders determine which projects get the green light. Apart from investing in the development of healthcare facilities including clinics, we have funded upgrades to schools and invested in hiring more than half a dozen teachers."

The Kayelekera plant at night.

Drying and packaging area of the plant.

As part of its programme to upskill its workforce, Lotus Resources is providing training and career opportunities to local community members working at the mine. “We have a terrific team consisting of over 90% Malawian employees.”

In its Restart DFS, Lotus Resources identified the opportunity to reduce power costs and carbon emissions by investing in a connection to Malawi’s electricity grid. Lotus has been working with the Malawian electricity commission, ESCOM, to put this into action. The power from the grid will be sourced from the recently upgraded hydropower facility located in the south of the country.

The investment in the powerline and associated infrastructure will soon allow villages to connect to the powerline, electrifying homes in the local community for the first time.

“Investment in the power line, scheduled for completion before the end of 2026, comes at a cost of some $20 million.”

Offtake agreements

The company inked binding offtake agreements for up to 3.8 m lbs of Kayelekera uranium production from 2026 to 2029. The agreements are for a fixed US dollar price based on the current long-term price, escalated by inflation.

“We signed four contracts: three are with top tier North American power companies, the fourth is with a global uranium trading house called Curzon.”

“Combined, these contracts account for roughly 35% of our production over the next four years – 2026 through to 2029. The contracts, which are based off the recent term price of US$80 lbs, are important because they offer a foothold with key long-term customers and allow us to capture what we think will be an attractive margin given the strengthening outlook for uranium. Aside from the deals signed, we will have sufficient product on-hand to take advantage of improved prices as the market rallies further. Importantly, potential off-takers are keen to secure a portion of the remaining 65% of uranium production and product beyond 2029 which remains uncommitted. Currently there are several North American utilities seeking large quantities of uranium to power their nuclear plants.”

To test the appetite for product from Kayelekera in the spot market, the company sold “a small parcel of uranium in the spot market in early 2025 and received a highly attractive price for its parcel” – indicating robust demand for its product.

Growth strategy beyond Kayelekera

According to Bittar, Kayelekera, the current focus of Lotus Resources’ growth strategy, is the only sizable new source of uranium globally for the next few years.

“Certainly, till the end of the decade, when other projects including large-scale uranium projects in Canada are planned to come online. Until then, Kayelekera is the only meaningful new supplier of uranium. Now that the project is in production, it is on track to unlock significant free cash flow, which will also be used to grow our footprint in Malawi. We look forward to spending exploration dollars, both near mine and within a

Aerial view of the Kayelekera plant.

reasonable radius of Kayelekera."

The miner has several tenements within a 75-to-100-kilometres radius to the south of the existing asset that offer potential for new opportunities. Lotus Resources is currently validating the results from a drill programme executed a few years ago.

"Any material sourced from surrounding tenements will be processed at Kayelekera, adding to its LOM. Cash flow from Kayelekera offers the capital flexibility for growth options for the future. The funds from Kayelekera will also be used for developing our second project - the Letlhakane project – a greenfields uranium project in Botswana. Letlhakane has the potential to become a much larger and a longer life project than Kayelekera," says Bitter.

Letlhakane project

The Letlhakane uranium project in Botswana is earmarked to become a large-scale, long-life uranium operation complementing the Kayelekera mine in Malawi.

An updated Scoping Study completed in March 2025 anticipates an annual uranium production in excess of 3 mlb U3O8 over a 10-year life of mine.

The company is progressing optimisation of operating and capital costs including advancing trade-off studies to minimise mining cost and acid consumption to improve Letlhakane's operating cost.

There are also plans to undertake further infill drilling targeting the conversion of the remaining Inferred Resource into Measured and Indicated Resource categories.

Uranium market developments

The global nuclear renaissance is driving demand for the commodity with strong price forecasts indicative of a robust outlook, which is good news for uranium miners.

The decision by the World Bank to lift its longstanding ban on funding nuclear power projects is set to have profound implications for developing countries' ability to industrialise without burning planet-warming fuels such as coal and oil.

"Demand-supply models show growing deficits in supply relative to demand. Several nations are in the process of developing new nuclear reactors or extending the life of existing nuclear power plants. Moreover, more countries are embracing nuclear technology as a baseload power source," says Bittar.

US President, Donald Trump, recently signed four executive orders to scale US nuclear energy to "re-establish the United States as the global leader in nuclear energy," including a 2050 target of 400 GW (up from 100 GW currently).

"China has long been pursuing nuclear power to supplement its power requirements and currently has more than 30 reactors under construction. The UK is engaged in the construction of two new nuclear reactors, while the US is also injecting new life into old mothballed nuclear reactors."

Uranium supply and demand projections illustrate a growing gap between the two, with demand expected to outpace supply in the coming years. While sufficient uranium resources exist currently, increased investment in exploration, production, and infrastructure is needed to meet rising global nuclear energy needs. ■

New reactors under construction in China

- China's State Council has approved 10 new reactors. It's the fourth year in a row that China has approved at least 10 new reactors. The nation has 32 new nuclear reactors under construction, almost half of the global total. The units, each with a capacity of around 1.2 GW, feature Chinese-built reactors, either the Hualong One or the CAP-1000 reactor.
- "According to the World Nuclear Association, there are 69 reactors currently under construction. This number changes frequently and can be tracked on https://world-nuclear.org/information-library/current-and-future-generation/nuclear-power-in-the-world-today). Each month there are new announcements about reactor construction starts," says Bittar.

Thor Explorations: Driving transformation in West African mining

Africa's mining landscape is undergoing a dynamic transformation, shaped by rising global demand for critical minerals, increased investment, and improved regulatory frameworks. However, while the continent continues to attract international interest for its vast untapped mineral wealth, it also grapples with structural and socioeconomic challenges surrounding infrastructure, remaining regulatory uncertainty, and governance.

Haulage trucks at work in the pit at the Segilola project.

Against this backdrop, a new generation of mining companies have emerged, adopting more responsible, sustainable development models to unlock long-term value while creating meaningful socioeconomic impact. Thor Explorations, a West Africa-focused gold producer dual-listed on the London AIM market and the TSX Venture Exchange (TSX-V), stands at the forefront of this shift.

A new Eera of responsible mining

Thor Explorations has distinguished itself as a leader in sustainable mining in West Africa. The company's flagship asset, the Segilola Gold Project, is Nigeria's first commercial gold mine and a model for high-grade, modern, and environmentally responsible mining in the region. As well as actively exploring to extend the life of mine at Segilola, the company is also advancing exploration programmes across Senegal and Côte d'Ivoire, with a key focus on the Douta Project, which represents the company's next phase of growth. Through this strategic presence across multiple jurisdictions and commitment to responsible development, Thor's pipeline of regional exploration initiatives is designed to further diversify and scale its West African portfolio.

The strategic importance of Segilola

Thor's Segilola Gold Mine holds the unique distinction of being Nigeria's first and currently only modern, large-scale commercial gold mine. After completing construction in late 2021, Segilola commenced full-scale commercial production in 2022, marking a significant milestone not just for Thor, but also for the country's mining sector at large.

For decades, Nigeria was viewed as a resource-rich country with significant mining potential, overshadowed by its oil and gas sector. However, Segilola's success has played a pivotal role in shifting these antiquated perceptions of Nigeria, from a well-resourced but underdeveloped mining jurisdiction to a country which is taking steps towards establishing itself in the global gold production landscape. As a high-grade, open-pit operation, Segilola has produced an average of 89,224 ounces of gold in its first three years of production. Furthermore, recent operational results

Aerial view of The Segilola Water Storage Dam.

released in July 2025 underscore the mine's ongoing success, with the company celebrating a record quarterly revenue of $82.5 million underpinned by a booming gold price, and consistent gold production and sales in Nigeria.

Segilola serves as the company's core proven producing asset and the primary driver of its cash flow, therefore the company is actively advancing exploration drilling to extend the life of mine and unlock the asset's full potential. Recent drill results have revealed multiple promising high-grade intercepts, pointing to the possibility of further deposits and additional shoots and extensions to the existing ore body. This focus on exploration underscores the strategic importance of Segilola in strengthening the company's trajectory for sustained revenue growth.

Beyond Nigeria: Thor's West African growth pipeline

While Segilola remains the company's primary producing asset, its ambitions extend beyond this project. By strategically leveraging the cash flow generated from its Nigerian operations, Thor is funding a robust pipeline of exploration and development projects across West Africa, aimed at transitioning into a multi-asset, multi-jurisdictional gold producer.

A key component of this expansion strategy is the Douta Gold Project in Senegal, positioned as Thor's next producing asset and major growth catalyst. Douta represents a substantial growth opportunity, having demonstrated a global resource of 1.78 million ounces of gold, and additional early-stage drilling results released in March 2025 have also been highly encouraging, with assays confirming strong grades including 19 metres at 2.46g/t Au from 29 metres. The company is working towards a Preliminary Feasibility Study (PFS) at Douta, with the aim of advancing the project into production in the near term.

In addition to Douta and Segilola, Thor has also expanded operations into Côte d'Ivoire, acquiring a portfolio of exploration licences in the 100%-owned Guitry project, where a maiden drilling campaign returned promising results, including 10 metres at 10.36 g/t gold from 57 metres and 3 metres at 14.50 g/t gold from 82 metres. In Nigeria, a 2025 exploration campaign is targeting a 10km by 5km area of gold anomalism approximately 52km south of Segilola, with standout results to date including 1.8 metres at 39.7 g/t gold from 222 metres depth. These promising grades further illustrate Thor's commitment to evolving into a multi-asset, multi-country, diverse West African gold producer, positioning the company well for continued growth in the region.

How Thor is redefining West Africa's mining sector

Thor Explorations is more than just a successful gold producer; it is also helping to redefine the broader West African mining narrative. By developing Segilola to full-scale production, Thor has demonstrated that large-scale, commercial gold mining is not only feasible in Nigeria but also profitable and sustainable, and this is reflected in the impressive financial results afforded by the company's operational success. Over the past year, Thor's share price has nearly tripled, reflecting strong market confidence in its strategy and execution. Furthermore, Thor's commitment to profitability is underscored by its status as a dividend-paying company, reinforcing its dedication to delivering long-term value to shareholders. This success has helped mitigate perceived risks, making the region more attractive to investors, and allowed the project to serve as a blueprint for other companies seeking to enter the West African mining sector.

Crucially, Thor is also setting benchmarks for environmental, social, and governance (ESG) standards across West Africa by embedding these principles into its core operations. The company has made a strong commitment to sustainable mining practices, focusing on robust environmental management and biodiversity protection. Thor actively engages with local communities through employment programmes and capacity-building initiatives, ensuring that host communities benefit from its operations. Additionally, the company upholds high ethical standards, with strict anti-corruption measures and adherence to international best practices. In contrast to regions in West Africa that have faced challenges such as resource nationalism and operational delays, Thor provides a compelling counter-narrative, proving that large-scale projects can thrive and deliver significant economic benefits.

A turning point for African mining

Thor Explorations' remarkable story, from pioneering Nigeria's first commercial gold mine to expanding its growth pipeline across Senegal and Côte d'Ivoire, marks a significant turning point in the evolution of West African mining. The successful development of Segilola marks a pivotal moment in Nigeria's economic diversification, while its continued success highlights the region's growing prominence in the global gold and critical minerals markets.

The company's strategic growth pipeline, including advancing the Douta Gold Project in Senegal and early-stage exploration in Côte d'Ivoire, illustrates its commitment to becoming a diversified, multi-asset gold producer. By reinvesting the cash flow from Segilola into regional exploration and development, Thor is not only scaling its operations but also creating value for investors, communities, and the broader regional economy.

For shareholders, this strategy has delivered substantial returns, with Thor's share price tripling over the past year and the company establishing itself as a reliable dividend payer. Looking ahead, the company is well-positioned to continue driving growth, creating value, and playing a transformative role in the West African mining landscape. As the demand for gold continues to rise globally, Thor stands out as a company that is both prepared for the future and actively shaping it. ■

Companies are mining their tailings storage facilities to convert waste into marketable commodities – and mitigating environmental risk in the process.

Unlocking revenue potential buried in mining TSFs, dump yards, and factories

By Samir Damag: Global Lead for Mining in the Mill Products and Mining Industry Business Unit at SAP SE

Samir Damag is the Global Lead for Mining in the Mill Products and Mining Industry Business Unit at SAP SE.

Recovering valuable resources from waste and discarded materials has become big business. Just ask Pan African Resources, whose new state-of-the-art Mogale tailings retreatment plant in the West Rand region of South Africa, near Krugersdorp, is expected to produce 50 000 to 60 000 ounces of gold annually, accounting for about 25% of the company's overall gold production. With that level of output, it's no wonder PAR moved so quickly to commission the facility last October, months ahead of schedule.

The Mogale facility, along with two additional PAR tailings retreatment operations in South Africa, are among numerous reclamation, reprocessing, and recovery projects around the globe that highlight a paradigm shift in mining and other industries, whereby yesterday's waste has become today's valuable resource. Thanks to advances in technology, techniques and processes, intrepid companies are turning mining waste and other discarded, overlooked and undervalued materials into valuable commodities on a large scale and doing so profitably. And in the process, they're not just creating new revenue streams for themselves, they're mitigating the significant environmental risk associated with managing waste, while also building their sustainability credentials and gaining a foothold in the emerging Circular Economy.

Recent policy developments are creating more opportunities for companies to pursue these kinds of projects. In South Africa, for example, pending regulatory amendments would reclassify some tailings storage facilities (TSFs) as a resource rather than waste, opening the door for more waste retreatment projects. Likewise, regulations that took hold this summer in Ontario, Canada, create a new mineral recovery permit for extraction of residual minerals from tailings and other mine waste at existing or abandoned mine sites.

Now, regulatory policies like these are aligning with environmental requirements, scarcity-driven market dynamics, geopolitical developments like

tariffs, and advances in intelligent technologies to create a viable new business model I'll call Urban Mining 2.0 (although it doesn't necessarily require an urban setting) that is rooted in extracting value from our discarded past. In this emerging model, places like landfills, dump-yards and TSFs become a newfound source of value and the workers there essentially become tech-enabled miners. Let's take a closer look at some of the most compelling opportunities that mining companies, dump-yard and landfill owners and operators, and others could (and perhaps should) be exploring, along with the processes and technologies that can help them capitalise on these opportunities.

TSFs and other mining waste

As some forward-thinking mining companies are discovering, mining waste — debris, discard, residues, tailings, slimes, slurry, etc. — that was previously viewed as worthless and a liability now can be rescreened and retreated to cost-effectively capture minerals and byproducts that can be sold to create new revenue streams for mining companies. For example, Sylvania Platinum and Limberg Chrome Mine are developing the Thaba Chrome Ore and PGM Treatment Joint Venture, a facility on the eastern and western limbs of the Bushveld Igneous Complex in South Africa to recover chromite and concentrates of platinum group metals from run-of-mine ores and historical tailings. Due to launch sometime in 2025, the project, according to Sylvania, is cash-generative and low-cost to operate.

Not only do these projects produce revenue, they take a liability off the books by cleaning up mine waste sites, while also helping companies meet applicable waste management regulations, achieve ESG targets, and position themselves as leaders in sustainability.

Buried treasure in landfills and dump yards

Due to tariff and trade policies, environmental requirements and other factors, resource self-sufficiency and ready access to increasingly scarce (and recyclable) materials have taken on new importance. The world is full of dump yards and landfills where discarded materials — post-consumer, industrial, etc. — with newfound value have been sitting for years, even decades, especially in facilities that didn't (or still don't) use a sorting a process. That could include rare-earth minerals, copper, steel and other materials. Using intelligent mapping and detection tools (more about those in a moment), the owners of these facilities can begin mining them for materials of value, knowing that the reclaimed/retreated material they unearth may have more value than virgin material in certain markets because of regulations that elevate the value of "green" products that contain a certain percentage of non-virgin, recycled materials, such as steel or plastic. This type of "neighborhood circularity" can put previously discarded materials back into circulation.

The real estate on which a landfill or dump yard sits also holds potential value once it has been purged of certain toxic or dangerous materials. There's an opportunity for the owners of these facilities to team up with recycling and clean-up companies to assess the value of materials on-site and capture materials in the clean-up process. Then, once the site is deemed "clean," that real estate becomes a valuable, saleable commodity.

Waste at the manufacturing plant

Urban Mining 2.0 also touches the manufacturing world, where

Dump yards and landfills are rife with discarded materials like copper that can be readily reclaimed and turned into revenue.

waste from the production of a material such as steel can be turned into a valuable commodity. Sun Metalon, a U.S.-based start-up, has developed zero-CO_2 technology that transforms contaminated, low-value swarf, sludge, chips, turnings and other waste that likely otherwise would be destined for a landfill into high-value copper, steel, aluminum and nickel briquettes — and does so right at the manufacturing site, converting, for example, polishing sludge produced in manufacturing stainless steel, specialty irons, and other metals. Nippon Steel, the Japan Bank for International Cooperation, Airbus Ventures, and the Shimadzu Future Innovation Fund (managed by Global Brain Corp.) are among the company's investors. Numerous other companies are developing similar kinds of processes to capture value from manufacturing waste.

Technology makes Urban Mining 2.0 pursuits like this not just possible but potentially highly profitable. Artificial intelligence-driven image-recognition and screening systems make it possible to identify, pinpoint and recover previously inaccessible materials and minerals from mine waste, dump sites and landfills. AI analytics tools can also help mining companies evaluate old TSF and mining sites and identify those whose waste can be most readily and profitably turned into materials of value. And in an Indiana Jones-like twist, intelligent capabilities could also be used to comb through old historic documents to find locations of long forgotten dump yards that might hold materials of value. These same capabilities might even help someone find the controversial Holy Grail of Bitcoin, a mistakenly discarded computer hard drive that supposedly still lies buried in a Welch landfill, and with it, a blockchain key that could unlock cryptocurrency valued at hundreds of millions of British pounds.

Fortunately, mining companies and other businesses don't have to find the proverbial needle in the haystack to capitalise on the opportunities that are emerging with Urban Mining 2.0. ■

Infrastructure growth **is key to Africa's mining resurgence**

A confluence of dynamic developments in society and the global economy gives the African mining sector several exciting opportunities. However, a significant bottleneck remains in the continent's infrastructure gap.

Sameh Shenouda Executive Director & Chief Investment Officer AFC.

Key players are working to unlock this brake on growth, finding ways to better connect Africa through its road, rail, energy and digital corridors, so that its mining sector can truly thrive.

Investing in African Mining Indaba 2026 is placing infrastructure at the heart of its agenda, recognising it as the backbone of mining progress and continental transformation. With the theme "Stronger Together: Progress Through Partnerships," MI26 will convene governments, capital owners, and industry leaders to forge the connections — physical and strategic — Africa needs to unlock its full mining potential.

"Infrastructure is the engine of transformation," says Zeinab El-Sayed, head of government partnerships for Investing in African Mining Indaba. "African mining stakeholders are stronger together, but building integration requires roads, rail, communication, energy networks and air links."

El-Sayed says infrastructure enables progress, allowing governments, the mining sector, communities and civil society to work together for the upliftment of the continent.

Reliable transport and energy networks are essential for new mining projects.

Trends coalesce

Significant global trends have also emerged that show a massive upside for the African mining industry. These include the growing importance of critical minerals vital for new technology, the global Just Energy Transition and industrial development on the continent.

In addition, as global demand for strategic minerals grows, downstream manufacturers are building closer relationships with miners and refiners. There is also increasing acceptance of the need to transform Africa from a raw-material exporter into a hub of innovative manufacturing.

Infrastructure gaps

However, enabling the transformation heralded by these exciting trends requires infrastructure.

Laura Nicholson, content and communities director for Investing in African Mining Indaba, says that while Africa's mining resources can meet many emerging global needs, it is infrastructure that gets them to market.

"Infrastructure is one of the cornerstones of a thriving African mining sector," says Nicholson. "Reliable transport and energy networks are essential for new mining projects, and strategic investment in infrastructure can transform Africa from a raw material exporter into a dynamic centre for innovation, manufacturing, and long-term growth."

There remains a significant shortfall in the infrastructure required to enable this kind of transformation.

A recent report by Africa Finance Corporation notes that Africa's road density remains low by global standards, averaging just 2.76km per 100km^2, compared with 138km per 100km^2 in India.

Approximately 90% of the continent's railways remain publicly owned and constrained by limited investment capacity. Integration only exists in the SADC network;15% of Africa's rail network is non-operational; and 13 countries lack direct rail connections to the sea.

Funding the build

A significant cause for optimism is that the financial resources to close Africa's infrastructure gap are available on the continent. A report by Africa Finance Corporation, titled State of Africa's Infrastructure 2025: Mobilising Domestic Capital, indicates that capital is not the main issue, it's coordination.

The report says trillions in capital for new projects could be sourced within the continent's own institutional savings pools. Innovative financial partnerships can powerfully unlock Africa's wealth for its own development.

The report estimates that Africa holds more than $4 trillion in institutional savings – including banked savings, pension funds, insurance assets, sovereign

Innovative financial partnerships can powerfully unlock Africa's wealth for its own development.

wealth funds and public development funds. These represent an untapped source of investment that can help drive infrastructure development. The report notes that these domestic-capital assets remain heavily concentrated in low-risk, short-term assets, mainly government securities and money markets. This risk-averse approach crowds out investment in other areas.

"Africa's most strategic pool of long-term capital is not being put to work in support of its long-term transformation," says Dr Rita Babihuga-Nsanze, one of the authors of the report. "This is due to a combination of regulator restrictions, shallow markets, capacity constraints and institutional governance models."

Commenting on the report, former Kenya central bank governor Patrick Njoroge says African infrastructure projects were sometimes perceived as risky investments, but that the data does not bear this out. He says Moody's Analytics AfDB reports show Africa's continental infrastructure default rate is the lowest in the world, at only 1.9%, while Western Europe and Asia stand at 4.6%, North America at 6.6%, and Eastern Europe at 12.4%.

"Pension funds need to realise that recovery rates for infrastructure debt are often better than corporate debt," says Njoroge.

AFC president Samaila Zubairu says the report confirms that in Africa, capital to meet its infrastructure needs is available, but that the only challenge is mobilising it.

"The problem is not absence of capital, but fragmentation and risk aversion," he says. "We need to build aggregation platforms that syndicate institutional investors, commercial banks and sovereign funds, to mobilise at scale."

The growing recognition that infrastructure investment is key to unlocking Africa's mining opportunity has seen AFC return as a strategic partner for Investing in African Mining Indaba 2026.

"The approach of Investing in African Mining Indaba 2026 aligns perfectly with the AFC narrative that regional integration can drive a step change in the continent's development," says Nicholson. "Infrastructure and capital mobilisation are core to what we stand for, and to achieving progress for our industry and our continent."

Investing in African Mining Indaba 2026 is a crucial platform for shaping the future of mining on the African continent. It brings together governments, asset owners and industry leaders to turn insights into action. The event takes place from February 9 – 12, 2026 at the CTICC, Cape Town. ■

Is the South African mining industry being throttled by **over-regulation and new legislation?**

The South African mining industry has always, to varying degrees, been regulated by a framework of laws addressing key elements of the mining lifecycle such as prospecting, mining, environmental, water, emissions, land use, and post – closure commitments. However, this legal framework is becoming more complex, and navigating the ever-changing legal framework and, most importantly, complying with the requirements of the legal framework, has become extremely challenging.

Warren Beech, CEO of Beech Veltman.

While many countries with mineral resources in Africa have updated legislation, but retained a less complex legal framework, South Africa is on an accelerated path to becoming one of the most complex mining jurisdictions, impacting on investment, compliance, growth, development, and transformation.

In addition to the regular and routine amendments to environmental laws, such as waste and dust, there are numerous proposed or imminent changes to the mining, health, safety and environmental legislation that have far – reaching consequences.

These changes include significant changes to the Mine Health and Safety Act (MHSA) which are anticipated to be introduced in Parliament soon, proposed amendment to the Mineral and Petroleum Resources Development Act (MPRDA) and, under the Carbon Tax Act (Carbon Tax Act) there is the proposed Draft Technical Guidelines for the National Greenhouse Gas Carbon Budget and Mitigation Plan Regulations (Draft Technical Guideline) and the Draft Technical Guidelines for the National Greenhouse Gas Carbon Budget and Mitigation Plan Regulations (Draft Regulations), both of which are currently open for public comment until 30 September 2025. Collectively, the changes will introduce stringent compliance requirements, enhanced enforcement powers and increased penalties for non – compliance. There is also the impact of carbon tax based on the implementation of the first commitment period starting in January 2026 under the Carbon Tax Act and the Draft Regulations (which will have to be promulgated before the end of 2025).

The amendments to the MHSA will include material changes regarding training to be provided to employees, significantly enhanced powers and functions of the Mine Health and Safety Inspectorate to enforce the provisions of the MHSA, and to issue "blanket instructions" which may address health and safety "beyond the mine fence", and increased penalties that could include fines of up to 10% of a mining company's turnover in the preceding year or the value of exports, whichever is higher.

The proposed changes to the MPRDA include increased penalties (also based on percentage of turnover), increased criminal sanctions, regularisation of artisanal and small-scale mining, beneficiation responsibilities and requirements, and

Mining companies must allocate appropriate resources (people and money) to ensure that the compliance requirements are met.

enhanced consultation and engagement requirements.

While the Draft Regulations are intended to give effect to the requirements of the Carbon Tax Act, the Draft Regulations and Draft Technical Guideline raise more questions than giving answers, around key aspects such as the calculation of a data provider's emissions, the way in which carbon budgets will be allocated, and compliance requirements in the various commitment periods.

This new legislation, together with changes to key aspects of the mining and environmental legislation over the past two to three years, will significantly increase the complexity of the legal framework, and this will require mining companies to adopt a new approach, or risk non – compliance, and the consequences that flow from this. The new strategy must include a multi-disciplinary approach to compliance which acknowledges that perspectives add value and provide novel, practical, implementable solutions. Buy-in from key stakeholders such as the recognised trade unions, communities, regulators, service providers and employees is vital to achieving, and just as importantly, maintaining, a complaint operation.

> South Africa is on an accelerated path to becoming one of the most complex mining jurisdictions, impacting on investment, compliance, growth, development, and transformation.

Additionally, unless mining companies allocate appropriate resources (people and money) to identifying compliance requirements and ensuring that the compliance requirements are met, enforcement action is likely to follow, which can result in stoppages of operations, suspension or revocation of prospecting and mining licences, and even asset forfeiture where mining is regarded as illegal.

The legal framework, and compliance, is made even more complex by the regular judgments of the South African courts and, in relation to employment aspects, the Commission for Conciliation, Mediation and Arbitration and the Labour Court, which interpret and apply the relevant laws that apply to the mining and natural resources industry.

The statutory duty of care which was introduced by Section 28 of the National Environmental Management Act (NEMA) has been the subject of various judgments of the South African courts, and the scope of the "duty of care" is being extended through these various judgments, together with what is regarded as sufficient to meet the requirements. The duty of care applies broadly and incudes government. In the recent judgment (14 July 2025) of

South Africa is on an accelerated path to becoming one of the most complex mining jurisdictions.

There are numerous proposed or imminent changes to the mining, health, safety and environmental legislation that have far – reaching consequences

the High Court of South Africa, Gauteng Division, Pretoria, in the matter between Petrus Johannes Barnard & Others v The Minister of Environmental Affairs & Others (Barnard Judgment) the court had to address a claim for damages by Barnard & Others (Plaintiffs) which allegedly arose from the government's contamination of irrigation dams while conducting eradication of alien vegetation on the Plaintiff's farm.

While determining whether the Plaintiff's would succeed with their delictual claim for damages, the court had to canvas the "duty of care". The court concluded that "... the plaintiffs were owed a duty of care which is grounded in Section 24 of the Constitution", and that "... the above Constitutional right is supported by a raft of legislative provisions, primary amongst them which is the NEMA. As articulated by the SCA in Global Environmental Trust & Others v Tendele Coal Mining & Others: "both the MPRDA and NEMA are statutes that give effect to the right to have the environment protected for the benefit of present and future generations, enshrined in s 24 of the Constitution. It is a settled principle that courts are required to interpret statutes purposefully, in conformity with the Constitution and in a manner that gives effect to the rights in the Bill of Rights". The court also emphasised that the defendant (the Minister) cannot contract out of its constitutional or statutory obligations and the Minister and the relevant Departments failed in the performance of the roles and responsibilities.

A range of consequences can flow from non-compliance with the "duty of care". This includes private prosecution. The NEMA makes specific provision for private prosecution and establishes lesser requirements that must be met, for a private prosecutor to initiate prosecution under NEMA. The judgment of the High Court, Gauteng Division, Pretoria, on 1 April 2019 in the matter of Uzani Environmental Advocacy and BP Southern Africa was groundbreaking in several respects, primarily because it resulted in the private prosecution of BP. The court confirmed that private prosecutors can step into the gap created by a failure of the Director of Public Prosecutions to prosecute applicants that have submitted applications in terms of Section 24G of NEMA.

In addition to criminal prosecution and potential claims for damages, consequences include:

- **Reputational risk –** often when the "duty of care" has not been complied with this can result in an impact on a company's reputation and its relationships with key stakeholders such as the regulators, communities, trade unions, employees, investors and other business partners;
- **Media and publicity –** non-compliance often results in unwanted media attention (particularly on social media) which plays into the reputational consequences referred to above. Adverse publicity also often leads to intervention by stakeholders such as the regulators, trade unions, non-governmental organisations, etc.;
- **Disruption to operations –** issuing of instructions and directives. NEMA, National Environmental Management: Waste Act (NEM:WA) and the National Water Act provide for the issuing of instructions and directives;
- **Criminal prosecution –** NEM:WA, NEMA and the National Water Act all provide that non-compliance with the responsibilities under the relevant legislation and/or any terms and conditions of a licence/authorisation is a criminal offence, and a range of persons can be prosecuted including the company, its directors and officers, environmental and relate advisors, and any persons who have actually cause or may cause pollution;
- **Consequences in respect of mining rights,** environmental authorisations and other licences. The MPRDA requires the holder of a relevant right to comply with the provisions of the MPRDA, the terms and conditions of the relevant right, and all other legislation such as NEM:WA, NEMA, the National Water Act, the MHSA etc. Non-compliance could result in the suspension or revocation of a relevant right;
- **Delictual damages –** as mentioned above, the Barnard Judgment specifically addressed delictual damages arising out of a breach of the "duty of care".

The various aspects addressed above, demonstrate clearly that carrying out mining and prospecting operations in South Africa is not easy, and investors must ensure that they have a proper understanding of the complexities so that appropriate decisions can be made, and stakeholder expectations can be managed. ■

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Weir develops full house **of crushing & screening solutions**

The past 15 years have seen Weir develop a leading position in the global comminution space, now boasting a comprehensive offering for crushing and screening that boasts some of the largest equipment and components available.

JD Singleton, Weir's Comminution Director for Europe, Middle East and Africa (EMEA).

Weir has introduced their ENDURON® screen media panels into the African market giving customers a full screen solution from their local service centre.

These developments have been the driving force behind the current construction of a mega production bay for large screens in the company's Alrode facility south of Johannesburg, according to JD Singleton, Weir's Comminution Director for Europe, Middle East and Africa (EMEA).

"Our journey in the last decade and a half has seen Weir develop world class capabilities from high pressure grinding rolls (HPGRs), jaw crushers and cone crushers through to vibrating screens, feeders and screen media," says Singleton. "We have evolved significantly from our original focus on pumping solutions - starting with the acquisition of the LINATEX screen range in 2010, followed by the parallel development of HPGRs. This was further expanded through the introduction of crushers, and most recently, the addition of in-house ENDURON screen panels to our offering."

The expanded Alrode facility will soon produce its first large ENDURON® Elite double-deck banana screens - measuring 4,3 m by 8.5 m and weighing up to 50 tonnes. These will contribute to fulfilling the R1.28 billion contract to provide Barrick's Reko Diq's copper-gold project in Pakistan with a transformational flowsheet solution that also includes ENDURON® HPGRs.

"There has been exciting uptake of our high quality ENDURON screen range and we will also soon be supplying all screens to a large brownfields mining project in Zambia," he says. "Large vibrating screens are vital to complement large capacity crushing plants and HPGR circuits and our ENDURON Elite range is playing an important role in hard rock mining developments throughout Africa."

He highlights the rising cost of electricity - not just in South Africa but elsewhere - leading many mines to look at HPGRs as an energy efficient alternative to semi-autogenous grinding (SAG) mills. Trade-off studies today are comparing the combination of primary crusher, SAG and ball mill with the increasingly attractive alternative of a primary crusher, secondary cone crusher, HPGR, screen and ball mill, he says.

> The expanded Alrode facility will soon produce its first large ENDURON® Elite double-deck banana screens - measuring 4,3 m by 8.5 m and weighing up to 50 tonnes.

"To complement our market leading ENDURON HPGR, we designed and developed our ENDURON Elite screen range and have just introduced our next-generation ENDURON cone and jaw crushers," he explains. "We have therefore raised our comminution range to the same premium level as our HPGRs, giving customers access to a selection of primary crushers, secondary crushers, HPGRs and screens from the same respected ENDURON brand."

It was 2019 when the company launched its first large double-deck screen to accompany its ENDURON® HPGR into a West African iron ore mine. Developing a screen to match this HPGR was an important development, Singleton notes, as Weir has won over half of the world's HPGR-related projects over the past five years. At the

same time, it developed its LTX exciter to generate the considerable ≈1 mega newton force to vibrate these screens.

Weir has since gone on to develop its second-generation exciter – the ETX. Weir's ENDURON® Elite ETX exciter is a groundbreaking advancement in vibratory screening technology, delivering the world's only "mega" newton linear motion exciter capable of generating forces equivalent to a fully laden A380 on take-off, 12 to 16 times per second. This patented innovation redefines a 50-year-old mechanism, setting a new global benchmark in performance, reliability and efficiency.

As a leading technology engineering company for over 150 years, Weir also incorporates the latest materials and components to enhance the quality, performance and reliability of these solutions, he points out. For instance, all ENDURON® jaw and cone crushers – which have considerably improved control and lubrication systems – now also come standard with ESCO® crusher liners, the premier crusher liner in the market.

"Weir invests heavily in research and development, and this includes advancing the materials we use and how we apply them," says Singleton. "Our technological progress relates, for instance, to the metallurgy of our wear liners, their manganese content and their shape to suit our various models of crushing equipment."

Another recent addition to the range has been the in-house produced ENDURON® screen panels, which are designed for Weir's equipment but can also be fitted on any equipment with a one-foot panel arrangement.

"Our screen panel offering holds plenty of convenience and cost benefits for the market, and we have had six customers around Africa changing over to our screen panels this year already," he says. "The market is enthusiastic about alternatives that will give them more uptime and lower their cost per tonne, so we are proud to have again stepped up to serve this need."

Working with mining customers from early in the project development cycle has become an important aspect of meeting sustainability

Weir recently launched the ENDURON® Orbital circular motion screens for smaller tonnage mining in aggregate and sand applications.

goals, he notes. Weir can help customers at scoping stage to quantify options for energy savings and the reduction of carbon emissions – alongside the necessary performance imperatives.

"It is becoming the norm for international financiers to ask applicants about the anticipated carbon footprint of their planned projects," he says. "We work with customers at early planning stages to assess the potential improvements in energy consumption they can achieve with technology like HPGRs. Due to our growing installed HPGR base, we can be confident of the accuracy of our estimations and predictions."

The performance of equipment in various conditions is tracked and assessed, providing valuable data for the planning of new projects – which are increasingly prioritising their sustainability goals.

"Another key consideration, of course, is the support that customers expect for their operational assets and Weir's extensive global footprint places us within 200 km of any large mine anywhere in the world," says Singleton. "This allows us to ensure a high level of aftermarket service and support in close proximity to customer sites – providing the market with an unmatched value proposition."

He emphasises that the market continues to value the Weir service culture, where trained service engineers are readily available when customers need them – to maintain and improve their uptime through close partnerships. The value is based on the depth of understanding that Weir brings to the performance of customers' equipment, and what each item of equipment should be contributing to on-mine productivity.

"Customers have confidence in our knowledge of the technical elements involved in optimising their process performance – from feed size, closed-side settings and reduction ratios to screen panel apertures and the overall balancing of the circuit," he says. "As specialists in our equipment, they look to us to help achieve optimal value from their assets." ■

Easing the crushing and screening cost burden

With the recent launch of its fully electric Powertrac range of mobile crushers and screens from SRHeavy (SRH), Athos Crushing & Screening is unlocking significant cost gains for local contractors – both in terms of capital costs and cost of operation.

The Powertrack PT Pro C-20E mobile cone crusher combines mobility, efficiency and low operating costs.

In July 2025, Athos Crushing and Screening, a sister company to Pilot Crushtec International, marked a truly new era in the southern African crushing and screening industry by unveiling its fully electric range of mobile crushers and screens.

The first three units to arrive are the Powertrack PT Pro J-11E mobile jaw crusher, the Powertrack PT Pro C-20E mobile cone crusher and the Powertrack PT Pro ST-08E mobile triple-deck screen. The Powertrack PT Pro SP-08E mobile scalping screen is also immediately available for the local market. While these machines have dual-power versions, Athos Crushing and Screening is initially bringing fully electric units only.

Going fully electric, Sales and Marketing Director Francois Marais says, inaugurates a new epoch in the local crushing and screening market. Speaking to Modern Mining, he says that while dual-powered machines have already gained significant traction in the past few years, the e-Power Powertrack offering is probably the first fully electric range to be commercially available in southern Africa, marking a major turning point in the region.

Competitive capital cost

One of the major reasons for going fully electric, confirms Marais, is to unlock significant cost benefits for local contractors. From the onset, the e-Power Powertrack range comes at a significantly competitive price point than comparable diesel units. This is a complete departure from the global notion that fully electric units require a higher initial investment, although they are known to offset that quickly through savings on diesel fuel and maintenance.

"One of the major cost benefits comes from the fact that these machines come at a competitive price point. With the absence of a costly diesel engine alone, we are already looking at a capital saving of 30 to 40% compared with comparable diesel-powered counterparts, which is a significant reduction to the upfront capital outlay. In such a challenging market, this gives local contractors the edge to price jobs competitively and secure contracts by attracting clients with cost effective bids," Marais says.

Central to the range's cost competitiveness, adds Marais, is the fact that the machines are manufactured in China, inarguably the global leader in the electric revolution. The economies of scale in China, especially for electric components such as electric drives, provides for a notable cost advantage, making the e-Power Powertrack range an attractive crushing and screening solution for the local market, particularly for cost sensitive entry-level contractors.

Lower operational costs

Another leg of the cost reduction regime is driven by the fact that these fully electric mobile crushers eliminate costly diesel

The Powertrack PT Pro ST-08E mobile triple-deck screen is designed for versatility and delivers reliable performance while cutting out diesel costs.

fuel expenses. The biggest cost benefit can be realised where operators have access to grid electricity, which is significantly cheaper than running on diesel.

"Based on our own calculations, we expect operators to realise a 40 to 50% cost benefit by running these machines on grid electricity versus diesel," says Marais. "That is a huge competitive advantage for those who decide to go this route. While the industry may be already familiar with the cost competitiveness of running static plants on grid electricity, the e-Power range offers the best of both of worlds - the benefit of saving on power costs and the mobility and flexibility associated with mobile machinery."

Reduced maintenance costs

Another cost advantage of the e-Power Powertrack range stems from the reduced maintenance requirements due to the absence of a diesel engine. Jorge Abelho, Technical Support Director at Athos Crushing and Screening, says electric motors by their nature have far fewer moving parts than their diesel counterparts, thus reducing the need for frequent servicing, oil changes and replacement of components such as filters.

"The simple nature of these machines makes fault finding and maintenance easy, thus maximising uptime. It also means that there are no specialised skills required to look after the machines. Existing technicians who have worked on static plants will easily service these machines," Abelho says.

Marais agrees, saying that simplicity plays a huge role, especially in an environment where there is a marked shortage for adequately trained and experienced technicians. "We have been in this game for 35 years and we are well aware that skills are a challenge, especially when it comes to the management and maintenance of mobile crushers and screens. It is generally difficult to find technically capable resources. The simpler the operation, maintenance and management of these machines are, the more practical these solutions are for our customers," Marais says.

Eliminating the need for diesel fuel handling on site, adds

The Powertrack PT Pro ST-08E triple-deck screen brings high-capacity material separation with the advantages of a fully electric drive.

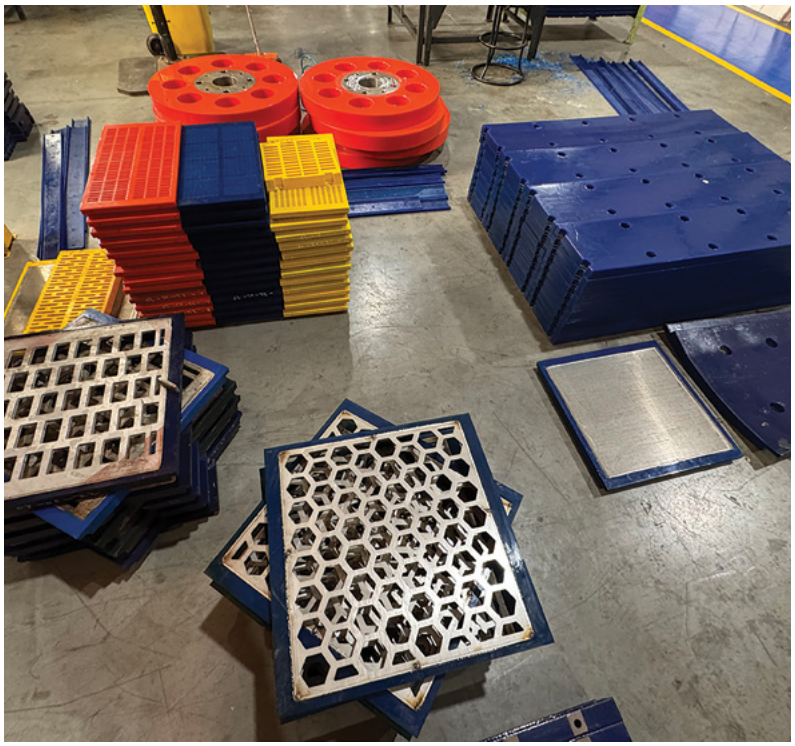
Abelho, also eliminates logistics costs related to that task and the risk of hazardous spills. When running diesel-powered machinery, especially on remote sites, operators generally need to keep large volumes of diesel. Managing large volumes of diesel, Abelho says, poses significant hurdles due to the risk of contamination. Diesel theft is yet another challenge to contend with, especially in remote operating environments.

Apart from the cost gains, going fully electric, Marais says, has the obvious benefit of reducing carbon emissions, which contributes to more sustainable material processing operations in the mining and quarrying industries.

"While sustainability is a big driver, particularly in the mining environment, we believe that the primary benefit for our customers is easing of the cost burden. This allows contractors to remain competitive, enhance profitability and ensure sustainability by lowering major expenses such as capital costs, fuel and maintenance," Marais concludes. ■

Screening smarter: **FLS's low-stress trommel and nexgen panels raise the bar**

In today's mining landscape, productivity and uptime are non-negotiable, and the pressure on plant equipment is unrelenting. Yet, achieving consistent throughput doesn't have to come at the cost of high maintenance, safety risks or premature wear. Responding to these industry imperatives, FLS developed a range of advanced screening solutions that bring structural integrity, smart design and robust materials together into a cohesive system - the LOW-STRESS Trommel and its paired NexGen screen panels.



The LOW-STRESS trommel and screen media are specifically designed and robustly constructed to enhance milling productivity.

Precision is maintained at every production stage, from the manufacture of NexGen media to the assembly of trommel and screen panels.

JD Singleton, Weir's Comminution Director for Europe, Middle East and Africa (EMEA).

Brad Shepherd, Director Service Line – Screen and Feeder Consumables at FLS, explains to *Modern Mining* that this approach is not about tweaking one component but rather rethinking the system from the ground up.

"Mines are demanding more than just tough equipment," says Shepherd. "They want engineered solutions that work harder, last longer and make life easier for operators and maintenance teams. That is exactly what our LOW-STRESS Trommel and NexGen media package delivers – it is a shift from reactive maintenance to proactive performance."

At the heart of the FLS LOW-STRESS Trommel design is an emphasis on structural optimisation. Every trommel frame is engineered to be both lighter and stronger, helping reduce fatigue stresses without compromising durability. Using finite element analysis (FEA), each design is validated to withstand the rigours of high-capacity mill operations.

"We have put a lot of focus into reducing the weight of the structure which not only extends the life of the trommel itself but also has a positive knock-on effect on the mill. It lowers stress on the bearings, reduces power draw and improves handling safety," Shepherd notes.

Fabricated using high performance materials, each frame is heat treated to relieve stress post-welding and then precision machined. Liners - available in polyurethane or rubber - are installed in key wear zones to ensure a long service life, even under the abrasive conditions typically found in mill discharge environments.

But performance isn't only about the frame, Shepherd explains. A range of optional customisations allows operators to tailor the trommel to the specific needs of their circuit. These include integrated washing systems to dislodge and recover fines from oversize material, a crucial feature where downstream processes could be compromised by carry-over.

Scrolls, impact pads, blanks and discharge lips further allow users to finetune pulp retention time, flow rates and material behaviour within the trommel.

"We have created a platform that can be adapted

Brad Shepherd, Director Service Line – Screen and Feeder Consumables at FLS and *Modern Mining* editor, Nellie Moodley.

The pouring of a NexGen panel is undertaken to achieve a product built for optimal performance.

and optimised for each application," Shepherd says. "This isn't a one-size-fits-all solution. We work closely with our customers to engineer the right combination of frame, liner and screen media with all designed to work seamlessly together."

"That media, of course, is the other half of the equation and here, FLS's NexGen screen panels bring significant advantages," he says.

Designed specifically to work in tandem with the LOW-STRESS Trommel, the NexGen media range is available in high performance rubber and polyurethane options. Panels are modular in design, allowing for easy rotation and replacement with standard sizes available off the shelf and custom geometries available on request.

"Our NexGen screen panels are all about wear life and throughput," Shepherd explains. "We have focused on maximising open area without compromising durability. And because the panels can be rotated, you get more mileage out of each one before it needs to be replaced. This brings real savings in time and cost."

One standout feature is the tool-free fastening system. Using a secure clip-on, clip-off mechanism, screen panels can be installed or removed quickly and safely, without the need for pins, bolts or special tools. This reduces changeout time during shutdowns and improves safety for crews working in confined or elevated spaces.

To ensure that trommel and media performance are fully aligned with process demands, FLS also applies discrete element modelling (DEM) and other digital tools during the design phase. This allows the team to simulate pulp flow, particle separation and screen wear under operating conditions, and to optimise the configuration before the equipment ever reaches site.

"This level of upfront engineering means fewer surprises once the unit is running," Shepherd says. "We can predict where wear will occur, how material will behave and what interventions might be needed over time. That kind of foresight is invaluable to our customers."

In applications where material handling is especially complex or high volume, custom options such as rider bars, modular spirals, lifters, deflectors, dams and discharge lips provide additional control over the screening environment. All components are manufactured to stringent global standards at FLS's recently expanded Delmas manufacturing facility, ensuring consistency and reliability.

Importantly, these systems are designed with flexibility in mind. Whether for a greenfield installation or a brownfield retrofit, FLS can integrate the trommel, screen media and mill interface into a single-source solution. This streamlines procurement, simplifies installation and ensures alignment across all elements of the screening circuit.

"We are not just selling a trommel or a screen panel," says Shepherd. "We are offering a system-level solution, and importantly one that is backed by decades of field experience, deep technical expertise and a real commitment to continuous improvement."

As mines around the world seek to do more with less - more throughput, more uptime, more safety - FLS's LOW-STRESS Trommel and NexGen screen media are proving to be a winning combination. Together, they offer a smarter safer and more sustainable path to screening performance.

"Mines partnering with us are seeing real returns," Shepherd concludes. "It is about delivering the right screening outcomes - not just on day one, but over the long haul." ■

Sandvik mobile crushing plants combine mobility, reliability and high performance to deliver efficient material processing across mining and quarrying applications.

Sandvik Rock Processing powers growth in Africa with innovation, strategy and customer focus

On the strength of its organic growth and strategic acquisitions, Sandvik Rock Processing is now strengthening its footprint across Africa – having integrated a full offering for customers across their comminution circuits.

Tarynn Yatras, Vice President – Sales Area Africa, Sandvik Rock Processing.

"Recent years have seen us transform from a primarily crushing-focused business into a diversified multi-division operation that now includes stationary crushing, mobile crushing and screening, vibrating screens, feeders and screen media – as well as attachment tools such as rock breakers," says Tarynn Yatras, Vice President Sales Area Africa for Sandvik Rock Processing. "Our journey reflects a deliberate strategy to align more closely with mining and infrastructure customers' needs across the continent."

Along with the wider offering, says Yatras, is the opportunity to leverage a solutions-based approach with customers. This is achieved by offering the expanded range through a single customer interface.

"This makes it easier for customers who are needing a selection of different solutions, from crushing and rock breaking to screening," she says. "We are not only in a position to serve diverse needs, but to integrate the solutions."

Sandvik Rock Processing has put a strong focus on the technical support for various segments of the market, across the lifecycle of its equipment, she explains. A dedicated manager now oversees training, competence development and process optimisation, supporting audits and building capability across the sales and service teams.

"This is a long term strategy aimed at exposing our people to real-world operations and equipping them with the insight needed to add value and provide world class service," she explains. "By positioning our technical resources closer to customers, we gain a deeper understanding of their unique needs and challenges, enabling us to help optimise their process plants."

There has also been increased engagement with engineering, procurement and construction (EPC) customers, fostering collaboration and the exchange of insights on both greenfield and brownfield opportunities. This has strengthened the company's position in mainstream mining projects, where its enhanced offering is sharply focused.

"At the same time, we continue to play a vital role in the infrastructure sector, where demand for our mobile crushers remains strong," she says.

Yatras emphasises that a cornerstone of Sandvik Rock Processing's strategy in Africa is the service underpinning its solutions, with the company investing in developing its people and capabilities to support the installed base. This includes successful graduate training programmes, such as the initiative in West Africa where young engineers and technicians are being developed to strengthen the skills pipeline for the future.

This aligns with the crucial focus on process optimisation, where technical teams work closely with customers to address specific challenges and identify opportunities to enhance plant performance and reduce total cost of ownership.

"We have made significant progress across all our territories, bringing our expertise and infrastructure closer to customers to support our expanded range," she says. "Our growing knowledge base enables deeper application analysis and more precise solution specification, which is embedded in our DNA and integrated into our recruitment, training, and competence development."

She notes that this approach paves the way for improved performance and efficiency in customer plants. In a recent project, for example, Sandvik Rock Processing developed 25 different flow sheets to refine the solution.

"This enabled us to identify an option that required fewer crushers than a competitor had proposed," she explains. "We met the customer's objectives with fewer machines, resulting in both lower capital expenditure and reduced operating costs."

One of the sales areas experiencing increasing demand is the company's range of mobile crushing and screening equipment. This surge, she notes, has been fuelled not only by increased demand from mining operations but also by infrastructure projects and contractors seeking rapid, flexible solutions. The appointment of distributors in South Africa in 2024 has further accelerated this momentum.

"Our partners have an in-depth understanding of the market and our customers, and they have extended our service coverage to support the equipment locally," she says. "This has broadened our reach and enhanced our responsiveness. We have also focused on bundling recommended spare parts with each unit and ensuring service capability is in place from day one."

She believes mobile crushing will play an increasingly important role, whether in supplementing process plant crushing and screening depending on the customer needs. The appeal of mobile units, she notes, lies in their versatility: mining customers use them to complement fixed plants, while contractors deploy them for infrastructure projects and also on-site mining crushing projects. In response to rising demand, ensuring stock availability has become a key priority for the company.

Sandvik mobile crushing and screening solutions are engineered for versatility and durability, helping customers achieve consistent production in the toughest conditions.

The Sandvik UJ443E jaw crusher is built for tough quarry applications, delivering high performance and durability in demanding conditions.

Innovation is further driving demand for mobile crushers, with Sandvik Rock Processing set to deliver its first fully electric-powered mobile crusher into Africa later this year.

"We are seeing growing interest in electric units, that have both electric and diesel power capabilities, particularly from mines investing in cleaner energy efficient equipment," says Yatras. "They align perfectly with operations aiming to cut emissions as part of their sustainability agenda. Beyond the environmental advantages, electric drives are also simpler and more efficient to maintain than diesel engines, with a lower total cost of ownership for our customers."

Turning to the company's range of attachment tools, such as rock breakers, she notes a more strategic approach. With applications ranging from fixed booms at crusher feeds to mobile units deployed in-pit after blasting, these tools were once sold on an ad hoc basis. Today, they are an integral part of the company's comprehensive solutions offering for mining.

"We are not waiting for sales to come to us," she says. "We are actively pursuing this business in the mining sector and supporting the aftermarket through our Africa footprint."

Yatras concludes that the integration across the expanded product range enables the company to tailor solutions more effectively, allowing her teams to recommend the optimal options for each customer's specific needs. ■

Astec Industries **tracks robust growth for mobile equipment**

Low investment in port and rail infrastructure over the past decade has led to supply chain constraints, poor port performance and cascading delays across the logistics system.

Innovex 100 manufacturing with used oil formulation.

Despite the supply chain challenges, the import/export market has been on an upward swing which is especially favourable for Astec Industries' mobile equipment business related to stacking, ship loading, reclamation and warehousing, according to Product Manager Andre Kruger, who spoke to *Modern Mining*.

Astec Industries designs, engineers, and manufactures specialised equipment for infrastructure development and materials handling with an emphasis on exceptional quality to meet customer requirements.

More recently, South African rail, port and pipeline company, Transnet, invested R3.4 billion in new port equipment which is boosting efficiency and reducing delays at its ports.

According to Kruger, clients in the import and export space require speedy movement of goods, including bulk commodities.

"Logistics methods and equipment used to move commodities from pit to port have remained largely unchanged for the past few decades. However, end-users have recognised the need for improved efficiencies to unlock cost savings and have turned to Astec Industries' specialised range of equipment. As a result, this business segment has been showing strong growth."

> **The challenge associated with EVs is the payload capacity and the ability to travel extended distances. While the trend is towards EVs, if one considers the volumes and the tonnages ports handle, it is not yet feasible to adopt entire fleets of electric powered equipment.**

The company's range of materials handling equipment operates all free-flowing bulk materials including ores, coal, aggregates and fertilisers.

Aside from supplying equipment to industry for various activities, the OEM partners with clients to deliver a holistic approach for the transport of bulk commodities and works to establish an optimum outcome for the movement of commodities.

"Once commodities are mined, crushed and transported to ports, the logistics chain beyond trucks and trains is where we fit in. We endeavour to streamline the process and deliver to client requirements," explains Kruger.

The flexibility offered by Astec's mobile units, ensures that equipment is easily relocated as the need

arises – be it around the site or from site to site.

Technology and innovation

In targeting a lower cost per tonne of material moved, the company innovates and develops new products and new features on its equipment. Currently, there are several product upgrades related to stacker and hopper feeders.

"As it is," explains Kruger, "our mobile and semi-mobile equipment eradicates the need for double handling. To this day, several competitors offload trucked material at the port before reloading it onto a feeder, stacker or ship loader and then onto a vessel. We have streamlined the process to discharge commodities directly from a truck, wagon or ship onto a stacker or a ship loader."

Given that the work area at ports often covers several kilometres, transporting goods across these distances is time-consuming and costly, which is where Astec's semi mobile and mobile equipment is ideal as it can traverse the distance faster and more efficiently than traditional methods.

According to Kruger, the production rate related to using traditional methods to move bulk materials averages between 300 and 500 tons per hour, significantly lower than Astec's technologies which track up to 3500 tons per hour.

Kruger explains that while the initial capex associated with the purchase of technologically advanced equipment is slightly higher, the benefit is a significant return on investment and a short payback period of two to three years.

The move to EVs

With the global move towards electric vehicles (trucks and equipment), how well-positioned is Astec Industries?

According to Kruger, while the move to EVs is all the rage, not all clients are able to adopt electric powered equipment, particularly small-scale miners or those with equipment that still has a long product life.

"The challenge associated with EVs is the payload capacity and the ability to travel extended distances. While the trend is towards EVs, if one considers the volumes and the tonnages ports handle, it is not yet feasible to adopt entire fleets of electric powered equipment."

Radial Ship loader with truck unloader.

Radial stacker.

Side Tip Hopper Feeder.

Kruger says that, as experts in the field, Astec is well placed to assist clients in determining the best product applications, including the ideal fuel source – be it electric, diesel powered or a combination of both. "It is important to remember, " he adds, "that many countries in Africa face electricity supply constraints. Aside from our line-up of diesel powered and electric powered products, we also provide generators to the industry."

Industry competitiveness

The company's strong line-up of advanced and highly competitive products delivers significant value for money – they are durable, efficient and deliver high production rates.

As such, the equipment supplier tracks strong demand for its products, particularly from ports and warehousing.

"We develop, improve and customise our products to meet industry's evolving needs. We are currently incorporating more features into our mobility equipment to ensure that the units are more versatile," concludes Kruger. ■

GDP obsession **eating us alive**

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

In my last column, I closed off by indicating that "until we start accounting differently for our exploitation of nature, we're going to continue valuing the wrong things and literally cut out the branches of the tree of life from underneath ourselves. It's a long way to fall." This was the conclusion after having dealt with the first two prescriptions that Herman Daly left us with in his farewell speech to the World Bank. As promised, I am going to deal with the next two here and show their implications for mining. Of course, for full context, you need to read last month's column too!

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

Mining, of course, extracts materials used to build technologies that can change our carbon trajectories.

For context, the point is that we all share one planet. We are not going to live on Mars, sorry Elon. We are not only being afflicted by climate change, but by rapid biodiversity loss too (which in turn is exacerbating the climate crisis). Six of our nine planetary boundaries have been crossed. Mining, of course, extracts materials used to build technologies that can change our carbon trajectories. Some of these new technologies can also help to reduce the ecological footprint of mining itself. So, provided we put an end to fossil fuel extraction and burning today, we might still see a favourable outcome. But hope is not a strategy. A real strategy requires a radical rethinking of how we account for negative externalities – the divergence between private returns and social costs (typically reflected in environmental damage to rivers, floodplains, etc.)

So, Herman Daly's third recommendation (back in 1994 already) was to "maximise the productivity of natural capital in the short run and invest in increasing its supply in the long run." Put aside for a second the problems of treating our natural world merely as 'natural capital' and give heed to what Daly argued – the natural world and man-made capital are hardly substitutes! Essentially, our destruction of nature has become a 'limiting factor' of production and we cannot replace it with anything man-made. By way of example: "The natural capital of the atmosphere's capacity to serve as a sink for CO_2 is likely to be even more limiting to the rate at which petroleum can be burned than is the source limit of remaining oil in the ground." Taxing production on the limiting factor is, therefore, very important, to incentivise investment in preservation of what remains of earth. We simply cannot think that planting trees or building fish farms comes anywhere close to replacing value already extracted from the system. "Cultivated natural capital usually requires a reduction in biodiversity relative to natural capital proper" – an understatement if ever there was one, but it was stated thirty years ago. Natural capital scarcity is now clearly the limiting factor to any attempts at economic growth (the chasing of which is the very thing destroying nature).

Practically, when one considers a new project – let's say it's a hydropower dam – the implication of Daly's point is that the ecological footprint has to be properly accounted for – and the associated activity properly taxed to incentivise natural capital

Some of the new technologies can also help to reduce the ecological footprint of mining itself.

protection. Take Stiegler's Gorge dam in Tanzania, for instance. It is in the middle of one of the most precious biodiversity hotspots in the world, a World Heritage Site to boot. Plans to build it in 1972 were eventually abandoned by the Norwegians, but former (and late) President Magufuli went ahead and had it built a few years ago. The ecological impacts are widespread – the natural flow of the Rufiji River is severely impacted, which affects downstream floodplains and thereby lowers agricultural yields; fish production in the oxbow lakes near the mouth is similarly undermined; as well as nutrient flow into the coastal mangrove forests that serve as carbon sinks. Nobody running the cost-benefit analysis for the dam seems to have given a damn about costing the true (and irreversible) ecological value foregone. Try running an economy with more starving people and depleted carbon sinks. That's all that Magufuli has essentially produced.

Lastly, Daly delivered a warning that nobody heeded at the time: "Move away from the ideology of global economic integration by free trade, free capital mobility and export-led growth, and toward a more nationalist orientation that seeks to develop domestic production for internal markets as the first option, having recourse to international trade only when clearly much more efficient." Why? Because he foresaw a race to the bottom, where the already-wealthy countries became wealthier and everyone else became overly dependent. Moreover, and most importantly for this conversation, he said that global competitiveness "(frequently a thought-substituting slogan) usually reflects not so much a real increase in resource productivity as a standards-lowering competition to reduce wages, externalise environmental and social costs, and export natural capital at low prices while calling it income."

> Mulittnationals have too much power, pollute at will and chase export-led growth instead of considering the true-costs and benefits fo production and consumption.

The idea of abandoning global free trade (and capital movement) is often anathema to economists schooled in Ricardo's theory of comparative advantage. I sympathise, but I also see Daly's warning now completely manifest, that multinationals have too much power, pollute at will, and countries simply chasing export-led growth instead of considering the true costs and benefits of production and consumption.

As we consider the fact that we only have one planet, we really need to decide whether what we currently report as value – global GDP – is at all a fair reflection of real value. If we have destroyed the planet in the process, surely it is time to reconsider how we measure value. Changing measurements of value change incentives, and might induce us to take fewer potentially catastrophic risks. ■

KSB believes trade shows are vital in the era of low-cost imports

As South Africa grapples with a flood of low-cost pump and valve imports from Asia and other global manufacturing hubs, the recent IFAT Africa trade show in Johannesburg offered a rare opportunity for local pump and valve manufacturers to prove their mettle. For KSB Pumps and Valves, one of only a few manufacturers with large-scale local manufacturing ability the event was not just about showcasing products it was about asserting capability and longevity in a fiercely competitive market. According to Hugo du Plessis, area manager at KSB Pumps and Valves, shows like IFAT are critical for customer engagement especially when less expensive imports promise much but often fail to deliver the same level of support and durability. Many importers, he explains, don't have established agencies in South Africa, let alone support infrastructure.

KSB Pumps and Valves showcased its products at IFAT Africa trade show.

"Municipalities and contractors are still chasing the lowest price. But they end up dealing with failures, maintenance nightmares and lack of spares. If something goes wrong three years down the line who's going to fix it? Who's going to have parts on hand," asks Hugo.

KSB by contrast leverages such events to show not only the breadth of their technology, like their newly developed locally manufactured wastewater pumping solutions but also their long-standing commitment to local manufacture after-sales support and technical expertise.■

BME's underground blasting innovations **improve fragmentation**

The close correlation between fragmentation size and mining costs has often been overlooked by mines, said Derick Menezes, Regional Manager: Underground Operations at BME, in a recent webinar.

"Both extra fine and excessive forced rock fragmentation increase total mining costs," said Menezes. "However, by aligning fragmentation size and distribution with the capabilities of existing loading, hauling and processing equipment, skilled drilling and blasting engineers and teams at the face can optimise blasting results."

With explosives making up between 5% and 15% of total underground mining costs, it is imperative that they provide the best possible performance, he emphasised.

"By helping mines to achieve the desired fragmentation size and distribution, our blasting solutions also reduce operating costs downstream. This is because of improved diggability and footwall conditions, as well as reduced wear and tear on loading equipment and the need for secondary drilling and scaling," he added.

Precise blasts also contribute to improved ground control in underground mines, which has a bearing not only on productivity but on safety.

"People, equipment and material travel through new areas as the mine advances, so the stability of hanging and side walls is important to safety," he said. "By reducing overbreak and underbreak, quality blasting improves safety conditions for employees and prevents the risk of damage to equipment."

He added that better ground control also improved productivity by enabling faster access to blasted areas.

Another crucial benefit of blasting with BME technology such as AXXIS™ is reduced vibrations, which mitigates the impact of underground operations on communities and the environment, enabling mines to maintain their social licenses to operate. ■

BME's underground blasting innovations improve fragmentation and reduce mining costs.

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Cloete's Sand and Stone takes delivery of Volvo EC300 Excavator

Equipment supplier, Babcock, recently delivered the first new-generation Volvo EC300 excavator in Southern Africa to long-standing customer Cloete's Sand and Stone - a company known for its commitment to service excellence and industry reliability since 1982.

The EC300 is part of Volvo Construction Equipment's latest generation of excavators, which bring up to 15% improved fuel efficiency, enhanced operator comfort, and next-level productivity to the African market. Cloete's Sand and Stone's decision to invest in the EC300 is both a vote of confidence in the Volvo brand and a recognition of the equipment's alignment with their business needs.

Babcock delivered new-generation Volvo EC300 excavator to Cloete's Sand and Stone.

"We are constantly monitoring fuel consumption across the business. Not doing so would be detrimental to our bottom line, so it's safe to say fuel efficiency is critical." says Wesley Cloete, Managing Director of Cloete's Sand and Stone, who personally operated the EC300 on the day it was delivered in June 2025.

Built for high production environments, the EC300 is ideal for operations like Cloete's, where excavators play a key role in fast, efficient loading of compacted materials. The machine's speed and power are complemented by a completely redesigned cab that improves operator comfort and control - an important factor in improving productivity across long working hours.

The EC300 is also compatible with Volvo's Dig Assist technology, offering precision tools such as real-time weighing, automated digging, and 360° Smart View monitoring. While it's still early days for the new machine, Cloete's Sand and Stone report measurable improvements in cycle times and fuel consumption. ■

Werner Pumps improve power plant maintenance

As South Africa works to improve its power supply and stability, maintenance of power plants is receiving fresh attention. Werner Pumps, a South African manufacturer of high-pressure jetting and vacuum equipment, says there's a definite uptick in demand for the vacuum trucks used for power plant cleaning and maintenance.

George Jolly, National Marketing Manager for Werner Pumps, says the company has supplied five trucks to three different power stations – two in Limpopo, and three to Mpumalanga province.

"The Werner Pumps Indlovu Vacuum Truck and Impi Wet/Dry Combination Vacuum and Jetting trucks are the most popular options for power plant maintenance," he says. "The Indlovu unit is primarily being used for vacuum cleaning of wet and dry fly ash from the furnaces, as well as for sludges and slurries around the plants, and the Combi Vac Jet truck is being used for drain management within the plants."

The Indlovu units (PTO driven or independent engine variants) are engineered specifically for fly ash, slag, and dry bulk removal in plant environments. With 10,000–12,500 L stainless steel tanks and dual-cyclone filters, these units effectively suction hazardous or abrasive residues. Optional telescopic booms and water-supply tanks that support the liquid-ring vacuum pump bolster on-site flexibility.

"At Werner Pumps, we pride ourselves on offering 100% locally manufactured, high quality, low maintenance and long-life equipment solutions with maintenance plans attached that allow maintenance to be done conveniently onsite," says Jolly. ■

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